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EDITED BY

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Original Articles.

THE AMERICAN PEDIATRIC SOCIETY'S COLLECTIVE INVESTIGATION ON INFANTILE SCURVY IN NORTH AMERICA.

The subject of infantile scurvy has so recently come into prominence, and still presents so many mooted questions, especially regarding its etiology, that it was the decision of the American Pediatric Society a year ago to undertake a collective investigation of the matter, based upon the cases occurring in America. This seemed particularly needed, as no other such study upon a large number of cases has yet been made in any country.

The committee which is now making its report was accordingly appointed. It has been diligently at work during nearly a year, and has used every means in its power to reach reports of cases of the disease. A list as accurate as possible was prepared of all the medical journals of North America, and a notice of the proposed investigation was sent to each, inviting correspondence on the part of all readers. Letters were sent to the secretaries of the county societies in a large number of the States of the Union, requesting that notice be given at the meetings. Letters were also addressed to the professors of diseases of children in all the regular medical colleges of the United States. The "Index Medicus" was searched for the names of those who had published reports of cases, and letters were addressed to all of them, as indeed to all physicians of whom even the rumor had come of probable cases under their charge. Circulars were printed containing questions to be answered, and were sent to all the members of the American Pediatric Society, to all physicians applying for them, and, finally, wherever there seemed any chance of getting a response.

The questions contained in the circular requested information on the following points: Whether the case was seen in hospital or private practice; the race, sex, and age; the hygienic surroundings, family history, and previous illnesses; full details of feeding from birth, and the influence which the food appeared to have had upon the development of the disease; the symptoms in detail, with special reference to pain and its location, apparent paralysis or inability to move, swellings, fractures, hemorrhages, the condition of the gums, the presence of fever, the condition of the urine and bowels, the presence of anæmia or malnutrition and of rickets or any other complicating diseases, and the character of the first symptom to develop; the treatment in detail, with duration of illness, and the time before decided improvement was discovered; the direct cause of death in fatal cases, and the post-mortem findings; and, finally, whether the case had been published previously.

The committee has been surprised and pleased at the large number of replies received. There are other cases of which it has knowledge of which no reports could be obtained, and undoubtedly many more whose existence was not discovered. But in all the committee has collected 379 cases seen by 138 observers. Some of the cases are very incompletely reported, but in the majority of instances the answers are for the most part satisfactory. No cases needed to be excluded as instances of mistaken diagnosis, although a very few were somewhat doubtful.

The topics covered by the questions can best be taken up for the most part seriatim, stating merely what the reports state, without vouching for the correctness of opinions.

Race.—The race to which the subjects of the disease belong is stated in 372 cases. It is not given with definiteness sufficiently often to allow of an analysis further than to say that there were 367 white, 4 black, and 1 Chinese.

Sex.—Sex shows out of 372 cases, 189 male, *i.e.*, 51 per cent.; and 183 female, *i.e.*, 49 per cent.; a difference not decided enough to indicate that sex is an etiological factor. In the remaining cases the sex is not mentioned.

Age.—Age is a very important matter. Although, strictly speaking, the age of the cases of infantile scurvy should be limited to those under two years, the committee has ventured to include a few in children slightly or decidedly older than this; since the etiology and symptoms are not different in any respect. Question IV. on the circular reads, "Age when Seen with Scurvy," while XIV. reads, "Duration of Illness before Treatment was Commenced." By combining the answers to these two questions, the age at which the illness developed could be determined in most instances. Reliable information was given in 359 cases; in the remaining number the age was unknown or was not stated. The accompanying tabular arrangement shows the number of cases developing at different ages:

AGE WHEN SCURVY DEVELOPED.

Age.	Number of Cases.	Percentage.	Age.	Number of Cases.	Percentage.
3 weeks.	1	0.27	16 months.	7	1.70
1½ months.	1	0.27	17 "	6	1.67
2 "	3	0.83	18 "	7	1.70
3 "	2	0.55	19 "	4	1.11
4 "	9	2.50	20 "	2	0.55
5 "	5	1.40	22 "	1	0.27
6 "	13	3.62	23 "	1	0.27
7 "	33	9.19	2 years.	2	0.55
8 "	41	11.42	2 years 3 months.	1	0.27
9 "	47	13.09	2 " 6 "	1	0.27
10 "	51	14.20	2 " 7 "	1	0.27
11 "	26	7.24	2 " 8 "	1	0.27
12 "	25	7.00	3 " 6 "	1	0.27
13 "	25	7.00	4 " 2 "	1	0.27
14 "	22	6.12	6 " "	1	0.27
15 "	17	4.73	9 " "	1	0.27

It will be seen that the disease is most apt to develop between the ages of seven and fourteen months, inclusive. The youngest case was that reported by Dr. A. Matheson, of Neillsville, Wis. This was a child of four weeks, who had already been ill five days when first seen. The child was fed at the breast. Its hygienic surroundings were poor. The disease exhibited perfectly typical symptoms and ended fatally.

The oldest child, reported by Dr. J. H. Fruitnight, was one of nine years, and was also a typical case, rapidly recovering under dietetic treatment. The cause appeared to be improper diet.

[1] Reported at the tenth annual meeting, Cincinnati, June 2, 1898.

Social Position.—Of 379 cases it is interesting to note that 83 per cent. occurred in private practice, and only 17 per cent. in hospital practice. Although no absolute class distinctions can be based on these figures, yet they point very positively to the greater tendency of the disease to occur among the rich or the well-to-do. This tendency is still further illustrated by the statements of the writers regarding the hygienic surroundings of the cases. In 303 cases these are described as good, and often the statement is volunteered that they were of the very best. In 5 they were doubtful, and in only 40 are they described as bad. The figures of the report would therefore seem to indicate that the influence of bad hygienic conditions upon the etiology of the disease is extremely limited.

Previous Health.—Out of 285 cases suitable for study, it is distinctly stated in 167 that the previous health had been good. In 118 the child had suffered from various diseased conditions which may be enumerated as follows:

Bronchitis, 5; chicken-pox, 1; constipation, 1; convulsions, 3; cretinism, 1; diarrhœal conditions, 45; eczema, 1; furunculosis, 1; indigestion, 22; influenza, 6; malaria, 1; measles, 7; pneumonia, 5; rheumatism, 1; scurvy (previous attack), 1; scrofulous diathesis, 1; typhoid fever, 1; whooping-cough, 2.

It is evident that the occurrence of most of these diseases can be considered only as accidental. There is a striking preponderance of instances of digestive disturbance. This probably is an indication that the faulty diet which occasioned the scurvy produced the indigestion also. It is no proof that the digestive disease itself bore any etiological relation to the constitutional affection. This is clearly the view of the correspondents, for, in answer to the question of the circular, a belief in any other cause than diet is expressed in only 24 instances.

Rickets, anæmia, and malnutrition are not mentioned in the foregoing list. They will be referred to later.

Attention may be called to the instance of a second attack of scurvy reported by Dr. L. E. Holt. The child was eighteen months of age at the time of the second attack, the previous one having developed four months before. The first attack followed the use of Mellin's food and sterilized milk. Recovery followed in a week upon a diet of sterilized milk and beef juice, no fruit juice being given. The second attack followed the use of Reed & Carnrick's soluble food. The patient in this attack was in a wretched condition and died in eight days.

The case of scurvy developing in a cretin, reported by Dr. A. Caillé, is also interesting. The child was a typical cretin of fourteen months. Scurvy followed the use of condensed milk. Recovery was very prompt under the administration of sterilized milk, fruit juice, and cereals.

Family History.—This, too, appears to exert little or no influence. In 129 cases the family history is stated to have been good, and in 97 it is negative. In 74 the following diseases are mentioned in the family:

Alcoholism, 2; anæmia, 2; asthma, 1; carcinoma, 1; caries of spine, 1; diarrhœa, 1; eczema, 1; gout, 2; neurotic tendency, 6; paresis, 1; pneumonia, 1; rheumatism, 16; sciatica, 1; scurvy, 1; syphilis, 7; tuberculosis, 29; uricacidæmia, 1.

Diet.—The most important etiological factor, according to general opinion, is a dietetic one. Consequently, the committee has paid particular attention to this point. When correspondents did not make the matter quite clear in their answers, personal letters were addressed to them, asking for further information. A large number of such letters have been written, and replies received in most instances. Full details were asked regarding diet from birth onward, and the question of food used at the time the scurvy developed, or so shortly before that it might seem to be associated with it, was particularly emphasized. The question was also asked, whether in the opinion of each correspondent there was reason to believe that the disease depended on the nature of the food used. An affirmative answer was received in 275 cases; negative, and the disease attributed to other causes, in 24. The committee is not in a position to judge of the correctness of this view, nor can it claim that the disease did arise in any instance as the result of the diet employed. It would make merely the following statements as to the food employed at or shortly before the symptoms of scurvy were observed according to the reporters' replies.

Any accurate percentage analysis of the report is impossible, both because the correspondents have not always stated the exact nature of the food, and because in very many instances more than one form of food was given. Perhaps the following summary of some of the main divisions may be of value, it being remembered, however, that cases are repeatedly counted twice; *e.g.*, one case may be counted in the condensed-milk class and again in the sterilized-milk division.

Food Used at the Time or Shortly before Scurvy Developed.—Number of cases in which the character of the food is specified, 356.

Food given as follows:

Breast Milk.—Alone, 10; with raw milk and amylaceæ, 1; with sterilized milk and amylaceæ, 1; total, 12.

Raw Milk.—Alone, 4; with breast milk and amylaceæ, 1; total, 5.

Milk (nothing said about heating).—Alone, 8; peptonized, 4; with amylaceæ, 4; total, 16.

Sterilized Milk.—Alone, 68; with proprietary foods, 21; with amylaceæ, 8; peptonized, 10; total, 107.

Pasteurized Milk.—Alone, 16; with proprietary foods, 2; with amylaceæ, 1; peptonized, 1; total, 20.

Peptonized Milk.—Nothing further stated, 3; sterilized, 8; pasteurized, 1; with proprietary foods, 1; with amylaceæ, 1; total, 14.

Amylaceous Food (not proprietary).—Alone, 6; with breast milk, 3; with milk, 5; with sterilized milk, 8; with Pasteurized milk, 1; with peptonized milk, 1; total, 24 (9 of these were oatmeal).

Table Food.—Nothing else mentioned, 11; with condensed milk, 1; total, 12.

Mellin's Food.—Nothing further stated, 42; with condensed milk, 22; with sterilized milk, 16; with pasteurized milk, 2; with other proprietary food, 1; total, 83.

Malted Milk.—Nothing further stated, 44; with cream, 1; with amylaceæ, 1; with other proprietary foods, 2; total, 48.

Condensed Milk.—Alone, 32; with milk, 1; with cream, 1; with other proprietary foods, 3; with table food, 1; total, 38.

Reed & Carnrick's Soluble Food.—13.

Imperial Granum.—6.

Liebig's Food.—Alone, 1; with condensed milk, 1; total, 2.

Lactated Food.—Alone, 3; with condensed milk, 1; total, 4.

Nestlé's Food.—Alone, 1; with sterilized peptonized milk 1; total, 2.

Among other articles of diet mentioned by correspondents, each in one instance, are: Gardner's food, Robinson's barley, Ridge's food, Brush's food, animal broths, Bartlett's pepsinated food, Lactopræparata with malted milk.

There are a number of instances in which the writers mention "proprietary foods" without further de-

signation. In all 214 cases (60 per cent.) were fed on proprietary foods.

The effect of dietetic treatment has such an important bearing upon the etiological influence of diet that the whole matter will be discussed more fully under "Treatment."

Symptoms.—The symptoms in infantile scurvy are so typical and well known that they would appear to need little further study. Nevertheless, the attention which has been directed to them by the questions of the circular has not been without fruit.

First Symptom to Develop and Order and Time of Other Symptoms.—In response to this question the answers have not been altogether satisfactory. Undoubtedly in a large number such early symptoms as anæmia and malnutrition were overlooked or were not included by the readers as symptoms of the disease. Then in a large number, perhaps the majority of cases, the answers have not made it quite clear whether the correspondents meant that a certain number of symptoms developed in the order in which the names were written, or whether they all were noticed at one time. Presuming that the first is the writers' meaning, we make the following statement of the first symptom seen, basing this on 327 cases. The order of symptoms is too complicated and too uncertain to warrant a statistical arrangement.

First Symptoms Seen.—Pain and tenderness, 145; affection of gums, 42; interference with motion, 36; anæmia, 27; cutaneous hemorrhages, 22; swellings, 16; restlessness, 6; anorexia, 5; debility, 5; diarrhœa, 5; constipation, 2; hemorrhage from nose, 1; hemorrhage from mouth, 1; hemorrhage from rectum, 1; hæmaturia, 3; "hæmatoma of tongue," 1; irritability, 3; vomiting, 1; fever, 1; opisthotonos, 1; sweating, 1.

Pain on Motion or Handling.—Pain is clearly a very prominent symptom of the disease. Generally it is evident only when the child is moved, or tries to move itself. Sometimes it is so intense that the approach of any one to the bedside is sufficient to cause the child to scream out through fear of being touched. Pain is reported present in 314 instances. In most of the remaining no answer was made, and it is probable that the symptom could not have been a prominent one. The locality of the pain in the cases in which there were accurate details was as follows: Legs, 120; legs and arms, 25; legs and one arm, 11; legs and body, 4; one leg, 13; one leg and one arm, 1; one arm, 1; back, 1; back and legs, 1; back and leg, 1; back and thighs, 1; thighs, 1; hips and thigh, 1; one thigh, 2; one hip, 2; knees, 1; knees and ankles, 2; knees, ankles, and shoulders, 1; knees, ankles, and wrists, 2; knees and arms, 1; one knee, 1; one ankle, 1; ankles, 1; ankles and feet, 1; ankles and elbows, 1; elbow, 1.

Pain when at Rest.—In 91 cases pain seems to have been present even when the child was still; while in 134 it is definitely stated as absent under this condition.

Interference with Motion.—The symptom variously described as paralysis, pseudo-paralysis, and disability or unwillingness to move is reported frequently. It probably depends in every instance upon pain, since there is no evidence that actual paralysis occurs in the disease. In 319 cases interference with motion of this nature existed.

Rigidity is described as present in 96 cases and absent in 106. It is due to pain in most instances, but perhaps in others may have been occasioned or increased by the presence of swelling.

The parts of the body in which motion has been interfered with in any way in the cases reported, and the locality mentioned in detail, may be enumerated as follows:

Legs, 159; legs and arms, 55; legs and one arm, 14; legs and one hand, 2; one arm, 3; legs and thighs, 1; thighs, 3; one leg and one arm, 1; one leg, 27; one thigh, 2; hips, 1; one hip, 2; one hip and thigh, 1; one hip and knee, 3; hip, leg, and shoulder, 1; hip, élbow, and shoulder, 1; one knee, 4; one ankle, 2; ankles, knees, hand, and wrist, 1.

Position of the Limbs.—To a question regarding the position of the limbs, about which Barlowe speaks so definitely, there have been replies in 205 cases. In 17 of these the position was normal. In the rest we find the position of the limbs as follows:

Flexed, 152; extended, 23; flexed and abducted, 1; flexed and adducted, 1; flexed and everted, 1; abducted, 1; everted, 3; everted and extended, 2; toes extended, 1; feet extended, 3.

Weakness of the Back.—The occurrence of weakness of the back, a symptom which Barlowe says is marked, is mentioned as present in 97 of the cases reported to the committee and as absent in 108. In the remaining nothing is said of it.

Depression of the Sternum.—This condition is likewise emphasized by Barlowe as being sometimes striking and characteristic. It is mentioned in 34 cases, but said to have been absent in 170 others. It is not certain in the cases of the report how frequently the condition had developed acutely as a result of scurvy and how often it had already been produced by a previously existing rachitis.

Swellings.—The effort has been made by analyzing the cases collected to determine the position of local swellings, whether these were situated in the joints or the shafts of the limbs, in the soft tissues or in the bones, and whether any redness was present. The answers are not clear in every instance, and are frequently somewhat contradictory, partly, perhaps, from failure of the observer to understand the question, and partly from lack of careful discrimination between subperiosteal and other effusions, and between effusion into a joint and that about it. The great irregularity also of the distribution of the swelling renders an accurate tabular arrangement too complicated. Remembering that in many cases more than one part of the body was involved and that the figures given do not mean that only the portion mentioned is affected in these cases, the following division may be made:

Joints (or probably oftener about joints) involved in 165 cases. Location given in 101, viz.: Knees, 73; ankles, 28; wrists, 12; hand, 1; elbow, 3; shoulder, 5; hip, 6.

Shafts of limbs involved in 179 cases. Location given in 123, viz.: Thighs, 59; legs (below knee), 61; "legs" (not further stated), 11; forearm, 5; upper arm, 4; "arm," 5; ribs, 1; scapula, 1; ilium, 1.

The gross results of the answers regarding the tissues in which the swelling occurred give:

Swelling in soft tissues, 97.

Swelling, subperiosteal, 114.

Swelling in both situations, 16.

In 69 cases the swollen parts were reddened also. It is stated that there was no redness in 121. A more general swelling, to be classified rather as œdema, is described in 68 cases and stated to have been absent in 98.

In regard to the swelling or protrusion of one or both eyes which has been described by writers, the symptom is said to have been absent in 110 cases and present in 49. In 9 of these swelling only is mentioned, in 18 protrusion only, and in 22 both are referred to.

Gums.—The condition of the gums and mouth is one of extreme interest. In 16 cases it is distinctly stated that the gums were entirely unaffected, while in 313 they were diseased. The degree of involvement varies from slight swelling to great sponginess and even ulceration. The degree and form of the affec-

tion in the cases suitable for study may be seen in the following table:

Swelling, absent, 14; present, 293
Sponginess, absent, 27; present, 249.
Discoloration, absent, 23; present, 259.
Bleeding, absent, 64; present, 188.
Ulceration, absent, 101; present, 91.

The relation of the affection of the gums to the presence of teeth is of much interest. In nearly all the cases of scurvy in this report teeth were present, but what influence this has is not quite clear, since experience teaches that curiously it is usually the gums of the upper jaw which are most affected, although the lower teeth naturally are the first cut. Statistics on the portion of the gums involved were not furnished sufficiently to allow of conclusions; but regarding the teeth it is to be noted that of 359 cases suitable for comparison teeth had already appeared in 314 instances, *i.e.*, 87.5 per cent.; while in only 45 cases, *i.e.*, 12.5 per cent., were there no teeth. In studying more carefully these 45 cases of scurvy without teeth we may make the following analysis:

No teeth; gums normal, 21 cases.
No teeth; gums affected, 24 cases.

The conditions present in the latter group were as follows:

Swelling, 19 cases; sponginess, 14 cases; bleeding, 5 cases; discoloration, 17 cases; ulceration, 4 cases.

This is a proof that affection of the gums may occur equally well when there are no teeth as when teeth have developed. The fact that in the great majority of cases of infantile scurvy the presence of teeth and the affection of the gums are associated depends merely on the fact that the disease generally develops at an age when teeth naturally have been cut.

Cutaneous Hemorrhages.—These have occurred with frequency in the cases reported. Accurate data are given in 353 cases. Of these, cutaneous hemorrhage is reported present in 182 and absent in 171. There is much doubt about the accuracy of the writers in their classification of the hemorrhages according to size, and to the proper use by them of the descriptive names employed, inasmuch as the question on this point did not specify clearly. In 99 instances the presence of "ecchymoses" is mentioned. In 83 "purpuric eruption" is reported, and in 37 "petechiæ." In 13 the nature of the lesion is not specified.

Hemorrhage from Mucous Membranes.—Data are available in 361 cases. Of these there were no hemorrhages from any mucous membrane in 196, while in 164 they occurred. In 93 cases there was hemorrhage from the mouth. This includes the cases in which bleeding from the gums is described by writers. In 33 cases there was bleeding from the nose, in 2 from the stomach, and in 37 from the bowels. Cases of hæmaturia are not included here, and will be referred to later.

Fractures.—Fractures in infantile scurvy are usually separations of the epiphyses merely. Even these would seem to be rare, for fracture of any kind is mentioned in only 9 of our cases. In 342 it is distinctly stated to have been absent, and in the remaining the question is not answered.

Fever.—Probably in the majority of the cases of the disease upon which this report is based no temperature record has been made. In 93 cases it is stated that there was no fever; in 182 it was present, and in the remaining no answer is given. In the cases in which it was present it is described as slight in 116 instances, moderate in 23, high in 8, and irregular in 6. Clearly, fever is not a prominent symptom of the disease, and probably often, when present, depends on accidental causes.

Bowel Movements.—The following conditions are mentioned:

Bowels regular, 74.
Bowels irregular, 15.
Constipation, 126.
Diarrhœa, 65.
Bloody diarrhœa, 12.

Urine.—Judging from the number of instances in which no answers have been returned, no examination of the urine has been made in most of the cases. It is reported as examined for albumin in 163 cases; in 33 of these albuminuria is reported and in 130 it was absent. Tube casts were present in 13 instances, absent in 13, and no observation is reported in the others.

Properly speaking, the occurrence of hæmaturia should be discussed under the title of hemorrhage. It is mentioned as present in 22 cases only. Of other abnormal conditions of the urine, the following may be mentioned: Urine very acid, 1; urine scanty, 9; urine suppressed, 1; urine increased in quantity, 3; glycosuria, 1; hæmoglobinuria, 1; pus (from cystitis), 1; phosphates increased, 1; chlorides increased, 1.

Anæmia; Malnutrition.—These conditions, already referred to as often the earliest symptoms of infantile scurvy, may have been the first evidences of the disease in many of the cases on which this report is based. In other cases they must be regarded as complicating affections only. Answers are not full enough to allow of satisfactory conclusions on this point.

Anæmia is said to have been present in 254 cases, as follows:

Anæmia present (without specifying degree), 47.
Anæmia slight, 66.
Anæmia moderate, 32.
Anæmia marked, 109.

Blood examinations were made in 15 cases and the conditions noted as follows: The percentage of hæmoglobin was much reduced in all the cases, 8 in number, in which an examination was made, in some it being as low as 35 per cent. Of the 7 cases in which the red blood corpuscles were counted, all showed a reduction except 2. In these 2 the number was normal or nearly so, but the hæmoglobin was 50 and 35 per cent., respectively. Leucocytosis was present in 5 cases, poikilocytosis in 2. In only one instance was there a differential count of the leucocytes made.

Of 217 cases in which the question is answered, emaciation is recorded in 167 and is said to have been absent in 50.

Malnutrition was observed in 178 cases out of 216, in which replies were made as follows:

Malnutrition present (without specifying degree), 108; slight, 20; moderate, 7; marked, 43.

Rickets.—Infantile scurvy has so often been described as "scurvy rickets" and "acute rickets" that the investigation of the actual relationship of the two diseases was one of the matters to which the committee directed especial attention. The question upon the circular reads as follows: (*a*) "Any symptoms of rickets present? (*b*) Slight or well marked? (*c*) What relation in time of development did they bear to the scurvy?" Satisfactory answers were received in 340 cases; in 152 of these (45 per cent.), there were symptoms of rickets present, slight in 72, marked in 64, and the degree not mentioned in 16. In the remaining cases (55 per cent.), rickets is definitely stated to have been absent. With regard to the relation in time of development, it is stated in 50 cases that the rickets was first present; in 14 that it developed with the scurvy, and in 2 after it. There does not seem to be evidence, as far as this investigation teaches, that the association of rickets and scurvy is at all intimate. Very possibly the same defect in diet which produced the one produced the other also, but the rapid recovery under treatment which the scurvy underwent did not apply to the rickets. This seems to indicate only

accidental association of the two diseases; certainly not any causal relation between them.

Other Complicating Conditions.—A variety of affections are mentioned complicating scurvy in a number of cases, as follows:

Bronchitis, 5; cretinism, 1; enlargement of inguinal glands, 1; "cerebral symptoms," 1; convulsions, 1; pneumonia, 2; boils, 1; irritability, 1; vomiting, 4; eczema, 2; enuresis, 1; sweating of the head, 1; tympanites, 1; caput medusæ, 1; diaphoresis, 1; pertussis, 2; insomnia, 1; anorexia, 2; postnasal discharge, 1; measles, 1; restlessness, 1; phimosis, 1; indigestion, 2; laryngismus stridulus, 1; cystitis, 1.

Diagnosis.—The study of diagnosis has been only incidental, based upon the mistake made before the disease was recognized in certain cases. The only disease for which infantile scurvy was repeatedly taken appears to have been rheumatism. In several instances the affection of the legs was supposed to be due to sarcoma. The apparent paralytic condition has also been the cause of error in some instances.

Duration of Illness and Prognosis.—The disease is essentially chronic, its course terminating only on the institution of proper treatment. This seems to be proved by the answers contained in the circulars. To the question concerning the duration of the disease before the case came under observation, replies were received in 306 cases, of which the following analysis may be made:

Duration of Disease before Treatment was Commenced.

Days.	Cases.	Weeks.	Cases.	Months.	Cases.
2	3	1	15	1	18
3	3	2	33	2	42
5	2	3	58	3	31
8	1	4	22	4	14
9	1	5	8	5	4
10	9	6	29	6	7
24	1	7	6	7	2
		8	1	10	1
		10	3	12	1
				2½ years.	1

Intensely interesting in this connection are the replies to the next two questions: First, duration of illness after treatment was commenced; and second, duration of treatment before marked improvement was noticed. To the first question replies concerning 308 cases were received. Of course those fatal during the attack of scurvy are not included here nor those which passed from observation.

Still more striking are the answers to the second question, as to the time when marked improvement was first noticed. There are 311 cases suitable for study in this category, excluding fatal cases and those passing from observation as before. The replies are often astonishing. Nothing is more striking than the speed with which these reports show a grave constitutional disease disappearing under proper treatment. There is certainly no disease for which a more specific treatment can be said to exist. The replies to the last two questions may be conveniently stated in the following tables:

Duration of Treatment before Marked Improvement was Noticed.

Days.	Cases.	Weeks.	Cases.	Months.	Cases.
1	19	1	47	1	6
2	58	2	27	2	4
3	46	3	8	3	4
4	26	4	1		
5	19	5	1		
6	1	6	1		
7	2				
8	2				
9	1				
10	7				
12	2				

Reported as prompt recovery, 13; at once, 15; immediate, 1.

Duration of Treatment before Recovery was Complete.

Days.	Cases.	Weeks.	Cases.	Months.	Cases.
1	6	1	48	1	28
2	5	2	54	2	14
3	14	3	36	3	5
4	8	4	14	4	2
5	5	5	6	5	1
6	1	6	14	6	2
8	2	7	1	7	1
10	17			8	1
12	3			9	1
13	3				
15	2				
16	1				

Reported as immediate, 4; almost immediate, 9.

Treatment.—Not so much could be learned of the value of treatment as could be desired, on account of the fact that in nearly all cases we have a combination of diet and of medicinal measures, including the use of fruit juices, and it is impossible to determine absolutely which was the active curative agent.

Taking the cases in which treatment was effectual and which are suitable for study, the results may be stated as follows:

I. Cases recovering under treatment with drugs only (no change in diet) 0
II. Cases recovering under the use of fruit juice alone (no change in diet) 3
III. Cases recovering under the use of beef juice alone (no change in diet) 2
IV. Cases recovering under the use of beef juice and fruit juice combined, with or without drugs (no change in diet) 6
V. Cases recovering under the combined effect of change of diet, often including beef juice, and employment of fruit juice, with or without drugs 257
VI. Cases recovering under change of diet, often including beef juice, and use of drugs (no fruit juice) 20
VII. Cases recovering under change of diet alone, often including beef juice (no fruit juice) 38

These last two may be properly considered together, since there is no evidence that any treatment with drugs has an appreciable effect upon the disease. So many of the reported cases were treated with drugs alone without result before the correct diagnosis was made and other treatment instituted, that this belief is amply justified. Combining, therefore, divisions VI. and VII., and comparing the statements of the writers regarding the diet employed during treatment and that employed when the scurvy developed, we may make the following table based upon fifty-eight cases.

Again the committee would state that no claim is made that the recovery was the result of the change, but that it quotes merely the statements of the correspondents to the effcet that recovery took place after the change was made.

VI. and VII.—Recovery Following Change in Diet Alone, with or without Drugs. (No Fruit Juice Employed.)

Mellin's food to milk and beef juice 2
" " " raw milk and beef juice 1
" " " modified milk 4
" " " modified milk and beef juice 2
" " " diet and beef juice 1
" " and sterilized milk to beef juice and broths 1
" " " " " " sterilized milk and beef juice 2
" " " condensed milk to modified milk 1
" " " " " " raw milk 2
" " " sarcopeptone to fresh milk and beef juice ... 1
Condensed milk to fresh milk and beef juice 1
" " " sterilized milk and diet 1
" " " lactated food and raw milk 1
" " " sterilized milk 1
Malted milk to milk and diet 1
" " " raw milk and beef juice 1
" " and amylaceæ to modified Pasteurized milk and beef juice 1
Sterilized milk to diet and beef juice 1
" " " fresh milk and beef juice 2
" " " raw milk 4
" " " diet 6
" " " raw milk and beef juice 1
" " " sterilized milk and beef juice 1
" " peptonized to raw milk and beef juice. 1

Sterilized milk to Pasteurized milk and diet	1
" " " " "	1
Pasteurized milk to raw milk	2
" " " fresh milk and beef juice	1
" " " sterilized milk and broths	1
Raw milk and amylaceæ	1
Breast milk to peptonized milk and broths	1
" " " sterilized milk	1
Lactated food to raw milk and beef juice	1
Reed & Carnrick's soluble food to modified milk	1
" " " " " " baked potato	1
" " " " " " beef juice	1
Imperial granum to raw milk and beef juice	1
Patented food to diet	1
Ridge's food to diet	1
Diet (poor) to diet (better)	2
Bartlett's pepsinated food to fresh milk	1

It must be noted with regard to this table and those following that the term "modified" milk is used very loosely by the reporters. Occasionally it is specified to be laboratory milk, but much oftener this is not the case, and we are unable to know whether the modification was done at home or not, and whether the milk was heated or not. Presumably it was pasteurized in many instances. Where the term "fresh" milk is employed in the table, we have been unable to learn by additional correspondence whether "raw" milk is meant or whether only a change from proprietary food to cow's milk is intended. The term "diet" as employed in the tables either expresses the fact that a large and varied number of different forms of diet were tried, too complicated to be detailed, or else quotes merely the statement of the writers that a change of diet was made, the original food probably being abandoned entirely unless otherwise stated.

The following table shows the food employed in divisions I., II., III., and IV., in which the diet was the same (except sometimes for the addition of beef juice) while the scurvy was developing and while it was recovering.

Recovery Following with no Change of Diet during Treatment.

I.	Treatment with drugs only	0
II.	Treatment with fruit juice only	3
	Mellin's food (milk sterilized)	1
	Sterilized milk	2
III.	Treatment with beef juice only	2
	Sterilized milk	1
	Raw milk	1
IV.	Treatment with combined beef juice and fruit juice only	6
	Sterilized milk	2
	Sterilized milk and broths	2
	" " " amylaceæ	1
	Table food	1

Division V. contains by far the largest number of cases, 257 in all. The changes in diet employed are much too complicated to be stated fully in the table. Moreover, they are of little value, since the treatment was such a composite one, viz.: change of diet combined with the use of fruit juice in every case, and often of beef juice and of drugs as well. A few of the more striking classes of cases may be selected as follows:

V.—Recovery Following Change of Diet Combined with Fruit Juice, with or without Drugs.

Condensed milk to milk, variously treated	23
Imperial granum to milk, variously treated	7
Lactopræparata to raw milk	2
Lactated food to milk	1
Reed & Carnrick's soluble food to milk, variously treated	3
Malted milk to milk, variously treated	38
Mellin's food to milk, variously treated	21
Mellin's food and condensed milk to milk, variously treated	19
Sterilized milk to fresh (probably always raw) milk	34
Sterilized milk to Pasteurized milk	4
Pasteurized milk to "fresh" or "raw" milk	9
Pasteurized milk to sterilized milk	1
Raw milk to sterilized milk	1
Breast milk to cow's milk, variously treated	6

The conclusions to be drawn from this combined study of etiology and of treatment seem justifiable only to the following extent:

(1) That the development of the disease follows in each case the prolonged employment of some diet unsuitable to the individual child, and that often a change of diet which at first thought would seem to be unsuitable may be followed by prompt recovery.

(2) That in spite of this fact regarding individual cases, the combined report of collected cases makes it probable that in these there were certain forms of diet which were particularly prone to be followed by the development of scurvy. First in point of numbers here are to be mentioned the various proprietary foods.

(3) In fine, that in general the cases reported seem to indicate that the farther a food is removed in character from the natural food of a child the more likely its use is to be followed by the development of scurvy.

Fatal Cases.—Twenty-nine of the 379 patients are reported to have died. In 2 of these, death seems to have been remote from the attack of scurvy. Of the remaining 27 the causes as enumerated by the reporters are as follows:

Exhaustion, 6; cerebral hemorrhage, 3; diarrhœa, 2; bronchitis, 2; vomiting (?), 1; convulsions, 1; pneumonia, 4; malnutrition, 1; pulmonary hemorrhage, 1; ulcer of stomach, 1; syncope and nephritis, 1; doubtful, 4.

It is difficult to determine in how many of these the scurvy itself could be held responsible for the death; probably in few if any.

Autopsies.—There have been handed in to the committee the reports of six autopsies in all, some of them only partial. The salient points of each may be enumerated as follows:

Case of Dr. A. Caillé. Child of nine months, ill about three months. Autopsy showed hemorrhagic spots on the pericardium and surface of the liver; subperiosteal hemorrhage of the long bones.

Case of Dr. L. E. Holt. Child of twelve months; ill for two months. Autopsy showed separation of the lower epiphysis from the shaft of the left femur; extensive subperiosteal hemorrhage of the left femur; subpleural hemorrhages; broncho-pneumonia.

Case of Dr. L. E. Holt. Child of thirteen months; ill about two months. Autopsy showed subperiosteal hemorrhage and separation of the lower epiphysis of the left femur; hemorrhages into the muscles of the left thigh, swellings about the opposite knee and both ankles; knee-joints normal; minute subpleural hemorrhages; well-marked exudative nephritis; minute hemorrhages on the surface of the liver.

Case of W. P. Northrup. (The first autopsy in the United States.) Child of eighteen months; ill about one month. Autopsy showed subperiosteal hemorrhage of both tibiæ and both femora; detachment of lower epiphysis of left femur and maceration of lower end of shaft; broncho-pneumonia of left lung; no rachitic or syphilitic changes on microscopical examination.

Case of Dr. L. Starr. Child thirteen months; ill for three months. Autopsy showed "right leg from knee to ankle stuffed with a puffy mass replacing normal tissue. Separation of both bones one inch above ankle."

Case of Dr. C. W. Townsend. Child of ten months; ill three to four weeks. Autopsy showed bloody serum in pleural cavity; perforating ulcer of the stomach; tuberculous (?) process in peritoneum.

In conclusion the committee would thank publicly their correspondents who have sent their reports of cases. They are also much indebted to Dr. William Schleif, of Philadelphia, for valuable aid in analyzing the circulars received and tabulating the results.

[Signed] J. P. Crozer Griffith, M.D., Philadelphia,
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Committee.

THE ORGANIZATION OF THE SURGICAL PERSONNEL OF AN ARMY DIVISION (TWELVE THOUSAND MEN), AND ITS DUTIES IN TIME OF WAR.

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THERE can be no doubt that the present regulations of the United States army furnish little information in regard to the employment of its surgical personnel in time of war. As to the organization and duties of this personnel under these circumstances, it would seem as if it almost entirely depended upon the personal ideas of the surgeons attached to the various commands. In the United States army regulations of 1895 (those now in use), nothing whatever can be found bearing upon this subject, save possibly two paragraphs.

The paragraphs in question are: Paragraph 1,412, which reads: "There will be in each company four privates designated for instruction as litter bearers, etc.," and paragraph 1,420 which says: "In field service troops will be accompanied by such number of men of the hospital corps as may be determined by the post commander, on the recommendation of the surgeon." Possibly since the present war commenced there may have been some orders or circulars issued in reference to this subject, but, if so, I am unaware of the fact.

The above paragraphs are practically all that can be found in the regulations relative to the employment of the surgical personnel of our army outside the limits of a military garrison, and even these regulations are virtually applicable to the army only on a peace footing. In the armies of all civilized nations, with the exception of our own, the number of the surgical personnel, its organization, and its duties in time of war, are fixed by regulation. Even little Japan has a thoroughly organized and equipped sanitary organization in its army, which proved itself to be of very great value in its war with China. Such orders and regulations are exceedingly essential, as otherwise there would be an entire lack of uniformity in the sanitary organization of an army, and this lack of uniformity would inevitably cause a vast amount of friction and in some cases might even result in serious injury to its sick and wounded. During my service I should have been very much at a loss to reply if, at any time, I had been suddenly asked to state what should be the number of the surgical personnel of an army of twelve thousand men, how should this personnel be organized, and what would be its duties upon the field of battle.

In the battles of the past the surgical personnel of the armies engaged has very frequently found itself entirely inadequate to cope with the emergency of the moment, and, as it has been in the past, it will undoubtedly be in the future; we can only hope to provide for a probable average of casualties of the force engaged. During our civil war the casualties of the Federal forces in battle (not including the missing) averaged about ten per cent.

This average has been obtained by taking the number of killed and wounded in twenty-eight of the principal battles and comparing it with the number of men engaged. Of course there were exceptional cases in which the percentage of casualties was very much greater; for instance, at Murfreesboro the losses were twenty-six per cent., at Gettysburg twenty-three per cent., at Gaines' Mills and Antietam twenty-two per cent. of the Federal forces. It would be utterly impossible for the surgical personnel of any army to care quickly for the necessities of such an immense number of wounded men. The introduction of the small-calibre rifle firing a bullet which has so great a range and such a tremendous initial velocity also unquestionably adds many complications to the problem which the surgical personnel of armies will be required to solve. In addition, the increased range and destructiveness of light-artillery projectiles further complicates this problem, especially so far as the location of dressing-stations and field hospitals is concerned. Dressing-stations must be located at least one thousand yards from the line of battle, and field hospitals fully two thousand yards distant; and even at these distances they will be more or less under fire. This removal of dressing-stations and field hospitals so far from the line of battle tremendously complicates the question of the transportation of the wounded to a place of succor.

It is no trifling matter to carry a wounded man something over half a mile on a hand litter, and it would be unwise to bring ambulances close to the firing-line, as it is exceedingly probable that their draught animals would be disabled before they could be loaded with wounded men. The great military surgical problem of the present day is, how shall wounded men be quickly carried from the line of battle to some point comparatively near at hand where they can receive aid and comfort?

It is to be feared that this is a problem which must remain unsolved, and that in the future, as in the past, wounded men unable to walk will be compelled to stay where they have fallen until the stress of battle is over. In all probability the employment of small-calibre projectiles will also largely increase the number of casualties (fully fifty per cent.), and it is also safe to say that the number of men killed outright will also be greatly increased on account of the marked explosive effect of these projectiles whenever they penetrate a closed cavity, such as the cranium, thorax, or abdomen.

Judging from the few statistics I have been able to obtain in regard to the percentage of killed to "hits," since the introduction of the modern rifle, I am of the opinion that of every ten men struck by modern projectiles three will be instantly killed or will die within a very short time. It may, then, be safely estimated that the casualties of a division of twelve thousand men engaged in battle with a force of nearly the same strength will be about 15 per cent. (1,800), and that 70 per cent. of this number (1,260) will require surgical attention. Of this latter number 85 per cent. (1,071) will require transportation from the line of battle to the ambulance and hospital stations: the remaining 15 per cent. will be able to reach them unassisted.

The problem which now confronts us is the transportation and care of 1,260 injured men, and what should be the number of a surgical personnel capable of accomplishing this task in a reasonable space of time. It must also be considered that a certain percentage of the personnel itself will be rendered *hors du combat* and require attention, so that all estimates must be more or less approximate. From a careful study of the organizations of foreign armies and that of our own during the civil war, I am of the opinion that the surgical personnel of a division containing 12,000 men should be a trifle over 4 per cent., less than this percentage not enabling it to cope successfully with an average number of casualties in battle.

The surgical personnel of a division (12,000 men) should then consist of 61 surgeons and 445 enlisted men, and its ambulance and transport train should consist of 40 ambulances, 16 hospital wagons, 8 medical-supply carts, and 12 pack mules. The surgical personnel of a division thus equipped will be entirely independent of the line so far as the transportation of its sick and wounded, supplies, and equipage are concerned. Assuming that a division will consist of 12 regiments divided into 4 brigades, the regiments and brigades will furnish 40 surgeons; and if we add to

this number the chief surgeon of the division we shall have 41 surgeons furnished by the command itself. To this number should be added 20 surgeons (non-regimental), who will be attached to the ambulance and hospital companies of the division. This will be at the rate of about one surgeon to every 200 men of the command, and the whole force may thus be tabulated: Division surgeon, 1; brigade surgeons, 4; regimental surgeons, 36; hospital staff surgeons, 20; total, 61. The 449 non-commissioned officers and privates of the hospital corps will be divided as follows: Two ambulance companies, each consisting of 6 hospital sergeants, 6 corporals, and 54 privates, with staff surgeon in command aided by 3 subordinates; 2 hospital companies, each consisting of 6 staff surgeons, 8 hospital sergeants, 4 corporals, and 52 privates; 73 hospital orderlies, one to each surgeon, with the exception of the junior surgeon of each regiment, who will have two to accompany him on the line of battle to give first aid, and these orderlies, with the exception of those attached to the hospital staff surgeons, will always march and mess with the regiments to which they are attached; 112 drivers (ambulance, medical-supply cart, pack mule). The whole commissioned, non-commissioned force and privates may be thus tabulated: Division surgeon, 1; brigade surgeons, 4; regimental surgeons, 36; hospital staff surgeons, 20; division orderly, 1; brigade orderlies, 4; regimental orderlies, 48; hospital staff orderlies, 20; two ambulance companies, 132; two hospital companies, 128; drivers of transportation, 112; total, 506.

In this hypothetical scheme for the organization of the surgical personnel of a division of 12,000 men, it is to be understood that on the march and in action each ambulance and hospital company will be divided into two sections, each under the command of a staff surgeon, an ambulance and a hospital section marching behind each brigade (assuming 4 brigades to the division), followed by 10 ambulances and 2 medical supply carts. The hospital wagons will follow directly in rear of the division; the 12 pack mules, one to each regiment, will be led directly behind the regiments to which they belong. During an engagement this scheme of organization contemplates that there shall be 12 regimental first-aid stations, 4 ambulance stations, and 4 hospital stations located as follows: Regimental stations will be placed as closely as practicable to the line of battle of each regiment, and the two junior surgeons of each regiment with their three orderlies will there take post, to which point the pack mules, each laden with a medical and surgical pannier, will be led. The points for the regimental aid stations will be selected by the brigade surgeons; for the ambulance and hospital stations by the chief surgeon of the division. The 4 ambulance stations, unless the terrain is particularly favorable, will be placed at least 1,000 yards to the rear of the line of battle, and the hospital stations at least 2,000 yards distant. The situation of the various stations determined, the brigade and senior regimental surgeons will take post at the ambulance stations of their respective brigades, at each of which the respective section of the ambulance company, followed by 10 ambulances and a medical-supply cart, will also take station.

As each section of an ambulance company consists of 2 surgeons and 35 men, there will be at every ambulance station 6 surgeons and 62 non-commissioned officers and men, here including brigade and regimental surgeons, ambulance and cart drivers, ambulance attendants, and orderlies. Each section of a hospital company, followed by 4 wagons and 1 medical-supply cart, will take station at the point designated for the hospital station of the brigade to which it is attached in action.

As each section of a hospital company consists of 3 surgeons and 32 enlisted men, by adding to this number the wagon and cart drivers we shall have at each hospital station 3 surgeons and 40 enlisted men. Officers of the hospital staff in charge of the ambulance companies will return to the hospital stations when their services are not required at the ambulance stations.

A statement of the functions of the surgical personnel and of its duties on the battlefield has virtually been made in stating the positions of its various components during action. The surgeons and hospital orderlies at regimental aid stations do everything practicable under the circumstances to aid the wounded; putting on tourniquets, compresses, etc. The duties of the ambulance company section at each ambulance station will be to collect the wounded and transport them to the ambulance stations on litters, where they will further be cared for and loaded into ambulances to carry them to their respective hospital stations, where all operations will be performed except those absolutely essential to prevent pain and further injury during transportation; for instance, the application of temporary dressings and splints, the administration of hypodermatic injections, etc.

At each field-hospital station, before the wounded begin to arrive, tents will have been pitched, surgical and medical chests opened, operating-tables set up, and the cooks will be preparing beef tea, hot coffee, milk, etc. As the object of this article has not been to define the duties of a sanitary organization on the field of battle except in a very general way, nothing further will be said in regard to this portion of the subject.

It will have been observed that nothing has been said in reference to the treatment of the sick and wounded of the division at other times than when actually engaged; that is, when in camp. I am of the opinion that the whole surgical personnel and equipment of the division should be concentrated in one large field hospital, with the exception of the brigade and regimental surgeons and orderlies, who remain with their regiments, and that all sick and injured men should be ordered to this hospital for treatment, except men having trifling ailments which do not incapacitate them for all duty. These men should be treated by their regimental surgeons. It will thus be seen that regimental and brigade hospitals will not be required. Each regiment will have its medical and surgical pannier carried by a pack mule, and these supplies will be amply sufficient. If a brigade or regiment is detailed for duty separately from the division to which it belongs, it should then be accompanied by a proportionate detail of the surgical personnel, ambulances, etc. It will then not be dependent upon any command to which it may chance to be attached for the care of its sick and wounded, as its surgical personnel will form part of the general surgical personnel of the command to which it then belongs.

It will probably also have been observed that nothing has been said in this article relative to the utilization of the four company bearers now prescribed by regulations for each company. I am of the opinion that they cannot be taken into consideration or relied upon in the slightest degree to render any assistance during an action. No company commander will wish to deplete his ranks while under fire, and even if he should permit his company bearers to fall out in order to carry the wounded off the field, it is altogether unlikely that they would return to the fighting-line and the company would be short four combatants and also minus its company bearers. If I am correct in my opinions in regard to the proper organization of the surgical personnel of a division, whatever

may be the size of an army, the number of its surgical personnel and the organization of this personnel can readily be determined; it is simply a question of multiplication or division.

A CASE OF PROGRESSIVE MUSCULAR DYSTROPHY (LANDOUZY-DEJERINE TYPE), WITH MICROSCOPICAL EXAMINATION OF THE STERNO-CLEIDO-MASTOID MUSCLE.[1]

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(From the William Pepper Laboratory of Clinical Medicine.)

ERB has classed the various forms of primary myopathy, the pseudo-hypertrophic, the juvenile of Erb,[2] the hereditary of Leyden and Möbius, and the infantile of Duchenne, of Boulogne, Landouzy and Dejerine, under the name of dystrophia muscularis progressiva—for clinically and pathologically they are one disease, with a preponderance of the lesions in different parts of the body. The pseudo-hypertrophic is a well-known form, and I need not speak of the large calves, the lordosis, the peculiar method of rising from the floor, etc. The hereditary form of Leyden and Möbius has never been distinctly separated from the other types.

Duchenne, of Boulogne, described a disease under the name of progressive muscular atrophy of childhood, which, until the time of Landouzy and Dejerine,[3] was regarded as very similar to the spinal progressive muscular atrophy of the adult. Our knowledge of the real nature of the facial (infantile) type of muscular dystrophy is due to the studies of the last two authors. In this form the facial muscles are usually involved early, and the disease begins in the first years of childhood. The orbicularis oris and orbicularis palpebrarum are wasted, and often the "tapir mouth" is seen; the child cannot whistle and a peculiar rigidity of the facial muscles is noted when the mouth is opened. The face is usually smooth, the forehead appears as if polished, the eyelids cannot be fully closed, the cheeks are atrophied, the lips are prominent, and the *facies myopathique* is so characteristic that the disease can be recognized at once. The expression of the face in laughter is most striking; the patient has the *rire en travers*—the transverse laugh; the mouth is opened laterally, but the corners are not drawn upward.

Other muscles may be affected simultaneously with the facial muscles, or later. Those especially liable to atrophy are the shoulder, arm, dorsal extensor, pelvic, and thigh muscles (Strümpell[4]). A contracture of the biceps is not uncommon. Fibrillary twitching and reaction of degeneration are rare. According to Landouzy and Dejerine, the supraspinatus and infraspinatus, the subscapularis, and the flexors of the hands and fingers usually remain intact indefinitely. Quantitative, but not qualitative, changes are noted in the electrical reactions.

In the juvenile form the muscles of the shoulders and arms are especially affected.

Two brothers of the boy I am able to present to you through the kindness of Prof. W. W. Keen, are fifteen and twenty-seven years of age respectively, and are large and apparently very muscular—almost suspiciously so, in view of the disease prevailing in the family. The only sister has very large calves: indeed, they are so large that people in the street remarked on their appearance, and she put on long dresses at an early age to escape attention. The upper extremities are small. The girl had contracture of the left sterno-cleido-mastoid muscle, but operation when she was about five years old removed the deformity, and the movements of the head are now normal. This case, therefore, presents certain features of the pseudo-hypertrophic form, with contracture of the sterno-cleido-mastoid muscle.

E. H——, a brother of the girl just described, seventeen years old, has always been weak. He had two or three severe falls when about a year old, and at this age his parents noticed that the neck was not straight and that the head was drawn to the right and downward. The torticollis, due to contracture of the right sterno-cleido-mastoid muscle, increased, and six or seven years ago became very marked. He has always had difficulty in walking, on account of muscular weakness, although he began to walk when about fourteen months old—at a later date than the other children. He has always been more feeble in the left leg than in the right. When he was four years old his mother was told by physicians that the boy was weak in all the muscles of the body. Until about four years ago he walked to school twice daily and twice home again, a distance of five or six blocks: but about four years ago he found that he became more easily tired and was unable to walk to school more than once a day.

FIG. 1.—The *Rire en Travers*. Position of the head after the sterno-cleido-mastoid was cut.

The present examination shows that the muscular atrophy is almost universal. The *facies myopathique* is well marked in the lower half of the face. When the boy laughs the *rire en travers*, described by Landouzy and Dejerine, is very evident. The corners of the mouth are drawn outward but not upward, and the muscles appear quite rigid, as though difficulty was experienced in contracting the facial muscles. The power of whistling is very limited. The lower part of the face is much wasted and the forehead is quite smooth, but the orbicularis palpebrarum contracts with normal force on each side. The shoulders, upper

[1] The clinical portion of this paper was read before the Section on General Medicine of the College of Physicians of Philadelphia, and the pathological report before the Pathological Society of Philadelphia.

[2] Erb: Deutsche Zeitschrift für Nervenheilkunde, vol. i.

[3] Landouzy and Dejerine: "De la Myopathie Atrophique Progressive," Revue de Médecine, 1885.

[4] Strümpell: "Specielle Pathologie und Therapie," vol. iii.

extremities, trunk, buttocks, and lower extremities are all much wasted. Lordosis is not present, but distinct scoliosis is seen. The muscles of the back are not affected to the degree frequently noticed in progressive muscular dystrophy. The boy does not climb upon himself in rising from the floor, on account of the comparatively good preservation of the dorsal muscles. He rises as any normal person would do. All movements are possible and proportionate to the preservation of the muscles. The only contractures observed have been in the right sterno-cleido-mastoid and the muscles of the left calf. The hands and feet are proportionally much better preserved than other parts of the extremities, but some atrophy of the interossei of the hands is evident. Fibrillary contractions or evidences of muscular hypertrophy are not noticed anywhere.

The boy stands firmly on the right foot, but the left heel is kept elevated and only the toes and ball of the left foot are placed on the ground. In walking he limps greatly and presents the gait described by the French as the "duck walk" (*marche du canard*). Each upper limb in the middle of the arm measures 16.5 cm., and in the middle of the forearm 17.5 cm. The diameter of the chest at the nipple line is 73 cm. The right thigh in its middle portion measures 31.5 cm.; the left, 30.5 cm. The right calf in its largest portion measures 26 cm.; the left, 25.5 cm.

Fig. 2.—The position of the left lower limb resembles that seen in hip-joint dislocation.

In November, 1897, the right sterno-cleido-mastoid muscle was cut by Dr. Keen, and two centimetres of tissue were removed. At first cicatricial contraction impaired the movements of the head, but by massage the head has been straightened, and the movement is now good to the left, though somewhat hindered toward the right.

The electrical examination by Dr. J. W. McConnell showed that all the muscles of the upper extremities tested responded promptly and normally to the galvanic current. These are the biceps, triceps, brachialis anticus, supinator longus, extensors of hand and fingers, flexors of hand and fingers, and the interossei muscles.

The muscles of the lower extremities examined gave similar results. These are the tibialis anticus, extensor longus pollicis, peronei, quadriceps extensor, and the vastus internus.

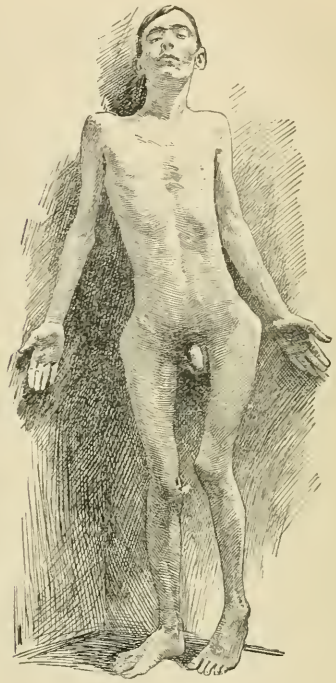

Fig. 3. The same as shown in Fig. 2.

The knee jerks are prompt but not exaggerated. The scapulæ are prominent, but the wasting in the muscles of the scapular region is not excessive, for the shoulders do not rise when the patient is lifted from the axillæ, as is not infrequently the case in the juvenile type of muscular dystrophy.

The possibility of dislocation at the left hip-joint required careful study, for at first sight one might easily have been deceived. Dr. Keen has given me the following statement: "Dr. William J. Taylor and I decided, first, that there is no typical dislocation, either iliac or otherwise. Secondly, that there is an abnormal position of the head of the bone in the left lower limb, especially when the toes are strongly rotated inward. It is as if the head of the bone was lifted out of its socket posteriorly, and I should not wonder if it were the initial stage of what hereafter will become an iliac dislocation from relaxation of the ligaments. Thirdly, that both femurs, but especially the left, are markedly rotated inwardly; when the feet are so placed that their axes are antero-posterior and parallel, both patellæ are directed inwardly. The boy tells me that he never remembers the time when his legs were not crooked, but that for the last eight or nine years they have been growing markedly worse. There is one to two centimetres' difference in the length of the lower limbs."

This condition of the left lower limb is probably

due directly to the muscular dystrophy, and the shortening seems to indicate that the bones are also affected. Very little study has been devoted to the condition of the bones in this disease, but it is reasonable to suppose that the osseous tissue is affected as well as the muscular and connective tissues. A process which causes atrophy and arrest in the development of muscles, beginning in early life, probably involves the bones as well.

Progressive muscular dystrophy seems to be a disease largely independent of the nervous system, so far as our methods of examination permit us to judge. Lesions have been found in the central nervous system in comparatively few cases. The writer has been unable to find changes in the cells of the spinal cord sufficient to explain the atrophy, in two cases of intense muscular dystrophy given to him for study by Professor Dejerine. The motor cells may possibly be less numerous, but a statement of this kind is always of very limited value, inasmuch as we have no standard of the normal number of cells. In one of these cases I was able to study the muscles.[1] It was difficult to find muscular fibres in the portions examined, as connective tissue had replaced the normal elements, and yet the small intramuscular nerve bundles and the neuro-muscular spindles were apparently perfectly normal. One of these cases had been studied clinically by Duchenne, of Boulogne.

We may recall the fact that Oppenheim and Cassirer[2] reported a case of progressive neurotic muscular atrophy, which, it is surprising to state, proved by the microscopical examination to be one of progressive muscular dystrophy.

It is impossible to understand why the nervous system is not involved in this disease, for we know well that lesions of the cells of the anterior horns produce muscular wasting early. It may be, as Erb[3] suggests, that cellular changes are present which cannot be detected. In the two cases given to me by Professor Dejerine the method of Nissl could not be employed, and I cannot deny the existence of lesions detectable by this method. At the same time we have a right to expect to find cellular changes by the carmine stain in such a chronic process, if the cause is spinal.

The muscles in the fully developed human being are certainly very closely connected with the motor nerves, and yet v. Leonowa[4] and Karl and Gustaf Petrén[5] have shown that where the spinal cord and peripheral motor fibres fail to develop in the human fœtus the muscles may be normal. This is a most extraordinary fact. The explanation which these writers give is that the motor nerves do not exert an influence on the growth of the muscles at the earliest periods of development, but do so later in life.

It seems to me that the diagnosis of progressive muscular dystrophy in this case, E. H——, may be regarded as correct. The absence of reaction of degeneration, the greater involvement of the proximal portions of the limbs, the involvement of the face (for Landouzy and Dejerine[6] say that facial atrophy in a person with general muscular atrophy, and with no symptoms of bulbar paralysis, points positively to progressive muscular dystrophy), the absence of fibrillary contractions, the preservation of the knee jerks and of sensation, the slow progress of the disease, the age of the patient, the presence of another type of muscular dystrophy in another member of the same family, the contractures of certain muscles, and the microscopical examination of the sterno-cleido-mastoid muscle to be described, make this almost a typical case of progressive muscular dystrophy of the Landouzy-Dejerine type.

The paper by Hoffmann[1] shows us how closely the myopathic forms of muscular atrophy may be simulated by the spinal, and cases of hereditary infantile bulbar paralysis are on record, and yet Hoffmann acknowledges that most cases of progressive muscular dystrophy have been shown to be without involvement of the nervous system.

The removal of the torticollis in two cases of progressive idiopathic muscular atrophy by surgical interference is a fact worthy of note.

We must, until further investigations give us reason to think otherwise, acknowledge that idiopathic muscular atrophy exists—idiopathic in the sense that the pathological changes are found only in the muscles, and that the nervous system is normal. We must separate clearly the progressive muscular dystrophy from the spinal progressive muscular atrophy, in which the wasting is due to degeneration of the cells in the anterior horns; but we must acknowledge that transitional cases also are found. It has been denied that destruction of the cells of the anterior horns occurs without involvement of the lateral motor tracts. This statement is not founded on fact. Dejerine[2] has reported two cases of atrophy of the cells of the anterior horns without degeneration of the motor tracts, and has permitted the writer to examine these specimens. Chronic anterior poliomyelitis is rare, exceedingly rare, but it does occur and may exist for years without involvement of the pyramidal tracts. Destruction of the cells of the anterior horns does not necessarily mean destruction of the central motor tracts. We may refer for further information on this subject to the thesis of J. B. Charcot,[3] to the paper by Nonne,[4] and to other communications.

The examination of the fragments of muscle removed in the case E. H—— revealed most interesting lesions. Erb[5] describes anomalies found in the muscles in cases of progressive muscular dystrophy. He found some of the muscular fibres hypertrophied and some atrophied; the muscular fibres in transverse sections were rounded and had lost their sharp angles, and some were perfectly circular. The nuclei of the muscular fibres were much more numerous, and some were situated centrally within the fibres. He found long chains of muscular nuclei, as many as twenty or forty in some fibres. He spoke of longitudinal segmentation of the muscular fibres, of such a character that one fibre formed two or three separate parts at one of its ends. He observed vacuolation of the muscular fibres, increase of connective tissue, accumulations of connective-tissue nuclei, and much lipomatous tissue. Erb believed that the multiplication of the muscular nuclei and the segmentation of the muscular fibres indicate excessive nutrition.

These changes which Erb found in progressive muscular dystrophy have been seen about tumors situated within muscles (Schäffer), and in regenerating muscles after injuries, burns, etc. (Nauwerck). Hitzig has found all these anomalies of the muscles in infantile spinal paralysis (cited by Erb).

The distinctions which have been sharply drawn

[1] Spiller: The Journal of Nervous and Mental Disease, 1897, p. 626.

[2] Oppenheim and Cassirer: Deutsche Zeitschrift für Nervenheilkunde, vol. x.

[3] *Loc. cit.*

[4] v. Leonowa: Neurologisches Centralblatt, 12, pp. 218 and 263, 1893.

[5] Karl and Gustaf Petrén: Virchow's Archiv, vol. cli., No. 3.

[6] *Loc. cit.*

[1] Hoffmann: Deutsche Zeitschrift für Nervenheilkunde, vol. x., p. 292.

[2] Dejerine: Comptes Rendus de la Société de Biologie, 1895, p. 188.

[3] J. B. Charcôt: "Contribution à l'Étude de l'Atrophie Musculaire Progressive; Type, Duchenne-Aran." Thèse de Paris, 1895. Review in Revue Neurologique, 1895, p. 502.

[4] Nonne: Berliner klinische Wochenschrift, 1896, p. 207.

[5] *Loc. cit.*

between "degenerative" and "simple" muscular atrophy are not reliable, as has been so well demonstrated by Hoffmann[1] and others. The histological investigation of the muscles, as shown by these writers, cannot determine the spinal or myopathic nature of the atrophy.

In the case E. H——, I have found considerable increase of the connective tissue. The muscular fibres in some places are much fewer than is normal, and

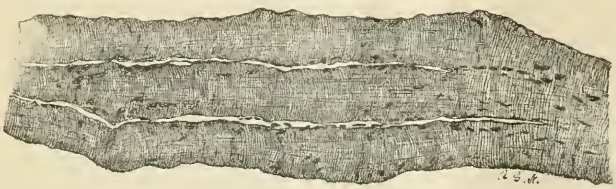

Fig. 4. Longitudinal Segmentation of a Muscle Fibre.

are circular in transverse sections; they contain many nuclei, and some also many centrally located nuclei, each surrounded by a clear space. Some of the muscular fibres are distinctly forked in longitudinal section, so as to terminate in two or three distinct fibres, each transversely and longitudinally striated, and containing nuclei. Other muscular fibres in transverse sections may be found divided into two to five distinct divisions. Long chains of rectangular nuclei are found in longitudinal fibres, and sometimes two or three chains are present within a fibre. These nuclei are shorter than most muscular nuclei; are arranged at equal distance from one another, frequently with their long axes pointing in the direction of the fibre; and may number twenty or more in a fibre. The appearance presented by these long chains is most striking. Some of the fibres have undergone hyaline degeneration.

The situation of nuclei within the centre of the muscular fibre is abnormal. Koelliker[2] says that the round or elongated nuclei in man, except in the heart muscle, are situated on the inner surface of the sarcolemma. Golgi (quoted by Morpurgo and Bindi) observed nuclei within the muscular fibres in adult man, but he regarded them as very different from the sarco-

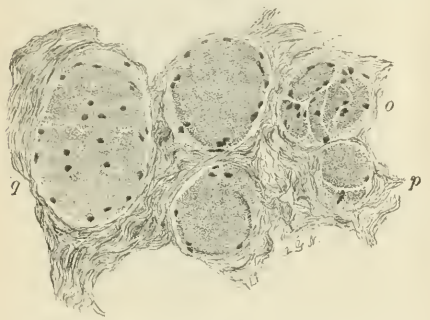

Fig. 6.—The muscle fibres are rounded in transverse section. At q a number of centrally located nuclei are seen. At o is a muscle fibre which has separated into five parts, and at p one which has separated into two parts. The connective tissue is increased in amount.

lemma nuclei. They were especially numerous near the tendons, while rare in the remainder of the muscular substance.

Dejerine and Sottas[3] observed centrally situated muscular nuclei, as well as the long nuclear chains, within the fibres in the only case of Thomsen's disease which has ever been examined post mortem. The writer has been allowed the privilege of examining these sections also.

Morpurgo and Bindi[1] have studied the muscles of an eight months' human fœtus and of adult man. The muscular fibres are of more equal size and smaller in the fœtus, and the number of nuclei in the different fibres is nearly the same. In adult human muscles of fine calibre (the external muscles of the eyeballs, the zygomaticus major), the nuclei in the smaller fibres are about as numerous as in the fibres of the same calibre in the fœtus, but as the fibres are longer the total number of nuclei in each fibre must also be greater.

The smaller the fibre the thicker are the nuclei, and the latter becomes less numerous with the growth of the muscular fibre. In hypertrophy due to activity the small fibres grow more rapidly than the larger, and their relative excess of nuclei is indicative of reserved growth force.

It may be, therefore, that the many nuclei found within the muscular fibres in the case E. H—— are indicative of the possibilities of growth of the muscle, though the anomalies are clearly those described by

Fig. —Chain of Nuclei within a Muscle Fibre.

Erb as existing in progressive muscular dystrophy, and the disease is a degenerative one.

It would be unjustifiable to regard these findings as pathognomonic of primary muscular atrophy; indeed, Erb himself, as already stated, by no means excludes all functional involvement of the spinal cord in this disease.

The investigations of Müller, Schultze, and especially of Dejerine have shown that hypertrophy of individual muscular fibres cannot be regarded as pathognomonic of idiopathic muscular atrophy, although at one time this view was quite generally held; and the studies of Hitzig, already mentioned, in which all of Erb's findings in muscular dystrophy are described by Hitzig as existing in infantile spinal paralysis, would warn us against making a similar mistake.

The existence of these remarkable findings in the muscles from a case of congenital or early arrest of muscular development attended with atrophy does not justify us, according to Erb, in assuming that the nervous system is not involved in such arrest. It is true that they are not seen after experimental section of nerve fibres, or after total destruction of the spinal trophic centres. In these cases hypertrophy of the fibres, vacuolation, segmentation, etc., are absent (Erb). Destruction of certain nerve cells in the anterior horns of the cord in anterior poliomyelitis may lead to alteration of nutrition in the muscles, and secondarily to the production of the muscular changes described (Hitzig, Erb); and partial congenital arrest in the development of the spinal cord could in this way be the cause of the condition of the muscles in congenital or early infantile progressive muscular dystrophy.

[1] *Loc. cit.*

[2] Koelliker: "Handbuch der Gewebelehre des Menschen," vol. i., p. 140.

[3] Dejerine and Sottas: Revue de Médecine, 1895.

[1] Morpurgo and Bindi: Virchow's Archiv, vol. cli., No. 2.

STATE MEDICINE.[1]

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STATE or public medicine is a comparatively new ramification of the science of medicine. It is a product of the last half-century and the outgrowth of several of the existing conditions of that period: First, the high plane of civilization; second, the constant and rapid advances in the science of the control of disease by sanitation and the application of new discoveries in the prevention and treatment of disease; and third, the necessity which has developed for the enactment of laws to obtain for the masses the benefits of this advanced science and civilization, and to minimize the evils which must unfortunately attend every progressive movement. The demand for legal regulation and governmental institutions of control increases in proportion to the progress of scientific knowledge and the complexity of social organization. Individuals and classes alike must be protected, restricted, and directed, as the occasion demands, by a supreme authority. Hence the demand for medical legislation.

The science of medicine, on account of its numerous branches and direct bearings upon the masses, is being subjected more and more to legal control, particularly those subdivisions which come under the head of public medicine. The more important of these subdivisions are the boards of health, State and municipal; State control of the insane; the regulation of maritime quarantine, national and State; and the State regulation of the practice of medicine. Under these heads come the control of water supplies of cities and towns, garbage and sewage disposal, drainage, sanitary plumbing, quarantine of contagious diseases, fumigation, regulation of the manufacture and sale of animal serums, registration of vital statistics, inspection of milk and food stuffs, inspection of dairies and cattle, and many other details too numerous to name.

As early as the twelfth century there was inaugurated a system of detention of vessels in Venice, as a result of the great commercial losses attending the frequent epidemics. Then commercial interests always dominated. To-day, humanitarian interests are as influential as the commercial. In fact, we may truthfully say that the humanitarian interests predominate. At the present time in the general discussion following a serious epidemic, the attending financial losses receive weighty consideration, but the great question is: "How can a recurrence of this suffering and loss of life be prevented?" And what has brought about this change? Primarily, the development of the finer instincts of human nature, with a higher regard for life and accompanying the march of civilization a horror of human suffering; and secondarily, the fact that the new science of preventive medicine has furnished the means by which thousands of lives may be saved and a large amount of suffering averted.

State medicine began in England in the forties, when the first laws were made and English sanitary control commenced. About the same time, in 1849, the initial move was made in the United States in Massachusetts; and in 1869, twenty years later, this State established her first health board. Louisiana, however, has the honor of having created, in 1865, the first State board of health in the United States. At present there are thirty-nine State health boards, and thousands of city, village, and town boards. This shows how rapid has been the movement. In no other branch of the science of medicine has the impetus been so great, and to quote Dr. Gihon: "The ascendency of hygiene has greatened and glorified medicine without dimming the lustre of any other branch."

[1] Read before the Albany County Medical Society, April 13, 1898.

Bacteriology and chemistry have followed closely, and in themselves been the chief factors in promoting the practical side of preventive medicine.

Few can appreciate the magnitude to which this science has grown in its brief existence. The details of its workings are manifold, and it has reached that point where one man cannot grasp the entire science but must confine himself to one field; as a result he becomes an expert, and the character of his work raises the scientific standard of his section and of the science as a whole. Public medicine is based on the studies of hydrology, physical geography, balneology, meteorology, bacteriology, chemistry, pestilential diseases, and prophylactic, sanitary, and legal medicine. It would be folly for one man to attempt to master all, quite as much so as for him to attempt to become an expert in every section of medicine as applied in private practice.

In consequence of the rapid progress of this science one great result has been attained, especially in the United States, in the production of the general feeling of confidence in the marine quarantine service. Epidemics of diseases which are not indigenous have little chance of entrance under ordinary circumstances, and when an invasion does rarely occur it is still more rare that the culpability can be placed at the door of science. The city of New York is, I believe, the best-protected seaport city in the world against foreign infection. The gate of ingress is guarded with every possible precaution; by inspection of ships' passengers and merchandise, by fumigation and isolation when necessary, and by many other processes, all constituting a formidable barrier. Public sanitation, as it is operated by the State and municipal boards of health, constitutes a power second only to police power; and under certain conditions its authority is supreme, as in threatened or prevailing epidemics. A glimpse of its possible eventual authority is given in a short sentence in a paper read by Dr. Gihon at the first meeting of the Pan-American Medical Congress in 1893: "The sanitary inspector is destined to become the most important agent of future civic administration." These boards formulate the plans of all sewage systems, the perfection of which is so necessary to insure healthful surroundings; order the abatement of public nuisances, such as objectionable slaughter houses and miasmatic swamps; require cleanliness of public vehicles, proper sanitation and ventilation of public buildings; inspect plumbing; isolate the sufferers from contagious diseases; investigate the causes and assume the management of epidemics; and inspect school children. These duties with others which I have named are exacted of the departments of public health. Their statistical reports on the mortality rates in different diseases in various localities are complete and of the greatest value, throwing light on the vulnerable points in the organized and constant crusade against disease, and showing the gains or losses in the field of action.

Through the medium of the State and its authority, the practice of medicine has been brought to a high standard of excellence. Within nine years the educational requirements necessary to carry on, first, the study and then the practice of the science in this State have been gradually advanced, until our standard is equal to that of any State in the union and to that of many foreign countries.

This brings us to the consideration of the relations of physicians and corporate bodies of physicians and the science which they represent to the law makers. It is needless to say that within the past few years the influence of legislative enactments upon the medical world has gradually increased; for the reason, as I have said, that laws are necessary to regulate the complications which are bound to arise when a science such as medicine is a factor in the relations of the

masses to the civic administration. New complications arise year after year, requiring new laws to meet them. Now the quesiton follows: Whose judgment should be paramount in the drafting and making of these laws—the law-maker's, who, as a rule, cannot appreciate the workings of a medical law; or the physician's, whose work gives him the only practical knowledge of the effects of such a law? Unquestionably you will say the judgment of the scientist should prevail, or at least have weight in the making of laws which he, in many cases, must execute. And, again, when the laws are such that they indicate direct lines for him to walk in, within his vocation, his voice should be heard and his opinions respected.

There is no science, art, or calling which is so subjected to the invasions of pestering, malignant charlatanisms and fanaticisms as the science of medicine in its practical application. Moral sense and common sense, exercised separately or together, keep down to a degree the practices of such sophistries and deceptions as clairvoyance, mind healing, and faith cure; but it is surprising that so much ignorance and blind credulity can exist at this period. But when chicanery or malpractice imperil life, then the criminal law steps in and punishes. Some will say that every man is a free agent, as far as his own vital spark is concerned, and, if he cares to, he can sacrifice his own life or even that of a member of his family to his beliefs; but the physician is too much of a humanitarian to see life thus played fast and loose with. It is against the law and instincts of his profession; therefore he invokes the law to aid him and to punish the offender and the law responds. Thus fanaticism is held in check to a certain degree, and, indeed, about all that it is possible to do against this evil is now being done.

However, these are not the invasions which reflect upon the dignity and power of the profession; but the travelling hawkers, the quacks, the healers by manipulation, by peculiar methods, and by the laying on of hands, do reflect, and, though they are unworthy of the notice of scientific physicians, must be suppressed to protect the dignity of the profession and the interests of the people. This is done, in some cases by the interception of bills legalizing such practices, and in others by the enactment of laws controlling them.

We have yet to refer to the more vital questions and problems of the hour in which law and medicine are intimately connected: the further improvement of our national public-health system; the antivivisection movement; the placing of the medical expert system in a less ridiculous light; the midwifery evil; the dispensary abuse and other abuses equally important.

The criticism has been made by law-makers that they are unable to ascertain the opinions of practising physicians upon measures in progress of legislation which, if enacted into laws, would affect these same physicians in a decided and often unwelcome manner. The rally against a vicious measure is no greater than that against a good one, and it is the exception, not the rule, that the views of the profession are known on a proposed medical law. Some one has said that every physician should be a politician; this is questionable. But I do believe that every physician should have opinions upon vital questions of the day and express them at the proper time and in the proper place. Now, nearly every physician is a member of some representative corporate body of physicians, the resolutions of which, bearing on matters pertaining to public medicine, would have weight with and are sought by the makers of laws. It is the duty of every such body to pass resolutions of this character, through a committee or not, as it pleases, indicating its judgment and opinion. Otherwise, how is the legislator to know what the physician wants or does not want, or what is going to do the science or practice of medicine good, or what evil? Every physician could have his opinion expressed either in the majority or in the minority report of his society, as he might choose. I regret to say that the smaller societies in this State are dilatory in performing their duties in this direction. Time and again committees from the larger societies have called for the opinions of the smaller ones upon different questions at issue, and met with no response whatever. Lawyers and public men have said that the members of a body of physicians cannot agree upon anything; that they are constantly wrangling with each other, and it is never positively known how that body stands on a question, scientific or public. That is putting it pretty strongly, perhaps, but there is some truth in it, and we regret that many times this condition of affairs places the profession in a ridiculous light. The remedy to me seems simple, yet I may be too sanguine. The members of every body of men usually differ in their opinions on important questions. Physicians, like other men, sometimes have divergent opinions, but the majority rules in everything, and, no matter how bitter a discussion may be, the report of the majority shows the opinion of the greatest number. Laws are made by a majority of votes; unanimity is not necessary. Why cannot questions be settled in medical societies in like manner? I have not considered the fact that it is the obligation of every representative medical society to the civic administration to use its influence in and make known its opinions upon matters pertaining to public medicine. The inertia and silence of medical societies concerning questions relating to public health, hygiene, local or general medical laws, have led to some remarkably outspoken editorials in the medical press, roundly assailing the inactivity. Many physicians will say that they have not the time or inclination to devote themselves to public questions. That is not asked of them; but I venture to say that every physician has his opinions upon public medical questions. All that is asked of him is that he make known his views through the medium of his society; that those whose inclinations lead them into the active field may know his views and have his support. Some one must do the active work, bring to bear upon medical legislation the judgment of the physicians, and that one is at least entitled to a knowledge of the opinions and wants of those whom he represents and for whom he is working.

This is somewhat of a digression, however, and I will return to the specific problems of the day. There are two of a national character which are of great importance—the antivivisection movement and the reorganization of the national public-health system, or more correctly, perhaps, the organization of a national public-health board.

For the past two years there has been a movement on foot, represented by a bill in Congress, applying to the District of Columbia alone, designed to embarrass and obstruct scientific experiments upon living animals. The instigators and promoters of this movement are either faddists or people who have erroneous and distorted impressions of the methods of scientific research of this character, and who do not realize that if their ideas were made laws it would render almost impossible the future discovery of means to prevent and control virulent diseases. Scientific workers are now making a strong fight against the measure, and every physician in the country should participate.

The recent yellow-fever epidemic in the South reopened with vigor the question of national public-health control and there are now two bills in Congress relative thereto; one, called the Caffery bill, amplifying the present Marine Hospital system, and the other, known as the Spooner bill, creating a national depart-

ment of health, with a commissioner of health. Some of the principal medical societies and journals in the United States have declared themselves in favor of one or the other, and the discussion is general and spirited. Notwithstanding this division, it is a matter only of a few years when a public-health system, national in character and with supreme authority, will be established. Germany is at present considering the creation of a State department of medicine under a responsible minister.

The other problems mentioned have a local significance—those which we have to meet in our own State. The most important perhaps is the medical-expert question; following closely is the dispensary-abuse problem, then comes the midwifery evil. All of these are comparatively new to us, and subjects for exhaustive discussions in our medical societies. These questions came up before the recent legislature in the form of bills. They will come up again next year. In the mean time it is the duty of the physicians to form opinions upon them, and express them in their several societies in the form of resolutions, that the law-makers may not be at sea in the future as they have been in the past.

During the fifty-eight working days of the last legislature of the State of New York, one hundred and thirty-two bills relating to public medicine were introduced, an average of more than two a day. This shows to a degree the amount of annual legislation relating to one of the youngest branches of the science of medicine—a condition which exists not alone in New York State but throughout the United States, and in every advanced civilized country in the world. And the end is not yet. The constantly growing power and necessity of organized public medicine will eventually make it a public function of the executive department of every national government. Disraeli's comment on Gladstone's alleged indifference to sanitary legislation was that "the first consideration of a minister should be the health of the people." The minister or secretary of public health will occupy a position equal in power and importance to the head of any other department in every advanced country in the world. Such a time will come within the lives of most of us. So much for a science but half a century old.

1 South Hawk Street.

APOMORPHINE AND ITS USES.

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No doubt many of my readers will be surprised that I undertake to write an article on apomorphine, an alkaloid unknown to many, and rarely ever used by the medical profession. It is for this reason, as well as because of its many beneficial effects upon the human system, that I desire to bring the true merits of this very important drug before the public. Apomorphine hydrochlorate, the preparation in use, is an artificial alkaloid, prepared from either morphine or codeine. Its chemical formula is $C_{17}H_{17}NO_2$, according to the reaction:

$$\underset{\text{Morphine}}{C_{17}H_{19}NO_3} - H_2O = \underset{\text{Apomorphine}}{C_{17}H_{17}NO_2}$$

It should be kept in small, dark amber-colored vials.

The books state that apomorphine is a powerful emetic, nothing more. I shall endeavor to show further usefulness, and that while this compound is derived from morphine it is devoid of narcotic properties. The usual dose as an emetic is gr. $\frac{1}{4}$ by the mouth or $\frac{1}{20}-\frac{1}{10}$ hypodermically.

Physiological Effect.—Experiments upon animals have shown the physiological action of apomorphine to be varied, and from them we learn that the drug first excites the cerebral centres and subsequently depresses them; that in poisonous doses it causes convulsions, probably of spinal origin; that it acts as a direct muscle poison in causing paralysis; that it may increase the rapidity and force of the heart's action, and in larger doses cause its depression; that it first increases the rapidity of respiration, and afterward weakens it, death resulting from respiratory paralysis.

In man these symptoms are seldom or never observed, and clinically its most important effects are seen in its actions upon the vomiting-centre, upon the circulation, and upon the bronchial secretion. Apomorphine hydrochlorate acts as an emetic by its effects upon the vomiting-centre in the medulla only, and this is the case whether given subcutaneously or by the mouth. It is thus entitled to be considered a "systemic" or "centric" emetic.

The superiority of the drug over other emetics lies in its rapidity and certainty of action, in the relative freedom of its action from accompanying nausea and depression, in its unirritating quality if properly and freshly prepared, which renders its hypodermic administration admissible, and in its great efficiency when so given and its very important value when swallowing is impossible. Moreover, if emesis is produced by its subcutaneous administration, the gastric irritation to which other drugs owe their power as emetics is avoided. It will produce vomiting if given by the mouth, but only at the expense of a larger dose and a longer time. Upon the circulation apomorphine hydrochlorate in small or moderate doses usually produces little or no effect; exceptionally, however, after moderate doses, and not rarely if the dose is large, circulatory weakening and embarrassment follow, and caution should be observed in giving it to children and debilitated adults. The size of the dose must be judged by the attendant, who will consider the condition of the heart, respiration, etc.

Uses.—In puerperal convulsions no drug is so highly lauded as apomorphine given subcutaneously. It has almost taken the place of morphine and other narcotics, and its action here depends not upon the emetic power, but on the general relaxation of all the muscles, and I contend that as long as there is relaxation of the system a convulsion cannot take place; therefore the drug should be used when we have a case of threatened puerperal convulsion or if we arrive at the patient's bedside during one of these unsightly and distressing attacks. The dose should not be large enough to produce emesis, but just enough thoroughly to relax the system. I generally begin with gr. $\frac{1}{60}-\frac{1}{40}$ subcutaneously, and if the desired effect is not produced in thirty minutes the dose is repeated. It is useless for me to go into the further treatment of this symptom, which is so familiar to all. The point which I wish to make clear is the relaxing effect of the drug, if not pushed too far.

In epilepsy a hypodermic of apomorphine will prevent or cut short an attack, according as it is given before or during the fit. It can also be used as an antispasmodic in many other diseases.

In the treatment of tetanus, on the suggestion of Dr. Bomford, of Calcutta, doses of $\frac{1}{10}-\frac{1}{4}$ of a grain subcutaneously twice or three times a day were given, and the results were not disappointing. This same physician had a case of hiccough in a man, fifty years of age. He had suffered from it for about six months, and the acts numbered thirty to forty a minute. He had been a well-built man, but was reduced to a skeleton. He had tried a lot of native medicines without relief, and Dr. Bomford's predecessor had prescribed for him almost all the drugs of the pharmacopœia, without the slightest good. Dr. Bomford subsequently tried atropine, morphine, by the mouth and subcutaneously, bromide of potassium, camphor, chloroform,

emetics, a mustard plaster over the region of the diaphragm, and a host of other measures, without the least good effect. He then gave hypodermically $\frac{1}{4}$ gr. of apomorphine dissolved in one hundred and seven parts of water. In less than three minutes the symptoms subsided, and in five minutes more the patient vomited. He was not troubled with the symptom for two days. On the third day it returned, but was less troublesome. Another $\frac{1}{4}$ gr. was given hypodermically, causing vomiting and retching the entire day, but the hiccough never returned.

In bronchial asthma apomorphine affords almost instant relief when the attack has come on and the patient sits at an open window gasping for breath, with a feeling of constriction over the entire chest. It acts in this instance by the relaxing effect, and takes the place of morphine and other narcotics, which are so dreaded because of the habit often acquired. I am yet to hear of the apomorphine habit. Few asthmatic patients go through life without acquiring the morphine habit, and I wish to lay great stress upon the use of apomorphine in this disease.

In catarrhal laryngitis, especially the severe form, the use of apomorphine in small doses will often save the life of the little patient, and it does this by its relaxing-property and also its effect upon the mucous membranes, loosening the secretion and subsequently causing vomiting of the same.

Of all the diseases of childhood croup is one of the most distressing and calls for hasty action by the attending physician, and a hypodermic of apomorphine will do well, either as an abortive or when it is desired to rid the larynx of the thick, tenacious secretion already accumulated, and thus also preventing the operations of intubation and tracheotomy. In these cases a minute dose of apomorphine should be given; say, for a child two to four years of age, $\frac{1}{10}$–$\frac{1}{80}$ gr. hypodermically, to be repeated when necessary.

In all forms of bronchitis in which the cough is dry and secretion scanty, apomorphine is an excellent addition to the expectorant mixtures, and especially in pneumonia it takes the place of alkalies to free the secretion.

In cholera morbus a hypodermic of apomorphine will instantly rid the stomach of all irritable and undigested matter, and by giving a few tumblerfuls of hot water the stomach is thoroughly cleansed.

In poisoning of any kind, when we desire to rid the stomach instantly of its contents, nothing can take the place of a hypodermic of apomorphine given subcutaneously.

These are a few instances in which this most valuable alkaloid has given excellent results, and I trust it will be of some benefit to my readers in their practice. It should certainly take the place of all other emetics, and push ipecac, tartar emetic, mustard, etc., to the background. Every day new preparations are being thrown upon the market, and the physicians of to-day are eager to grasp them. The trouble is we are not familiar with the old drugs, for there are enough official preparations now. I think the alkaloid apomorphine has been kept in the hypodermic case, until mouldy, long enough.

6a Whitehall Street.

Henoch's Purpura.—The disease occurs much more frequently in children, and the principal symptoms are: (1) pain in and near a joint; (2) a purpuric or erythematous eruption; (3) abdominal pain accompanied by vomiting and diarrhœa; and (4) hemorrhagic nephritis. In typical cases all these symptoms are present; in other cases one or other of the symptoms may be absent. Relapses are very common.—Dreschfeld.

Therapeutic Hints.

Colic and flatulence, as evidenced by the signs of abdominal pain and also vomiting, may often disappear with regulated diet. These symptoms are usually much relieved by bicarbonate of sodium with syrup of ginger or spirits of chloroform. Bismuth, too, may be given with good effect—peppermint, caraway, or cinnamon water being useful excipients.—Donkin, "Diseases of Children," page 21.

Calcium Hypophosphite as a Hæmostatic.—Dr. Silvestri (*Gazzetta degli Ospedale*, January 2, 1898) recommends the hypophosphite of calcium as a hæmostatic. It may be employed in the form of a clyster, eight grams of the salt to two hundred grams of water, to which opium may be added, or it may be administered internally in doses of one gram every one and one-half hours, the daily quantity not to exceed eight or ten grams. The following powder is recommended:

℞ Calcii hypophosphit. . . . . 1.20 gm.
Pulv. opii . . . . . 0.01 gm.
At a dose; every two hours.

The drug has been employed in various forms of hemorrhage; *e.g.*, intestinal hemorrhage in typhoid, hæmatemesis from ulcus ventriculi, epistaxis, and very often in metrorrhagia from varied causes. The results in all instances were marked; the bleeding usually ceased before the total daily quantity was used up.—*Klinisch-therapeutische Wochenschrift*, No. 4, 1898.

Infantile Paralysis.—Use the continued current as soon as the diagnosis is made. Faradism is harmful. A current of eight or ten milliamperes is passed for ten minutes. Then interrupt and reverse the current a few times. The slightest cases will require a year's treatment; a bad case several years'. Early intervention is of the greatest importance.—Larat.

Stye.—At first warm compresses of lead lotion (a one-per-cent. solution of the neutral subacetate), or of alum lotion (four grains to the ounce of water), may be used. When the stye has begun to point, a small opening is made in the long direction of the lid margin. When inflammation has subsided:

℞ Ung. hydrarg. nitratis. . . . . ʒ ss.
Vaselini albi. . . . . ʒ ss.
Apply morning and night.

—Berry, *Edinburgh Medical Journal*, January, 1898.

Constipation of muscular origin in women, resulting from pregnancy and implicating the abdominal and perineal muscles, should not be treated by purgatives. Symmetrical massage and gymnastic exercises are called for. The diagnosis is made by observing the feeble abdominal constriction.—Pineus.

Tinea Sycosis.—A mild soap with warm water is first used to remove the crusts, and this is to be followed by an efficient shampoo with spirits of green soap. The infected surface of the chin and face should then be cleanly shaved, and the oil of sweet almonds thoroughly applied, for the purpose of rendering the skin soft and pliable. If after earnest effort has been made to avoid epilation no improvement has taken place, epilation may be practised. After removing the oil with warm water and a mild soap—mild potash soap is excellent—an ointment containing one of the parasiticides should be lightly but thoroughly applied. A benzoated oxide-of-zinc ointment, containing salicylic acid, fifteen grains to the ounce, is good; or two drachms of sulphur may be added also. Beta-naphthol, ten grains, with a scruple of sulphur to the ounce of oxide-of-zinc ointment is another formula.—Dr. M. H. Sears, *The Colorado Medical Journal*, December, 1897.

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PENETRATING WOUNDS OF THE ABDOMEN.

THE interest in this subject is perennial and deep. It is not that the cases are so frequent or so often seen by any particular class of medical men, but the interest seems to rest upon the known difficulties in accurate diagnosis of the intra-abdominal condition, and upon the traditional and acknowledged difficulty of compassing a cure in cases in which any of the viscera are injured. Furthermore, the cases are just as liable to fall into the hands of the country physician, far from competent assistance, as under the care of the hospital surgeon in a large city. The kind of injury which presents the most difficulty in deciding what course to pursue is the stab or punctured wound. From time to time we see reported in the various journals cases illustrating different phases of the question of diagnosis and treatment in this class of injuries; and sometimes in addition to the mere report there are intelligent comment and suggestion, really of greater value than simple description of the operation and its technique.

We are compelled to give to the German journals a large share of the credit for this kind of comment and suggestion, and can only wish that those contributing to publications in the English language would devote themselves more to such aspects of questions upon which they write.

In Langenbeck's *Archiv fur klinische Chirurgie*, early in the current year Büdinger reported a very instructive case of a wound of the abdomen, made with a pocket knife, in which there were no symptoms of intra-abdominal injury for a week from the time the wound was received, and then all the symptoms of perforation of one of the hollow viscera suddenly developed. This course would not have been unusual in an injury due to contusion or to crushing force, but after a stab wound it required explanation.

When the patient was operated upon, an incised wound of the stomach was found, and the abdominal cavity was in the condition we should expect from such a perforation. The repair of the injury was an easy matter and recovery was prompt.

We cannot help being impressed by the remarkable fact that the wound of the stomach should have remained closed tightly enough for a week to prevent leakage, though it was about one and one-half centimetres in length, and that then in consequence of a fit of coughing or from some such cause should have been torn open. The plugging of the wound by everted mucous membrane cannot account for the closure of the orifice, and, furthermore, we do not believe that this eversion ever can protect in a wound large enough to permit the eversion.

We should ordinarily expect adhesions at the end of a week, strong enough to withstand all usual tension, and are somewhat at a loss to explain the occurrence of the symptoms at so late a date. The author of the paper we are considering believes that his case shows the longest recorded interval between the infliction of the wound and the symptoms of perforation, and we are inclined to agree with him. The fact that there is here a case in which such an interval did elapse, introduces a new element in our view of these cases, and compels us to say that we must watch a patient with a penetrating wound of the abdomen without symptoms of visceral injury for at least seven or eight days, and be prepared at any time to cope with the condition of perforation.

It is difficult to give any adequate explanation of the absence of strong peritoneal adhesions in this case, or to say why there should have been no evidences of inflammatory processes in the neighborhood of the wound in the stomach.

The immediate treatment of such a condition as we have under consideration presents more difficulty than the treatment of a bullet wound in the same region, for in the latter case we have no alternative but to explore and be ready for any surgical contingency, while in the case of the stab wound without immediate positive indication we may wait a number of hours and then be guided by developments. These cases cannot be reported and analyzed too often, and we wish that the rich store of material in American surgery could be more extensively drawn upon and elaborated. However, the American surgeon seems to be more of a worker than a writer.

SOME RECENT SUGGESTIONS IN THE TREATMENT OF SYPHILIS.

IT seems almost a matter for surprise that so little change has taken place in the treatment of syphilis during recent years. Mercury and the iodides have held the field against all competitors, although the manner of employing these drugs has from time to time undergone slight modifications. It has been predicted that the serum treatment would in time supersede older methods; still it cannot be said that we are to-day very near a realization of our hopes in this direction. The perfection of intradermic methods has done away with objections which for many years prevented an extended employment of the needle in this country, where it is now coming more and more into favor.

Among recent suggestions is that of Velander, indorsed by Hogner (*Boston Medical and Surgical Journal*, March 31, 1898). Instead of inunctions, mercurial ointment is spread upon the inside of a small pillow-case, which is suspended on alternate days over the patient's chest and back. The layer upon which the ointment is spread comes next to the skin, while the

unspread side protects the clothing. Velander's idea, advanced a number of years ago, that the good effect is obtained by the mercury becoming vaporized, is thus carried out. Ninety grains of fresh ointment is spread over the older layers each day, and after ten days a new pillowcase is substituted. The skin is to be washed each night. It is claimed that the effects are more rapidly secured and with less danger of salivation than by the older inunction method.

A novelty in the way of treatment is that advanced by Lalande (*La Presse Médicale*, March 12, 1898). The *modus operandi* is not given and the good results claimed would seem to necessitate elucidation. The horns of calves are reduced to a powder and incorporated by maceration in a one-per-cent. salt solution. Of this from fifteen to forty-five minims are injected beneath the skin once, twice, or more times a week. Specific manifestations are said to fade away rapidly under these injections—an effect which would scarcely be looked for, considering the small amounts of calcium and potassium salts such a fluid would contain.

Another recent suggestion, made by Bouveyron (*Lyon Médical*, January 9, 1898), is to employ for severe syphilis metallic iodine in larger dose than has hitherto been customary. To secure perfect solution, avoiding drugs which might form metallic combination, and to correct caustic and astringent effects, he advocates the following combination: iodine, one gram, dissolved in a sufficient quantity of iodide-of-potassium solution; glycerin, five to ten grams; citric acid, fifteen grams; syrup and distilled water, one litre. A tablespoonful daily is given to begin with, and this is gradually increased to six or eight tablespoonfuls for a daily dose, always given before meals.

The length of time now required to make sure that syphilis has been eliminated from the system makes it highly desirable that some rapidly as well as radically working method should be devised. Until this is done we must gladly welcome improvements in the way of giving drugs already in use, so as to secure the best effects.

THE PEDIATRIC SOCIETY'S COLLECTIVE INVESTIGATION.

In another column will be found the report of the collective investigation of infantile scurvy, set on foot a year ago by the American Pediatric Society. It is an interesting document in several respects, not the least of which is the additional testimony it furnishes of the often misleading character of medical statistics. It will be remembered that some statistics bearing upon the relation of alcoholism and longevity, collected by a committee of the British Medical Association several years ago, showed as plainly as figures can show that longevity is directly promoted by habits of intemperance. An equally absurd assertion, namely, that sterilized milk is more prone to cause infantile scurvy than any other single article of diet, might be supported by figures taken from the Pediatric Society's report. Thus we find that of the foods taken, unmixed with any other, by the greatest number of scorbutic children, sterilized milk comes first on the list, that condensed milk comes fourth, pasteurized milk fifth, and breast milk seventh. Of the three hundred and fifty-six children reported upon, one hundred and fifty-six, or forty-four per cent., were fed on some form of milk alone, nearly an equal number on proprietary foods alone, and the others on a mixture of milk and artificial food.

But, of course, this is not the only way in which these figures can be interpreted; indeed, they are as capable of being twisted in any direction to support the claims of the individual manufacturers as is the Bible to bolster up contradictory theological beliefs. Thus it does not at all follow that the food to which is credited the largest number of cases is necessarily the most injurious, since it might be held that it was merely the most generally employed. This is doubtless the explanation of the large proportion of cases among children fed on milk alone, since it is to be presumed that this old-fashioned food is still ahead of its younger rivals.

It is to be regretted that this report, which is evidently the result of much painstaking and praiseworthy effort on the part of the committee, does not give us something more definite as regards the relation of scurvy to infant feeding. The conservative conclusion of the committee, that "the farther a food is removed in character from the natural food of a child, the more likely its use is to be followed by the development of scurvy," is doubtless correct, but it is in danger of being disputed by some ingenious and not wholly disinterested student of the committee's statistics.

THE MORAL IMPERATIVE.

That true ethics and wise modes of conduct are not always the result of a full and presumably careful collegiate training in the schools of ancient metaphysicians, and, it may be feared, of modern philosophers, would appear to be the lesson taught by the actions of a certain instructor in a Pennsylvania college. Had more attention been really paid to the "ought," and especially to the "ought not," or, as some modern psychologists might term it, the "moral imperative," in the early training of this man, a career that at first promised much might not have been ruined.

During the past year an instructor in metaphysics and ethics, of apparently bright promise, in order to avenge what seemed to him to be an ill-founded and unreasonable dislike on the part of the president of the college, committed a series of vandal acts, and an actual crime, which have brought him within the clutches of the law. These acts consisted in boyish pranks, such as disabling the college organ, dumping the chapel hymnbooks into a well, tarring the seats of the chapel and the books of the pulpit, even going to the point of actual incendiarism in setting fire to one of the college buildings, and all of this merely to gratify a childish spite.

From the alienist's point of view the case would look much like one of persecutory delusions with consequent paranoia-like retaliation. In this case the moral imperative to right action, in itself fundamentally weak, was thwarted by a mind diseased.

THE RECENT MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

It is so well known that the Medical Record is always ahead of its contemporaries in printing the medical news of the day and reports of important meetings throughout the world, that it seems almost superfluous to remind our readers again of its pre-eminence in this respect. The report of the Denver meeting of the American Medical Association was given to our subscribers complete two weeks ago. Some other journals are still stringing it along in their columns, and it is almost pathetic to read the apology of the official journal of the association in its issue of June 25th, for its neglect promptly to print the proceedings, even of the general sessions.

News of the Week.

The Surgeon of the Rough Riders.—Dr. James R. Church, the surgeon of the Rough Riders, who distinguished himself at the battle of La Quasina, is a Washington boy and a son of the librarian of the senate. He is a graduate of Princeton in 1888, and obtained his medical degree from the Columbian University in Washington in 1893. He went to Camp Alger early in the war as a contract surgeon, but soon secured a transfer to the Rough Riders as surgeon.

The Medical Rejection of Volunteers.—Governor Voorhees, of New Jersey, recently complained to Surgeon-General Sternberg that the examining surgeons were exercising needless severity in rejecting many of the New Jersey volunteers. In reply the surgeon-general said that no especial instructions had been given the examining surgeons at Camp Voorhees, who were governed by the existing regulations relating to examination of recruits. Dr. Sternberg said he could not recommend that the standard be lowered, in view of the active field service required of the volunteer troops.

Dr. Henry P. Bowditch, of Boston, is to receive the honorary degree of D.Sc. from the University of Cambridge, when he is present at the meeting of the International Zoölogical Conference in that city in August. The other recipients of the honor will be Drs. Camillo Golgi, of Pavia; Willy Kühne, of Heidelberg; Hugo Kronecker, of Berne; and Sir William Turner, president of the British Medical Council.

The Post-Graduate Hospital has been placed at the disposal of the army and navy authorities for the care of the sick or wounded soldiers and sailors during the war. Reply has been sent to the members of the executive committe, by whom the offer was made, that their communication has been placed on file for future reference in the event of additional facilities being required for the care of sick and wounded.

Small-Pox at Fredonia.—It is reported that many cases of small-pox have been discovered at Fredonia, about forty miles from Buffalo, in this State. The disease appears to have existed there for some time, no precautions having been taken to prevent its spread.

Tenure of Office of Coroners' Physicians.—According to an opinion recently given by the assistant corporation counsel of this city, a coroner's physician is the personal appointee of the coroner and can be removed only by him, the full board of coroners having no power in the matter. The decision was given in a case arising in the borough of Queens, in which the board of coroners desired to remove one of the physicians against the will of the coroner who had appointed him.

Prof. Francesco Durante celebrated his jubilee, marking the completion of the twenty-fifth year of surgical teaching at the University of Rome, on June 5th. In commemoration of the event a work in three volumes, containing contributions by the leading Italian and a few foreign surgeons, among them Dr. W. W. Keen, will be issued.

The Ever Busy Sneak Thief.—Physicians in New York should be on the lookout for a well-dressed, clean-shaven young man, carrying a large valise and posing as an agent. He rings the door bell and, upon learning that the doctor is out, informs the attendant that he has been requested to wait. "I will at least wait a few minutes," he says, "and if the doctor does not return, I will call again in the morning." In those few minutes he manages to appropriate the most valuable books or other objects in the office or waiting-room.

The Associated Physicians of Long Island.—A society having this title was organized at Garden City, June 8, 1898, by over sixty physicians from the various parts of the island. The desirability of a more general acquaintance among the members of the profession on the island has long been recognized, and the very cordial and enthusiastic spirit shown by those present augurs well for the future. The meeting was called to order by Dr. Louis N. Lanehart, temporary chairman, with Dr. Robert J. Morrison, acting secretary. After the details of organization had been arranged, the following papers were presented and discussed: "Prognosis in Chronic Nephritis," by Dr. H. A. Fairbairn, of Brooklyn. The reader gave a short review of some of the investigations of the physiological chemist in late years, and pointed out their bearing on the treatment and prevention of this disease. "The History of a Case of Leprosy, with an Exhibition of the Lepra Bacillus," by Dr. James MacFarlane Winfield, of Brooklyn. The patient was a boy, aged fourteen years, native of Key West. The disease had existed two years before coming under the observation of Drs. Barber and Winfield. There was no history of contagion, nor had leprosy ever been in the family. The patient was under the care of his Brooklyn physicians four years, finally dying of exhaustion. The disease was a typical tubercular leprosy, and the case was of special interest on account of its being purely American. Dr. Ezra H. Wilson, of Brooklyn, presented a paper on "Immunity." On completion of the regular work of the day, the members united in an informal dinner. It was decided to hold three meetings a year—in June, October, and January

respectively. All members in good standing of the regular county societies of the island are eligible for membership. The following officers were unanimously elected: *President*, Dr. William Browning, of Kings; *First Vice-President*, Dr. Louis N. Lanehart, of Queens; *Second Vice-President*, Dr. William A. Hulse, of Suffolk; *Third Vice-President*, Dr. Charles Jewett, of Kings; *Secretary*, Dr. Robert J. Morrison, of Brooklyn; *Treasurer*, Dr. Arthur H. Terry, of Patchogue; *Historian*, Dr. Joseph H. Hunt, of Kings.

The "Relief."—The work of fitting up the army hospital ship *Relief*, formerly the *John Englis* of the Maine Steamship Line, was completed this week and the ship has sailed for Santiago de Cuba. It may be said that a more suitable purchase than the *John Englis* for the required purpose would have been nearly impossible to make. She is a new boat, but a year old, built by the Delaware Shipbuilding Company, and constructed of the finest steel, with engines and other machinery of the best quality. Her length is 280 feet; beam, 36 feet; and draught, 16 feet. The steamer is able at her fastest gait to make about sixteen knots an hour, and can easily keep up a speed of twelve knots. The equipping and alterations of the interior have been done under the personal direction of the commanding officer, Major George H. Torney, M.D., who has given much time and thought to the consideration of the difficulties to be overcome. Dr. Torney is to be congratulated on the success of the outcome of his deliberations. It was necessary in order to convert the ship to its present purpose almost wholly to demolish and then reconstruct the interior. All the staterooms on the main deck have been removed, the entire space being utilized as wards. Of these large wards there are five. One is placed on the forward end of the hurricane deck; another occupies the after end of the same deck. The officers' ward is situated on the main deck forward. The two largest wards are on the main deck and berth deck respectively, and are estimated to accommodate one hundred patients each. The ward in the after end of the main is reserved for surgical cases, the operating-room, well lighted and ventilated, communicating with it on the starboard side. This room is of course amply supplied with every kind of instrument likely to be required. The floor is tiled and can consequently be kept scrupulously clean. The walls, which are of wood, are enamelled with white paint. The operating-tables are of steel; also white enamelled. It is unnecessary to remark that the aseptic arrangements are as perfect as the peculiarities of ship construction will allow. The bunks, which are in two tiers, are of gas pipe, furnished with a woven-wire and cotton mattress. To prevent the patient falling out with the motion of the ship a wire screen is attached, and a wire crate to contain bandages, dressings, and medicines is fastened to the foot of each cot. Great care has been exercised to insure to the patients ample room, so that they may enjoy the benefit of plenty of fresh air. The cots are arranged in rows, the intervening space being sufficiently wide easily to permit the passage of a litter. The apparatus devised for hoisting or lowering the sick or wounded is especially ingenious and is calculated to effect its object with the utmost smoothness and expedition. On the forward side of the mainmast a steam boom has been fitted, by means of which the sick or wounded can be raised in cradles from the transport barge and deposited in whatever part of the ship desired. This boom will also be used for hoisting or lowering the steam launches. The bathing and lavatory arrangements are on a generous scale, and separate bath and toilet rooms are provided for convalescing patients as well as for the officers and medical staff and nurses. The floors of the bathrooms are of rubber. The isolating-ward is on the upper deck and it should be mentioned that in case of need a large number can be accommodated on the open deck, well sheltered from sun or rain by awnings. The ship is furnished with two complete *x*-ray outfits, electric fans, refrigerating-plant, a microscopic laboratory, photographic appliances, an ice-making machine, and distilling-plant. The electric power will also supply light to a seven-thousand candle power searchlight on the pilot house. There are in addition a number of portable electric lights. The medical staff have their quarters on the main deck forward, their messroom adjoining their staterooms. The members of the staff are Dr. Torney, commanding officer, under whose direction the ship will sail; Dr. Gorgas, yellow-fever expert; Dr. Gray, *x*-ray expert; Dr. Metcalfe, Dr. Hartsock, Dr. Williams, Dr. Meyers, Dr. Schultze, and Dr. Torney, Jr. Lieutenant Crabbs, of the eighth cavalry, has been selected to act as quartermaster and commissary. The nursing-staff consists of nine female and twenty-eight male nurses, who will have quarters on the berth deck. The number of patients who can be berthed with comfort on the *Relief* is about four hundred and fifty. There can be no doubt that the *Relief* is the most perfect and best-equipped hospital ship in the world, and is an advance in nearly every respect on the *Solace*. Advantage was taken of some errors in the designing and arrangement of the *Solace*, and care has been taken to avoid the same mistakes in the *Relief*. It would be idle to assert that the ideal hospital ship has yet been evolved, but at any rate America may take to herself the credit of showing the way to other nations in the movement for the proper treatment of sick and wounded sailors, and soldiers as well when they are engaged in operations near the sea or navigable rivers. That such a ship as the *Relief* is urgently needed to care for those soldiers who may be wounded or contract disease in the unhealthy climate of Cuba cannot be denied. It is not intended, however, to keep patients on board the hospital ship longer than is absolutely necessary; as quickly as is possible they will be transferred to the nearest shore hospital. Of course the *Relief* will fly the Red Cross flag.

Dum-Dum Bullets.—Professor von Bruns, who caused more or less of a sensation at the German Surgical Congress by his arraignment of the British in India for their use of what he called "inhuman bullets," has been proved to have made his charges in entire ignorance of the facts. Professor Ogston, of

Aberdeen, who was present when the paper was read, has published a statement that the bullets used by von Bruns were not Dum-Dum at all. It is asserted that the explosive effect of a bullet depends upon the extent to which it is denuded of its nickel mantle. The mantle of the Dum-Dum is absent for a distance of only two or three millimetres from the tip, but von Bruns experimented with a Mauser bullet, from which the mantle had been removed for a distance of fully a centimetre from the tip. Between the rapidly increasing spirit of commercialism and the prejudices engendered of national antipathy, the race of the German scientist seems to be approaching extinction.

In the Philippines it is said that there are about two million Chinese. Dr. Joseph F. Chan, a Chinese physician living in the United States, has a plan to convert a large number of these subjects into United States troops. To accomplish this the doctor has asked permission to enlist some two hundred Chinamen in San Francisco, who will aid him in converting his countrymen into fighters for the Stars and Stripes.

The American Medical Association.—The number of members and visitors registered at the Denver meeting of the association was nearly thirteen hundred and fifty.

The Late Dr. John Blair Gibbs.—At a meeting of the medical staff at the Demilt Dispensary, held June 17, 1898, the following resolutions were unanimously adopted:

"*Whereas*, Our late associate, Dr. John Blair Gibbs, while acting assistant surgeon in the United States navy, died on the field of battle during an attack by the enemy at Guantanamo, Cuba, on the 12th day of June, 1898; and,

"*Whereas*, As associates, we had reason to respect his professional fervor and attainments; and,

"*Whereas*, He voluntarily left a lucrative practice and a life of comparative ease in response to his country's call to arms, and was among the first to fall in the defence of his country.

"*Therefore, be it Resolved*, That by the death of Dr. Gibbs the medical profession has lost an active, conscientious member.

"*Resolved*, That we deem it a privilege to have been associated with Dr. Gibbs, whose self-abnegation and devotion to his country merit the praise of the nation.

"*Resolved*, That copies of these resolutions be forwarded to the medical press and to the family of the deceased.

"Charles H. Bushong, M.D., J. Dougal Bissell, M.D., N. G. McMaster, M.D., Frank N. Patterson, M.D., *Committee*.

Wonderful Surgery.—We have been looking for a crop of newspaper accounts of marvellous surgical operations on the battlefield or in the new hospital ships, and we have not had long to wait. The report is that "a remarkable surgical operation has been performed on the hospital ship *Olivette* by Surgeons —— and —— on Corporal ——, who was shot through the brain in Friday's battle. The top of his skull was removed, and the bullet was found embedded in the wall of the skull on the opposite side from which it entered. —— will recover." This, of course, is a slight thing and scarcely worth mentioning when the cable rates are so high. But it is good enough for a beginning.

A Medical Man in Trouble.—Several physicians in Harlem have recently been visited by a prosperous-looking man of military bearing, who claimed to be a retired army surgeon. His story was that he was short of ready money and could get none as it was after bank hours, and he would regard it as a great favor if his confrère would cash a check for him. The check was always returned as worthless. The man, who is said really to be a retired army officer, has been arrested and held for the grand jury in $300 bail.

Red Cross Work.—Miss Barton and the first Red Cross contingent arrived at Guantanamo, Cuba, on the steamer *State of Texas*, the first of this week. A large quantity of provisions, medical supplies, and clothing has been sent to Key West, where it is intended to establish a base of supplies. The supply boat, *Red Cross*, which was formerly the yacht *Admiral*, sailed on Wednesday for Key West with a large cargo of medical and surgical supplies, delicacies for the sick, pajamas, Roentgen-ray apparatus, and other necessary articles. Four surgeons, Drs. Solosso, Carbonel, Henry Sewall, and Mozart Lesser, also went on the same vessel. The ice-plant auxiliary is supplying the camps at Jacksonville and at Chickamauga with $20 worth of ice a day and is expected to send a large cargo from Maine to Cuba on a sailing-vessel, which will also carry lumber and sawdust for the construction of temporary icehouses. The uncertainty of the army movements renders it impracticable to set up a plant anywhere for the manufacture of ice. Two new division hospitals are to be opened at once at Jacksonville and Panama Park, Miami, in Florida.

The University of Vermont.—Dr. H. C. Tinkham, of Burlington, professor of surgery and anatomy at the University of Vermont, has been elected dean of the medical faculty *vice* Dr. A. P. Grinnell, who had held the office for twenty-four years.

The Plague is reported to be increasing in the southern Chinese seaports, but is rapidly declining in Bombay. The fear of an epidemic in Calcutta has given occasion to a peculiarly cruel and inane form of a practical joke. The *Medical Press* says that in that city, where the natives live in the greatest dread of compulsory preventive inoculation against plague, some would-be wags have created widespread alarm by surrounding belated pedestrians, and pretending to carry out the dreaded rite by sticking pins into their victims. A more mischievous form of practical joke, our contemporary says, could hardly be imagined, for the scare thus created might, at any moment, throw an excitable and fear-ridden population into open revolt.

The Baltimore Water Supply.—The health commissioner of Baltimore is making strenuous efforts to induce the city to establish a filtration plant, as the danger from typhoid fever (cases of which are very numerous at this time) is increasing.

In Cuba, from March, 1895, to March, 1897, yellow fever destroyed three hundred and eighteen officers and thirteen thousand soldiers, and still there are those who make light of the dangers surrounding an American army of invasion in midsummer.

Ambulance Surgeon Spaulding, of Roosevelt Hospital, had his finger nearly bitten off by a would-be suicide one day recently, thus adding to the reasons why a life on the tailboard of the emergency wagon is not always a happy one.

Koch's Alleged Discovery Regarding Malaria.—Professor Koch has returned to Berlin, and the papers are full of his wonderful discovery that Texas fever among cattle is spread through the agency of ticks and of his acute deduction therefrom that mosquitoes are the inoculators of malaria in man. It seems hardly credible that this aged theory can be put forth as the original discovery of a German bacteriologist in the year of our Lord 1898, but reports of his claim seem to be well founded.

Dr. George C. Pardee, of San Francisco, is prominently mentioned by the papers as the probable candidate of the Republican party for the governorship of California.

Don't Steal a Doctor's Wheel!—If this advice had been followed by a bicycle thief a week or two ago he would perhaps to-day be a happier man. The doctor had to walk back to his office, and reached it just in time to attend a man severely injured by falling from a wheel. Investigation showed that swift retribution had followed the thief, and it was the doctor's own wheel that had thrown him.

The Rhode Island Medical Society.—The eighty-seventh annual meeting of this society was held in Providence on June 2d, under the presidency of Dr. W. A. Gorton.

Professional Secrecy.—Suit was recently brought against the village of Oneida, N. Y., to recover $2,500 damages for a hernia and prolapsus uteri sustained by a fall due to a defective sidewalk. The case was decided against the village, and on appeal the plaintiff's physician was called to show that she had hernia before the accident, and the appeal by the village was based upon the alleged improper exclusion of that evidence. Chief Judge Parker gave the decision that a physician who is called upon to treat a patient at childbirth, and while doing so, and as a necessary incident of his investigations to enable him to act in that capacity, discovers a physical ailment in his patient, cannot be permitted to testify with respect to such ailment, notwithstanding it was a matter about which he was not consulted and for which he did not prescribe.

The Health of the Army in Cuba is reported to be good, dysentery, measles, and heat prostration being the chief of the illnesses, and only a few cases of those having as yet occurred. The camps are on high ground, the water supply is good, and the cool nights and mornings give a chance to the men to recover from the effects of the heat in the day. There has been but little rain yet in the neighborhood of Santiago, where the rainy season sets in later than it does on the north coast. A hospital has been established at Juragua, the nurses and supplies having been for some time in readiness on the transport *Iroquois*.

Yellow Fever.—The encouraging news comes from McHenry, Miss., that there have been no new cases of yellow fever there in several days, and it is hoped that no more will occur. According to a dispatch in *The Sun* from Montevideo, a quantity of Sanarelli's anti-yellow-fever serum has been sent to Cuba by order of the Spanish government.

Dr. William Kelly Simpson has been appointed instructor in laryngology in the College of Physicians and Surgeons, medical department of Columbia University, New York.

Dr. Horace Tracy Hanks, of this city, received the degree of LL.D. from Rochester University at the commencement on June 15th.

A Surgeon Court-Martialed.—An assistant surgeon in the navy, attached to the *Cincinnati*, has been sentenced to confinement for three months on the receiving-ship *Franklin* at Norfolk. He was tried by court-martial on the charge of having been neglectful in the performance of a duty to which he was assigned and of having been disrespectful to the chief surgeon of the vessel when taken to task for his neglect. The court acquitted him of the charge of negligence but found him guilty of disrespect to a superior officer.

Obituary.

WILLIAM HOWARD BAILEY, M.D., LL.D.,

ALBANY, N. Y.

Dr. William H. Bailey died at his home in Albany on June 24th, at the age of seventy-two years and six months. He was born in Bethlehem, N. Y., December 28, 1825, his father being Dr. Solomon Bailey, of that place. He received an academic education, and then entered the Albany Medical College, from which he was graduated in 1853. He began the practice of his profession in Utica, but at the end of a year he removed to Albany, where he continued to reside up to the time of his death.

Up to about ten years ago Dr. Bailey was a prominent figure in the State Medical Society. He was for ten years, from 1865, secretary of the society and was elected to the presidency in 1881, serving during a part of the period that the question of the revision of the code of ethics was agitating the profession of this State. He was also president of the Albany County Medical Society in 1870, and was for many years actively identified with the Albany Institute. He was a corresponding member of the Medico-Legal Society of New York and an honorary member of the Texas State Medical Society. The honorary degree of LL.D. was conferred upon him by the Soule University, at Galveston. In 1882 he was appointed one of the State consulting board of the Hudson River Hospital for the Insane at Poughkeepsie, which office he held for several years. He was one of the United States board of pension examining surgeons for many years, and also served as obstetrician and later as consulting obstetrician to the Albany Hospital.

Reviews and Notices.

THE ORIGIN AND SPREAD OF PANDEMIC DIPHTHERIA. A Research on the Origin and Spread of the Disease, from an International Standpoint. By ARTHUR NEWSHOLME, M.D. Lond., M.R.C.P.; Examiner in State Medicine to University of London; Medical Officer of Health, Brighton. London: Swan, Sonnenschein & Co. 1898.

THIS work is a statistical study on the spread of diphtheria, with a history of all epidemics from 1839 to 1894, in the United States, Europe, and Australasia, based on the number of deaths and not on the number of cases. The first half of the book is devoted to illustrative charts of epidemics in all the important cities of the above-mentioned countries, and in the second half the author gives conclusions derived from the tables.

From the charts we gain several interesting comparative facts, *i.e.*: In European countries, Ireland has the lowest death rate and Paris and Berlin have the highest, while the rates of our own cities, Boston, New York, and Chicago, are even higher than that of Berlin or Paris. England's highest rate is not much more than one-half the lowest rate of Massachusetts. The author gives an historical summary of diphtheria from A.D. 380 to the present time. He draws two main conclusions, viz.: 1. The disease spreads from town to town and from country to country by personal infection. 2. Climatic influences are very strong in determining epidemics. He claims that it is closely related to deficiency in rainfall, no epidemics having been known during a succession of wet years. Dry soil and low ground water also favor it.

THE DEVELOPMENT OF THE CHILD. By NATHAN OPPENHEIM, M.D., Attending Physician to Children's Department of Mt. Sinai Hospital Dispensary. New York: The Macmillan Company. 1898.

THE old adage that "blood will tell" is strongly combated in this book by the author, who believes that environment, general education, and force of example are much stronger determining elements of a child's future than any purely hereditary influences. He devotes two chapters to comparative anatomical and physiological development to show the temporary and unstable condition of a child's economy, and therefore its susceptibility to impressions. Hereditary influences, he claims, are by far too greatly modified by different social conditions and combinations through past generations to have any weight in influencing a child's character. Predisposition is as near as we can get to heredity. Following this idea throughout, the author considers the condition of the child in the primary school; his relationship to religious and legal questions, to criminology, and to institution life. He devotes a chapter to the mother's education, or, as he terms it, "The Profession of Maternity." This and the chapter on primary schools appear to us to be the best in the book, on account of their more practical treatment—the author having allowed himself to wander less into the ethical byways than in some of the other chapters. The work teaches a very wholesome lesson on the responsibility of parents and guardians, and closes to them that very convenient loophole of escape—"heredity." The ethical and sociological sides of the question are strongly brought out, but still there is much of practical value for any one.

A MANUAL OF HYGIENE AND SANITATION. By SENECA EGBERT, A.M., M.D., Professor of Hygiene and Dean of the Medico-Chirurgical College of Philadelphia; Professor of Anatomy, Physiology, and Hygiene in the Temple College; Member of the Academy of Natural Sciences of Philadelphia. Illustrated with 63 Engravings. Philadelphia and New York: Lea Brothers & Co. 1898.

THE author of this excellent little work has been well inspired in preparing it, for there is a real need for a handy book on hygiene, not so large as to repel all but the expert nor so condensed as to be of necessity superficial and imperfect. Dr. Egbert appears to have kept to the *via media* quite successfully. The chapters of the book, the titles of which show fairly well the scope of the work, are: bacteriology, the atmosphere, ventilation and heating, water, food, stimulants and beverages, personal hygiene, school hygiene, disinfection and quarantine, the removal and disposal of sewage, vital statistics, and the examination of air, water, and food.

ORTHOPÆDIC SURGERY. By JAMES E. MOORE, M.D., Professor of Orthopædia and of Clinical Surgery in the College of Medicine of the University of Minnesota, etc. Philadelphia: W. B. Saunders. 1898.

IN this work Dr. Moore has given us a book which should find its place in the library of every general practitioner. Not only is the book well arranged and clearly written, but it abounds in numerous illustrations, which are so true to nature that one has to look at them but once to carry them in the memory ever after. There have been many larger and more voluminous books written on orthopædics, but it is doubtful if there is any which will prove of greater assistance to the busy practitioner.

THE CARE OF THE SICK AT HOME AND IN THE HOSPITAL. A Handbook for Families and for Nurses. By DR. TH. BILLROTH, Professor of Surgery in Vienna, etc. Translated by Special Authority of the Author by J. BENTALL ENDEAN, London: Sampson, Low, Marston & Co., Ltd. New York: Scribner's Sons.

THIS is the fourth edition and it has been considerably revised and enlarged. It contains fifty-two illustrations, besides an excellent steel-plate portrait of the great surgeon. It is one of the most useful and entertaining books of its kind ever written.

THERAPEUTISCHES VADE MECUM DER HAUT- UND GESCHLECHTS-KRANKHEITEN. Für Practische Aerzte. Von DR. REINHOLD LEDERMANN. Berlin. 1898.

THE arrangement of this small manual is excellent. First, it treats of the various forms of medication, and of the more important remedial agents employed by the dermatologist; and, secondly, groups and classifies these drugs, often in the form of a prescription, under distinct captions. The sections on gonorrhœa and syphilis are concise and complete. The "Vade Mecum" recommends itself to the general practitioner.

PROCEEDINGS OF THE NEW YORK PATHOLOGICAL SOCIETY FOR THE YEAR 1896. Printed for the Society. 1897.

THIS report presents the usual number of interesting cases and contains several woodcut illustrations. It concludes with an instructive lecture: "On the Relationship between Inflammation and the Sundry Forms of Fibrosis," by Dr. Adami, of McGill University.

INTERNATIONAL CLINICS: A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology, and Dermatology, and Specially Prepared Articles on Treatment. By Professors and Lecturers in the Leading Medical Colleges of the United States, Germany, Austria, France, Great Britain, and Canada. Edited by JUDSON DALAND, M.D. (University of Pennsylvania), Philadelphia, Instructor in Clinical Medicine and Lecturer on Physical Diagnosis in the University of Pennsylvania, etc.; J. MITCHELL BRUCE, M.D., F.R.C.P., London, England, Physician to and Lecturer on the Principles and Practice of Medicine in the Charing Cross Hospital; and DAVID W. FINLAY, M.D., F.R.C.P., Aberdeen, Scotland, Professor of Medicine in the University of Aberdeen, etc. Volume I. April, 1898. Philadelphia: J. B. Lippincott Company.

THE volume before us quite comes up to the standard in the names of contributors and in what they have written, though the illustrations are not so numerous as is sometimes the case in the "Clinics."

To enumerate a few writers: Jaccoud, Tirard, Maylard, Marfan, Ballantyne, Hayem, Robin, Bramwell, Bridge, Ingals, Hirschfelder, McCall Anderson, Alex. James, Mathews, Montgomery, Coe, Dabney, and Daland himself. There are others, but what can one wish more?

RESEARCHES ON TUBERCULOSIS. The Weber-Parkes Prize Essay, 1897. By ARTHUR RANSOME, M.D., M.A. Cantab., F.R.S. London: Smith, Elder & Co. 1898.

IN this brochure the subject of tuberculosis is presented with extraordinary clearness and scientific precision. One cannot read too much of so common a disease, and the author's essay is certainly a most valuable contribution to the subject. The various chapters are well chosen and arranged, the style is clear and concise, and many new, important, interesting, and instructive facts are brought out in the course of the work.

Bäder-Almanach. Mittheilungen der Bäder, Luftkurorte und Heilanstalten in Deutschland, Oesterreich, der Schweiz und den angrenzenden Gebieten, für Aerzte und Heilbedürftige. Berlin: Druck und Verlag von Rudolf Mosse.

The title explains the contents. A very excellent reference book, since it contains all the necessary information as to the location, accommodations, and advantages of the various European bathing-resorts.

International Clinics: A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology, and Dermatology, and Specially Prepared Articles on Treatment. By Professors and Lecturers in the Leading Medical Colleges of the United States, Germany, Austria, France, Great Britain, and Canada. Edited by Judson Daland, M.D. (University of Pennsylvania), Philadelphia; J. Mitchell Bruce, M.D., F.R.C.P., London, England; Physician to and Lecturer on the Principles and Practice of Medicine in the Charing Cross Hospital; David W. Finlay, M.D., F.R.C.P., Aberdeen, Scotland. Volume IV., Seventh Series. Philadelphia: J. B. Lippincott Company.

Many interesting lectures are gathered together in this issue. Among them are: "Venesection in Heart Failure," Warner; "Treatment of Acne," Hutchins; "Diabetes," Klemperer; "Differential Diagnosis of Kidney Lesions," Heitzmann; "Diagnosis of Gastric Diseases," Boas; "Curability of Tuberculosis," Grancher; "Prevention of Tuberculosis," Eshner; "Differential Diagnosis of Typhoid," Charles L. Greene; "Localization of Paralysis," Fisher; "Operation for Fistula," Mathews; "Diagnosis of Syphilis," Andrew Clark; "Osteomyelitis," Cumston; "Fibroid," Mundé; "Contagious Impetigo," Cantrell; and many others. The work is in every way worthy of consideration.

Diseases of the Stomach: Their Special Pathology, Diagnosis, and Treatment, with Sections on Anatomy, Physiology, Analysis of Stomach Contents, Dietetics, Surgery of the Stomach, etc. In Three Parts. By John C. Hemmeter, M.B., M.D., Ph.D., Clinical Professor of Medicine at the Baltimore Medical College, Consultant to the Maryland General Hospital, etc. Philadelphia: P. Blakiston, Son & Co. 1897.

It seems to be an unquestionable fact that the human stomach has attracted to itself a degree of attention which a few decades ago it could scarcely hope for. Still surgeons would have us believe that as an organ necessary for the economy it has ceased to command serious consideration, and that its removal is attended with slight consequences. If one may judge by the number of volumes devoted to a consideration of the stomach alone, the conviction must force itself upon the mind that the importance of this particular organ is not going to suffer from lack of literary consideration. And still the subject may be said to be a new one, so far as America is concerned, and the author deserves particular credit for bringing out so clear and comprehensive a work. It is much more pretentious than any which has preceded it here, there being seven hundred and eighty-eight pages, inclusive of an excellent index. There are a number of interesting illustrations and some formulas interspersed through the pages.

Surgical Diseases of Female Generative Organs. By L. S. Pilcher, M.D. Philadelphia: J. B. Lippincott Company. 1898.

This brochure contains the results of ten years' experience in the treatment of the class of cases under consideration. In the five chapters the author has pretty well covered the surgical aspect of the subject and has handled it in a style which indicates his experience and skill. Most of the diseases of the female generative organs seem to have come under his observation, so that from reading the work we can get a good idea of surgical gynæcology. The "Prologue" contains several sentences which it might be well to read and remember.

Accident and Injury: Their Relations to Diseases of the Nervous System. By Pearce Bailey, M.D. New York: D. Appleton & Co. 1898.

In this work the author disclaims any desire to present an exhaustive treatise of the subject in hand, but wishes rather to collate and systematize to as great an extent as possible what has been reported by various observers and to amplify this when possible with what he has himself observed. In the preface due acknowledgment is made to the various writers whose works have been used as sources of material in the preparation of this volume.

The book does represent a large amount of research of a bibliographical kind, but to the specialist, under whose care most of the cases of the class under discussion will come, the extended description of methods of examination, etc., does not contain anything novel, and the man unfamiliar with such cases and methods will probably find in these descriptions a warning to consult the specialist. The chapters on injuries of the brain and spinal cord are good and contain a number of suitable figures. The chapters on such diseases as locomotor ataxia and general paralysis might have been compressed, since the connection between such diseases and the effects of trauma on the nervous system is surely not close, and could be of interest only in a question of differential diagnosis. The author has succeeded, in the chapters on traumatic neurasthenia and traumatic hysteria, in presenting the subject clearly, and those chapters with the one on malingering form decidedly the best part of the book. While this work cannot be said "to fill a long-felt want," it will undoubtedly prove useful as a handbook for those who are interested in this and cognate subjects. The indexes are good and the typographical work is very satisfactory.

Manual of Operative Surgery. By H. J. Waring, M.S., M.B., B.Sc., F.R.C.S. New York: The Macmillan, Company. 1898.

This volume is one of a useful class having the characteristics both of the larger "Text-book" or "System" and of the more compact "Compend." It is a book professedly intended for students of operative surgery, and as such is very satisfactory. The arrangement of chapters is somewhat unusual, for the first chapters, after one of an introductory nature, are devoted to abdominal surgery, a subject not generally treated of so early in such a work. The descriptions of operations are clear and the figures have the semidiagrammatic quality which is more useful in a work of this kind than any result we can get from an exact engraving or photo-mechanical reproduction.

In the chapter on hernia, the author seems to have a preference for Kocher's operation for radical cure, but his objections to Bassini's operation might not be accepted by most surgeons. No mention is made of the more recently suggested methods of avoiding the tendency to hernia after operations for the removal of the vermiform appendix. Some of the descriptions of detail at operation are somewhat tediously minute; for example, it is hardly necessary to tell a man about to operate upon a patient with a perforated gastric ulcer which side of the table to stand upon. When a man feels capable of operating on such cases, such instruction is trivial. The chapters on ligatures of arteries, nerve suture, etc., and those on bone operations cover the ground satisfactorily, and the space devoted to amputations and excision of joints is well supplied with figures. There is nothing, however, in these chapters calling for extended comment. A chapter on ophthalmic operations contains some useful general information on the subject to which the chapter is devoted.

Atlas and Essentials of Pathological Anatomy. By Dr. O. Bollinger. Volume II. Urinary Apparatus, Sexual Organs, Nervous System, and Bones. With 63 Colored Figures upon 52 Plates and 17 Illustrations in the Text. William Wood and Company. 1898.

We have had occasion before to notice the first volume of Bollinger's "Essentials of Pathological Anatomy," and the appearance of the second volume fully maintains the standard set by the first. In this volume the appearance of the lesions of the kidneys, the bladder and ureter, male and female sexual organs, mammary glands, dura mater, brain, bones, and joints are carefully and accurately portrayed. As stated in a review of the earlier volume, we believe that the work will prove of service to the practitioner who does not possess the advantages of a large library or the facilities of the hospital mortuaries of a large city.

Essays on Bacteriology and its Relation to the Progress of Medicine. By Theodore Potter, A.M., M.D., Professor of Pathology and Bacteriology in the Medical College of Indiana, Indianapolis University, Indianapolis. 1898.

The above series of essays is a popular contribution to the knowledge of bacteriology which possesses the virtue of brevity and readability. While there is nothing new or original in the essays, they make good reading for an intelligent and appreciative layman.

Medical and Surgical Reports of the Boston City Hospital. Ninth Series. Boston. 1898.

From time to time we have animadverted upon the absolute Bootlessness of most of the reports given out by the boards of health and the hospitals of this country. It is with pleasure that we notice this hospital report, which contains so much of value to the profession. In all, some twenty-one careful and well-written papers are presented, covering a wide field in both medical and surgical practice. The example set by the Boston City Hospital could be followed by others to their honor and credit.

The Genesis and Dissolution of the Faculty of Speech. A Clinical and Psychological Study of Aphasia. By Joseph Collins, M.D. Awarded the Alvarenga Prize of the College of Physicians of Philadelphia, 1897. Pp. 432. New York: The Macmillan Company.

The author has attempted an ambitious task in writing upon the disorders of the faculty of speech, for a sound discussion of the subject involves not only a thorough clinical and pathological knowledge, and an acquaintance with a vast range of literature, but also an understanding of the psychology of the day. We do not hesitate to say, at once, that Dr. Collins has shown himself a master of the problems with which he is confronted. His work is not simply the laborious compilation of a student, but represents the critical study and acumen of one who is thoroughly familiar with every detail.

The book begins with a general discussion of the disorders of intellectual expression and a brief outline of the classification which he adopts in the subsequent chapters. This classification is in the line of that generally prevalent in modern neurological literature, and the author has wisely not attempted any fine elaborations. The three great divisions which he makes are motor, sensory, and compound aphasias. The motor aphasia is subdivided into types which in general resemble what are known as cortical and subcortical aphasias and the dysarthrias. The sensory aphasias are the auditory and visual, each of which has its cortical and subcortical types. The only criticism that may be made on this is that custom does not place the dysarthrias among the aphasias. But this is an academical matter, which is not of great practical importance. The nosology of aphasia as thus given will, we trust, help to emphasize again the fact that neurologists no longer use the terms "amnesic" and "ataxic" aphasia, and that the sooner these words are forgotten, the sooner will clear ideas of the clinical pictures of aphasia be obtained by the general practitioner.

The author's introduction is followed by an interesting chapter on the history of aphasia, in which he lays emphasis on the importance of the work done by Bastian, in England, and Dejerine, in France, and in which he also emphasizes the fact that the psychological conception of aphasia taught by Charcot, and so widely disseminated by his works and his pupils, needs most serious alteration, in view of the light thrown upon the subject in recent times.

The subsequent chapters of the book are devoted to the study of the genesis and function of speech, the nature of aphasia, and then to detailed descriptions of the different types of aphasia. Finally, there are chapters upon diagnosis, etiology, morbid anatomy, and the medico-legal aspects of the subject. In these chapters are embodied several original cases, with autopsies, observed by the author himself, and all are of very positive value. Some clinical histories are also given, which illustrate in a striking way the condition of aphasic patients.

The author has much to say about the "zone of language," a comparatively recent term in localization literature, and one which deserves the prominence which is given to it. He has also a number of diagrams which illustrate very well the location of these zones and the psychological mechanism of speech. One of the points upon which the author is especially insistent is his belief that there is no centre for writing, and that the mechanism controlling this is really identical with that for articulatory speech.

Another point upon which he is equally emphatic is that all forms of aphasia are really sensory, in the sense that they are due to lesions of centres which receive stored-up impressions, rather than to lesions of centres which emit impulses. In motor aphasia, for example, the trouble is really a destruction of those sensory and memory images from which go out impulses that control the motor centres of the articulatory organs. The "motor" zone of language is always an area which is connected with the motor centres, but it is not itself a motor centre, nor are its axes connected by projection fibres passing into the motor tracts.

Still another important feature brought out by this work is the fact that there is a certain mutual relationship between the different parts of the zone of language, so that when one part is injured the whole mechanism may be for a time upset. In this way are explained the frequent and widespread disturbances of speech from lesions involving, perhaps, only a limited portion of the zone of language, such, for example, as the auditory area.

We have not space to describe further the various interesting facts which modern science has brought out in connection with the faculty of speech, and none of which seems to have escaped our author's careful scrutiny. Some criticism will perhaps be excited by a tendency to artificiality of style, and an attempt to use words which, though perhaps always proper, are at times bizarre. Despite these defects, however, the author's style is, on the whole, clear and effective. The book is well printed, in good type, upon excellent paper, in a way which is creditable to the publishers.

Die Erysipel-, Erysipeltoxin- und Serumtherapie der bösartigen Geschwülste. Von Dr. Rudolph Eschweiler, Bonn. Leipzig: C. G. Neumann. This monograph is a review of the work hitherto done in treating malignant tumors through the agency of the erysipelas coccus or its toxin. After a short history of the subject, the treatment by producing an artificial erysipelas is considered, and all reported cases are tabulated. It is shown that of twenty-two cases of inoperable sarcoma, three have been cured. Coley's method is then carefully detailed and the results are reviewed. The author states that of one hundred and sixty cases treated by this method, four cases can be considered healed. Emmerich's serum is shown to have no cures to its credit. Eschweiler concludes that the Coley injections have too rarely resulted in cures to be recommended, and considers the production of erysipelas justified. In a short appendix the method of Hericourt and Richet is described as ineffectual.

Diseases of the Eye. By Edward Nettleship, F.R.C.S., Ophthalmic Surgeon at St. Thomas' Hospital, London; Surgeon to the Royal London (Moorfields) Ophthalmic Hospital. Revised and Edited by W. T. Holmes Spicer, M.A., M.B., F.R.C.S., Ophthalmic Surgeon to the Metropolitan Hospital and to the Victoria Hospital for Children. Fifth American from the Sixth English Edition. With a Supplement on Color Blindness by William Thompson, M.D., Emeritus Professor of Ophthalmology in the Jefferson Medical College of Philadelphia. With 2 Colored Plates and 161 Engravings. Philadelphia and New York: Lea Brothers & Co. 1897.

"Good wine needs no bush," and a work that has passed through six English and five American editions does not require a very lengthy exposition of its merits at the hands of the reviewer. Those who are already familiar with the book will find that in this, as in previous revisions, the subject matter has been brought thoroughly up to date and constitutes an adequate exposition of the ophthalmological practice of to-day, while to those to whom it is new it may be said that in small compass and at moderate expense it represents an epitome of the best ophthalmology of the old and new worlds.

Etiologia e Patogenesi della Febbre Gialla, con XII. Tavole. Torino, 1897. Prof. Dott. G. Sanarelli, Direttore dell' Instituto d'Igiene Sperimentale dell' Universita di Montevideo. Turin: Rosenberg and Sellier. 1897.

Sanarelli's work on the bacillus of yellow fever is now so well known and has been so widely discussed that his published treatise of one hundred and fifty pages is opened with interest; and, it might be added, with profit, for the work shows abundant evidence of careful and painstaking work. The lithographs are excellent, though the printing and binding are of the usual bad style of Italian work.

The Anatomy and Functions of the Muscles of the Hand and of the Extensor Tendons of the Thumb. By J. Francis Walsh, M.D. (University of Pennsylvania), of Camden, N. J. Essay Awarded the Boylston Prize for 1897. Department of Anatomy and Physiology, by the Boylston Medical Committee, Boston, Mass. Pp. 51. Philadelphia: Charles H. Walsh. 1897.

The lack of conformity in descriptions of the musculature of the hand by different writers is proverbial; just how great

this variation is is well shown in the latter part of the above book, devoted to a comparison of such descriptions by most of the classic anatomists. The author's work embodies the results of the dissection of fifty-three hands, and tends to show a number of errors, as regards both character and function, in the commonly accepted accounts of the muscles in question. A bibliography and drawings add interest and value to the work.

Society Reports.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, June 20, 1898.

GEORGE TUCKER HARRISON, M.D., PRESIDENT.

Tubal Menstruation.—DR. A. BROTHERS presented a specimen of that rare condition known as tubal menstruation. The patient, a woman of thirty-nine years, had been married thirteen and one-half years. She had had no miscarriages and had given birth to two children, the last ten years ago. During the last pregnancy she had a severe fall, as a result of which the child died, necessitating a forceps delivery ten days later. She formerly menstruated without pain, but since this last pregnancy she had had pain. For five months she suffered from pain every four weeks, but saw no blood. The cramps were sufficiently severe to confine her to bed for three or four days. Within the past year she had lost a good deal of flesh. Examination showed the uterus to be anteflexed and pushed forward by a cystic tumor in Douglas' cul-de-sac. On June 4th she was examined under ether. Only a large, bulging, cystic tumor in the posterior cul-de-sac was evident. On incision of the posterior vaginal vault and puncture of the tumor, a large quantity of dark, tarry, non-coagulated liquid escaped. A careful examination, in which he was assisted by Dr. A. Palmer Dudley, revealed extensive adhesions and a similar tumor high up on the right side. The vaginal wound was packed with iodoform gauze and an abdominal section performed, with the patient in the Trendelenburg position. During the separation of the adhesions the other sac ruptured and flooded the peritoneal cavity with the same dark fluid. The cavity was washed out thoroughly. The patient did well up to a few days ago, when the urine became highly albuminous and she developed a left-sided pleuro-pneumonia. The speaker said the case was now progressing favorably. The tumors were presented, one measuring two by two inches, and the other two by three inches. They consisted of ovarian sacs communicating with the Fallopian tubes. The latter had become agglutinated to the ovaries, and had ruptured into them. The uterine extremities of the tubes were impermeable. The uterine end of the tubes must have become narrowed at first, and then closed. Menstruation, vicarious or otherwise, must have taken place every month through the tube. This finally resulted in the blood cysts discovered at the operation. Dr. Brothers said that the specimen presented illustrated the possibility of menstrual bleeding taking place in the tubes. In a number of recorded cases the blood had been found in the tubes in connection with various forms of atresia. This was the only case, so far as he knew, in which the blood existed in the tubes without any blood in the abdominal cavity or elsewhere. It was probable that ten years ago the woman developed an endometritis and a salpingitis, and that as a result of the latter the uterine end of the tube became occluded. It would seem probable that after this the tubal mucous membrane took upon itself the menstrual function normally performed by the endometrium.

Menstruation is a Leakage from the Ovary.—DR. A. PALMER DUDLEY said that he had met with this condition only once previously in an experience covering twenty years. He had long contended that the blood of menstruation was a leakage from the ovary. With the rupture of the ovisac and the discharge of the ovum there was a leakage of blood from the ovary, as shown by the fact that in laparotomies performed at the menstrual period about two ounces of blood would be found in the peritoneal cavity. The case just reported not only illustrated this condition, but also showed what nature could do under certain circumstances to circumvent the normal function. This woman had evidently suffered from a local peritonitis, and the peritoneal covering had separated the fimbriated extremity of the tube from the general peritoneal cavity, so that an ovisac was formed and eventually became filled with blood. Each menstrual period added its portion of blood to the already distended ovisac, and, the uterine end of the tube being closed, there could be no relief in that direction. The case showed that the uterine mucous membrane was not the all-important structure in connection with the function of menstruation. It also showed that when the menstrual blood was not freely discharged, but was reabsorbed, certain reflex symptoms developed, such as neuroses and acne. In conclusion, the speaker said that menstruation was not tubal hemorrhage or uterine hemorrhage, but leakage from the ovisac.

Other Sources for the Blood.—DR. ANDREW F. CURRIER said that, while he did not question the fact of the relation of this accumulation of blood to the menstrual function, he would call attention to the fact that this was not the only way in which such an accumulation of blood might occur. For example, he had operated upon a puerperal case only two weeks ago, because of a peritonitis and the existence of two pelvic tumors. The operation revealed evidences of a recent and rather extensive peritonitis. There was an accumulation of stinking fluid in the pelvis, which was removed, and after this the appendages, which were adherent to the bottom of the pelvis, were also taken out. The tumor was found to be made up of an accumulation of fresh blood, probably in some way connected with the parturition. It seemed to him that a peritonitis fixing the tubes and ovaries was often the starting-point of the cause of such conditions. This peritonitis caused an interference with the circulation of the blood through the part. Personally he had not been able to satisfy himself regarding the fact alluded to by Dr. Dudley concerning the blood of menstruation. The bleeding seemed to him to be an episode connected with the shedding of the menstrual decidua.

The Midwifery Question.—DR. THOMAS J. HILLIS read a paper on this subject. He said that the customs or usages of ages could not be obliterated by a stroke of a governor's pen or by an act of Congress. The midwife had withstood the changes of fortune for over five thousand years, and she would continue to exist. In Greater New York about one-half of all the confinements were conducted by the midwives, or by janitresses, neighbors, and other would-be midwives. As a rule, the midwives got frightened early in a case and often summoned a physician when he was not really required. Much more injury was done by the young, meddlesome, and inexperienced medical fledglings than by the midwives. These young medicos made, on an average, about three hundred vaginal examinations, with the result that they caused congestion and drying up of the vagina, and often endangered the life of the parturient. The passing of the midwife would not mean that the parturient woman would call a physician—she would not do this even though the medical man had taken a post-graduate course in ob-

stetrics on the planet Jupiter. If these women could not have their midwives, they would employ women physicians in spite of their natural prejudices against the latter. The result of the suppression of the midwife would be that the country would be flooded with women doctors, and the medical men would be squeezed between the millstones. A much better plan than the suppression of the midwife was the determination of the individual physician to instruct properly the midwife in his neighborhood.

Qualify Trained Nurses for Obstetric Work.—Dr. Thomas H. Manley said that the government of Great Britain had just decided to register midwives. Personally he had long been of the opinion that, as a rule, a man had no business in the lying-in chamber, and that this was the special sphere of the midwife, the trained nurse, and the woman physician. He hoped the time would come when every trained nurse would be properly instructed and given a certificate which would legally constitute her an attendant on cases of obstetrics.

Dr. A. P. Dudley indorsed the suggestion regarding the training of nurses for obstetric practice.

The Trendelenburg Position in Prolapse of the Funis.—Dr. R. Abrahams read this paper. He said that it was natural that the postural treatment should be suggested, in view of the fact that the human female is the only animal in whom this accident occurred. In 1858 Dr. T. Gaillard Thomas struck the keynote of the situation in the following statements: (1) The causes of this complication are the slippery nature of the displaced part and the inclined plane offered by the uterus; and (2) the only rational treatment was to reverse these conditions by placing the woman in the knee-chest position. This position was extremely unnatural and repulsive to woman, and it could not be long endured; moreover, should rapid delivery be demanded, it was surrounded with difficulty. These disadvantages did not apply to the Trendelenburg posture, and, moreover, when the cord was once reduced it could be maintained in proper position, even though the posture be modified to make the patient more comfortable. After making the diagnosis, no time should be lost in placing the patient in the Trendelenburg position. This having been done, the carefully sterilized hand, which was preferable to the fingers, should be introduced into the vagina and kept there until after the next pain, to make sure not only that the cord was reduced but that it remained reduced. If the pains were strong and labor could be soon terminated, or the head made to engage so as to preclude the possibility of a return of the prolapse, the patient might be kept in the Trendelenburg position; but if this was not the case the patient must be lowered half way. If there was still no tendency fully to plug the os, delivery should be hastened by the use of forceps or by version. The Trendelenburg position was particularly favorable for version. In private practice a very convenient way of obtaining the Trendelenburg position was by placing the patient on an ironing-board while she was still in the recumbent position, bringing the popliteal spaces to the end of the board, and then raising the latter to the desired position, and supporting it by an inverted chair, padded with a pillow. Only three cases of prolapse of the cord treated by the Trendelenburg position had been published—two by Dr. A. Brothers and one by himself; but he had notes of six cases which had been so treated—a very respectable showing, considering that this complication of labor occurred only once in about five hundred times.

Dr. Abram Brothers said that the postural treatment of prolapse of the funis had been before the profession for many years, but it had occurred to him a few years ago that the Trendelenburg posture was better suited to this purpose than the knee-chest position advocated by Thomas. In putting the suggestion into practice he had been surprised at the ease with which the prolapse could be reduced. It seemed to him advisable to terminate delivery at the time, because of the danger of the recurrence of the prolapse from the persistence of the original etiological factors. He had then been struck by the facility with which version could be performed with the patient in this position. After bringing down one foot, it had been his rule to lower the patient to the horizontal position. After the completion of the version, when there was a tendency to a recurrence of the prolapse of the funis, he had found it desirable to insert a large sterilized sponge. When the pulsations of the cord were good there was no need for great haste in the termination of labor.

Hypnotism in Pregnancy and Labor.—Dr. Louis Lichtschein read this paper. He said that there were only three normal conditions in pregnancy in which suggestive therapeutics was useful, viz.: (1) In pernicious vomiting; (2) anorexia; and (3) abnormal cravings for particular foods, and especially for unpalatable substances not usually regarded as food. That the obstinate vomiting of pregnancy was sometimes amenable to psychical influences was shown by its amelioration or cessation by the mere change of surroundings. He had not had the opportunity to use hypnotism in complicated cases of labor, but when it could be used successfully it possessed a decided advantage over chloroform. Some pregnant women could not be hypnotized at all; others could be made to sleep only superficially; while others again slept deeply, but awoke as soon as the pain became severe. Still others slept very deeply and did not awaken during the pains, and on awakening afterward had no recollection of what had taken place. There was still another class, in which, although the patient was awake, she felt no pain as the labor progressed. Of forty-six cases of labor in which he had employed hypnotism, nine were failures; in eleven the patients slept superficially, fifteen slept deeply, ten had a very deep sleep with perfect amnesia, and one remained awake but felt no pain at all. A number of illustrative cases were narrated, including one in which it was asserted that the "suggestion" given two months previously had resulted in an unexpected and painless delivery before he could reach the bedside. During the deep hypnotic sleep the pain could not only be reduced, but it could be intensified, and the need for chloroform and forceps in some instances dispensed with. The conditions of the puerperium which might be favorably affected by suggestion were after-pains, lactation, peristaltic movements of the bowel, puerperal paralysis, and puerperal mania. An excessive flow of milk could often be promptly checked by suggestion.

A Memorial to Dr. Joseph O'Dwyer.—A resolution, introduced by Dr. T. J. McGillicuddy, was adopted, authorizing the appointment by the association of a committee of three to assist similar committees from the other medical societies in raising a fund to perpetuate in a suitable and enduring manner the memory of the late Dr. Joseph O'Dwyer.

Tuberculosis.—Inject into the gluteal region cinnamic-acid emulsion (five per cent.) 0.1 gm., gradually increased to 1 gm. Unless thrown deeply into the muscle the injections are painful. Keep up for months. Cinnamic acid powerfully influences tuberculosis. It is harmless given as above, and gradually brings about a cure in a proportion of instances of pulmonary tuberculosis, though it is not regarded as a specific.—Husser, *Therapeutische Monatshefte*, September, 1897.

Clinical Department.

INTESTINAL OBSTRUCTION CAUSED BY THE VERMIFORM APPENDIX ACTING AS A CONSTRICTING BAND.

By FREDERIC C. PAFFARD, M.D.,

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The following case, occurring in the service of Dr. O. J. Ward at Gouverneur Hospital, is of some interest, as the constricting band, the vermiform appendix, was a most unusual one. Richardson (Dennis' "System of Surgery," vol. iv., page 304) reports but three cases on record of intestinal obstruction from this cause. The following is the history of the case:

I. F——, aged thirty-four years, married, born in Russia. Family history negative. Past history: He had an attack of abdominal pain, nausea, and vomiting, two years ago, which lasted for two or three days. Six weeks ago he had another similar attack, which lasted for six days. Operation was at that time advised by the family physician, but the patient refused. The general health between the attacks was good. His present illness began two days before his admission to the hospital. The patient complained of severe colicky pain in the abdomen and obstinate constipation. On the day of admission the patient began to vomit. Vomiting became more severe as the day progressed, and at 3:15 P.M. an ambulance was summoned, and the patient was removed to the hospital.

On admission the patient appeared well nourished; his face was drawn and the body surface cold. The abdomen was not distended. There was a lipoma as large as an orange in the median line, two inches below the umbilicus; it was partially adherent to the deeper structures. Abdominal tenderness was general, but was most marked in the umbilical region. No mass could be felt in the right iliac region. Pulse, 100, weak; temperature, 99° F. (rectum); respirations, 20. A high enema had no result. The vomiting continued. At first the vomited matter was clear green, but at 5 P.M. it contained flakes of a green color with a decidedly fæcal odor.

A diagnosis of intestinal obstruction was made and operation advised, but the patient refused to consent.

The next day the patient's condition changed rapidly for the worse. Temperature, 97.4 F.; pulse, not perceptible; respirations, 24. At this time the abdomen was greatly distended and there was general tympanites. The patient now desired operation, although he was informed that the prognosis was almost certainly fatal. The operation was performed at 10 A.M. A median longitudinal incision five inches long was made through the lipoma, and the peritoneal cavity was opened. A quantity of blood-stained serum escaped. The intestines were much distended, and a small amount of fibrin was observed on their peritoneal coat. The hand being introduced into the abdominal cavity, a constricting band was discovered, which was recognized as the vermiform appendix, stretched across the lower part of the umbilical region, and attached by its extremity to a loop of small intestine. The appendix was divided at its distal extremity between heavy catgut ligatures. The constricted gut was evidently the ileum, and was much congested. The abdomen was now thoroughly irrigated with decinormal saline solution, about one quart being left in the abdomen. The abdominal incision was then closed in the usual manner, and the patient was returned to the ward in a condition of extreme shock. Before the operation, and during the time the patient was in the operating-room, decinormal saline solution was injected into the subcutaneous tissues. After the operation large amounts of gas were expelled per rectum.

The patient died on the third day after the operation. An adhesive appendicitis had evidently occurred at the times of the attacks of "abdominal pain" previously spoken of. Had the operation for the relief of the obstruction been performed before the occurrence of general peritonitis, the prognosis might have been changed, as the patient's subjective symptoms were markedly relieved by the operation and the cause of the obstruction was removed.

The writer wishes to express his appreciation of the assistance of Dr. Charles E. Nammack.

A CASE OF LARGE UTERINE FIBROID WITH UNUSUAL COMPLICATIONS.

By CARL F. GISSLER, M.D.,

BROOKLYN, N. Y.

On May 10, 1897, Mrs. S——, aged fifty-three years, called on me for relief of a supposed uterine prolapse. On examination I found a large, solid, organized mass filling the vagina and protruding some two inches. Her menstruation had ceased seven or eight years ago. As the protruding mass was certainly not the uterus, a four-pronged volsellum forceps was applied with some traction downward with the left hand, and a beam of light was thrown upward from a parabolic gas-light reflector. A pedicle, six inches long by three inches thick, was seen attached to one side of the cervix.

On May 13th, a number of medical confrères being present, the parts were rendered aseptic, and the woman was chloroformed and a volsellum applied. At this time a dark red tubercle, a urethral caruncle, was noticed and snipped off with scissors. A female metallic catheter was applied, but, as it would not easily enter more than one-fourth of an inch, was laid aside. Then with curved long scissors and occasionally with the knife, the thick pedicle of the fibroid was severed. Very little hemorrhage followed this procedure, high up and in the dark under the guidance of the left hand. Some retractors were then put in and the stump was brought to view. It extended up into the uterus some two and one half inches, and its whitish-looking cut fibres were then again submitted to excision without much bleeding. A wick of gauze was left in the uterus after a thorough irrigation, and gauze was tightly packed in the vagina and the woman put to bed.

Two days later the gauze was removed, and this was followed by another hot irrigation and repacking with gauze.

From the fourth day on no more packing was done, but only hot injections were ordered three times a day. There was never any rise of temperature, and complete recovery followed as regards the fibroid tumor, and there has been no recurrence up to date, February, 1898.

The special interest in connection with this case was, however, an old vesico-vaginal fistula. As mentioned already, a metal catheter was tried and would not enter on slight pressure. On the day following the operation the urine was voided involuntarily in bed. A thought flashed through my mind: Did I injure her bladder? The catheter was again tried and a little more force applied, but it did not enter; neither did a fine metallic sound for more than one-fourth of an inch. The tissue in this short space on closer inspection looked extremely pale, more so than in an ordinary female urethra. It was degenerated from non-use. Immediately behind the symphysis pubis and

overlapped by an anterior transverse vaginal fold, I found a pinkish-looking orifice admitting a one-sixteenth-inch catheter into the bladder. After the fifth day the patient could voluntarily void urine. The fistulous opening seemed to functionate sphincter-like, or, what is more physiologically correct, the small, transverse, anteriorly placed, overlapping vaginal fold acted as a sort of valve under the will of the patient. At the time of the operation we were informed that a similar tumor was operated upon by two physicians, Drs. Spigler and Hergot, at Gibweiler, upper Elsace, ten years ago, and at that operation the bladder was accidentally injured in the anterior fornix of the vagina. It took some years perhaps for the insidious growth of the second cervical fibroid to develop. The existing fistula allowed the urine to pass by the fibroid, and the normal urethra atrophied into an impervious band. It was demonstrated during the week following the operation to some of the physicians who were present at that time. I think this case is of no small importance in a medico-legal light.

23 Kossuth Place.

REPORT OF A CASE OF GONORRHŒAL RHEUMATISM TREATED WITH INJECTIONS OF BICHLORIDE OF MERCURY.

By WILLIAM H. MARCY, M.D.,

BUFFALO, N. Y.,

SURGEON, WEST SHORE RAILROAD, AND RAILROAD MEN'S HOSPITAL, NEW YORK CENTRAL RAILROAD, ETC.

As a result of blennorrhœal urethritis, commonly and less frequently of a blennorrhœal ophthalmia or vulvitis, certain affections are observed to occur, which, when existing in the joints, bursæ, sheaths of the tendons, the eye, muscles, nerves, and fibrous tissues, are designated as blennorrhœal rheumatism. It is believed to be an infectious process, a wound infection, in which the follicular ulcers (gonorrhœal ulcers) in the posterior urethra are for the most part the point of infection. Taking such a position leads up to a belief in existing gonohæmia or pyohæmia, but, accepting such a belief, we must make it subject to three indications of the proof of any micro-organic origin of the disease: first, that one and the same form of micro-organism be always found in a given disease; second, that it be easily recognized morphologically by chemical relations and reaction to coloring-matter; third, that the disease be artificially reproduced in a healthy individual by inoculation with pure culture. Neisser, Bockhart, and others have carried out these conditions in so far as the urethral inflammation is concerned, but in the complication of a gonorrhœa we lack positive proof of the third condition. Very early in the history of the gonococcus as the cause of a specific urethritis, the conclusion was that this micro-organism must be held as the direct cause of its complications. Ehrlich and Haslund, after a careful study of the subject, denied the presence of the gonococcus in the joint effusions following gonorrhœa of the urethra or vagina. Kammerer, Hale, and others have found a diplococcus in the joint effusions, resembling somewhat the gonococcus, but not producing the necessary proof obtained from cultures. Many theories have been presented, but none thoroughly proven; but we must consider gonorrhœal rheumatism as an infectious arthritis due to a micro-organism, from which distinct pathological conditions of the following nature may arise: serous, sero-fibrous, sero-purulent, and purulent. The outcome of these may be either a complete resolution or an ankylosis of the joint involved. Statistics show that in 35 per cent. of cases there is recovery; in 65 per cent. motion is restricted or completely lost. The frequency with which the various joints are involved is, according to Nolen: knee, 43 per cent.; shoulder, 25 per cent.; hip, hand, and fingers, remaining 32 per cent. In the majority of cases it occurs during the first month, but may not occur until the second or third month.

After these introductory remarks, I wish to present the history and treatment of a case of gonorrhœal arthritis recently under my care.

Mr. C——, aged thirty-two, contracted gonorrhœa March 3d. He was treated by his family physician for three weeks. The urethral discharge at the end of this time was slight and of a milky character. He was suddenly taken with severe pain in the left knee, followed by swelling and fever. Applications were made to the knee, and internally he received colchicum-salicylate capsules every two hours; cathartics and alkaline waters were freely given. He gradually grew worse for fifteen days, the salicylates having no curative action. With the idea that he would receive better nursing, he was taken to the General Hospital for treatment. The salicylates were continued, and blue ointment was applied to the painful knee. The diet was principally milk with alkaline waters. No improvement took place. The knee was intensely swollen, the temperature remaining high. I was called to take charge of the case. The same diet was continued; the bowels were kept active with Carlsbad salts, and water was given freely. The iodides were tried, but nothing but morphine would quiet the pain, and quinine had only slight control of the fever. The temperature reached every night about 104° F., with excruciating pain. Something had to be done. Appreciating his trouble as a toxæmia, and having aborted a few cases of tonsillitis (which under other treatment had always terminated in suppuration) by the injection of bichloride-of-mercury (1 to 3,000) solution, I decided to institute the following treatment. The knee at this time was intensely swollen but contained no pus. I selected a hypodermic syringe of sixty minims capacity, tipped with a needle of sufficient strength and about one and one-half inches long. The syringe was partly filled with a four-per-cent. solution of cocaine. The knee was rendered aseptic. The skin was anæsthetized with a few drops of cocaine, and as the needle was inserted the parts were cocainized until the needle was introduced its full length without pain. I drew the piston, but found only a small quantity of fluid of a yellowish nature within the joint. The syringe was unscrewed from the needle, the latter being left still inserted. The syringe was then filled with sixty minims of 1 to 3,000 solution of bichloride of mercury, was reattached to the needle, and the solution injected. The needle was withdrawn and the point of insertion sealed with collodion. The results were as follows: The temperature, which had stood for weeks around 103° and 104° F., dropped to 99° F.; the pain that morphine would not quiet became easier. This treatment was kept up for three days, night and morning, with a temperature at about 99° F., when the injection was discontinued for two days, during which time the patient became worse, the temperature reaching 103° F. I began injections again, with the same marked improvement, and the patient made a rapid recovery. No stiffness followed and the patient to-day is as well as ever.

From a study of this case we may draw the following conclusions: that gonorrhœal rheumatism is surely an infectious disease, due to metastasis of micro-organisms to the joint involved; that it is a local trouble; that the toxæmia is due to the absorption of ptomains; and that if we can reach these micro-organisms direct and not use the circulation as a vehicle, the more brilliant will be our results.

1148 Main Street.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

DIPHTHERIA ANTITOXIN, REPORT OF THE CLINICAL SOCIETY'S COMMITTEE—SCOTCH MEDICAL OFFICERS OF HEALTH—THE "LANCET'S" SHORT STORY—THE ASYLUMS BOARD—LIFE OF STOKES—GORDON'S REMINISCENCES—SURGICAL TEXT-BOOKS—THREE ENTERTAINMENTS.

London, June 10, 1898.

The report of the committee on diphtheria antitoxin was presented to the Clinical Society at the annual meeting held on the 27th ult. This committee was appointed in 1895, and determined to conduct the inquiry as follows: 1. To test the effect of antitoxin on the mortality of diphtheria. 2. To analyze the evidence obtained as to the effects of antitoxin in proportion to the quantity administered: (*a*) on the course of acute disease; (*b*) on the complications and sequelæ. 3. To note any other effects of antitoxin.

The co-operation of hospitals was invited and eight hundred and thirty-two cases were analyzed and tabulated by a subcommittee. Out of these collected reports one hundred and ninety-nine cases had to be rejected from defects of evidence or imperfect statements, leaving six hundred and thirty-three for further analysis. The cases were grouped according to the seat of the membrane and the effects of the remedy noted as to mortality, extension of membrane to the larynx, paralysis, symptoms caused by the antitoxin, and conditions under which death occurred.

The general result of this important inquiry shows that in cases treated with antitoxin not only is the mortality notably lessened, but that in fatal cases life is prolonged. The injections may produce rashes, joint pains, and fever, but no other prejudicial effect after even very large doses. In support of this conclusion I add a few particulars as to the points investigated. As to mortality the cases were arranged in two series: one in which the whole of the antitoxin administered was injected within the first forty-eight hours of treatment; the other in which it was continued longer.

Of the laryngeal cases one-half escaped tracheotomy—a much larger proportion than under any other known treatment. Of the tracheotomies performed, only two were done after twenty-four hours from the first injection. Further, the mortality of the tracheotomies was only thirty-six per cent., which compares very favorably with a series of records from the general hospitals before the introduction of antitoxin and which amounted to 71.6. The effect of age seems much the same as under other treatment. The lessened mortality appears to depend on the lesser frequency with which the membrane extends to the larynx under the influence of antitoxin. The total mortality of the 633 cases amounted to 124=19.5 per cent., as against 29.6 in the hospital series before antitoxin.

The duration of life in fatal cases was prolonged, a fact to which the committee draws attention in reference to the occurrence of paralysis. As to this, the closest investigation failed to show any connection between the occurrence of paralysis and the amount of antitoxin injected, or the period of the disease when it was used. Rashes were observed in about one-third of the cases, chiefly erythematous or urticarial, but in no instance had they any bearing on the ultimate result. Joint pains were noticed in a few cases, nearly all of which had a rash and some fever. In some cases a rise of temperature occurred during convalescence, without either rash or joint pains. Suppression of urine was in the same percentage with and without antitoxin.

The report states that a very large proportion of the cases have been personally observed by members of the committee. We may therefore feel assured that it will receive the attention of all interested in the subject. On the motion of the president, the society unanimously passed a vote of thanks to the committee for its valuable services. The report of the council for the past year was then read, showing a membership of five hundred and eighty-eight and a satisfactory state of the finances. A general index to the first thirty volume of the society's Transactions has been issued.

The Association of Scottish Medical Officers of Health is issuing a memorandum on its duties and sphere of action under the new Scottish public-health act. The memorandum seems to be conceived in a reasonable spirit, and is likely to prevent friction between the M. O. H. and other medical men; it shows that the M. O. H. should start with the belief that practitioners' certificates are given in good faith, and it is no part of the officer's duty to review the attendant's diagnosis. A number of other points are considered in the memorandum, all of them in a similar strain, and its circulation is calculated to raise the society in professional estimation.

The Lancet has come out with a short story. The bald statement of the fact looks almost startling now it is on the paper, so explanation may be desirable. You know the great interest of your contemporary in the hospital Sunday fund and how for several years it has issued a special supplement for distribution in the places of worship on hospital Sunday. Well, that day is upon us again. *The Lancet's* twelfth supplement was issued last Saturday, to be ready for next Sunday, and this supplement, consisting of an earnest, well-reasoned appeal, supported by full statistics, winds up with the short story in question. It is intended to show how an annoying accident would be transformed into a tragedy if there were no hospitals. It is not easy to imagine the condition, but the simple story may catch some who shun the columns of statistics.

The extravagances and mistakes of the Metropolitan Asylums board have often excited comment and even indignant remonstrance. Even the local government board is expressing dissatisfaction and demanding information. When public indifference is once overcome, reform will be insisted on and the blame of the past awarded. The Brook Hospital expenditure is now said to exceed the architect's estimate by £70,000. The amounts that have been squandered on the hospitals of the asylums board constitute a scandal. Unless thorough investigation is made and some check to extravagance given, the government may have to reckon with widespread discontent.

The life of Dr. Stokes, by his son, has appeared in the "Masters of Medicine" series and gives an intensely interesting account of the great Dublin physician, his life and work. Any doctor who knows nothing about Stokes is very imperfectly educated.

Sir Charles Gordon's "Reminiscences" cannot fail to interest a large number of civilians as well as army surgeons, for he served in many countries from his assistant surgeoncy to the principal medical officership of Madras, and carried into all these countries an observant, scientific mind. His journey to Burmah with the Duke of Buckingham was the subject of a former volume.

Two new surgical text-books are issued here—"A Manual for Students and Practitioners," by W. Rose and A. Carless, both of King's College, and "Outlines of Practical Surgery," by W. Spencer, of the Westminster Hospital.

The Royal Society gave a *conversazione* on Wednesday which was quite a fashionable crush. It had been anticipated that Professor Ramsay would give a demonstration of the spectrum of the new element he has discovered in the atmosphere, and which he calls krypton, to signify that it has up to now been concealed. Would it not be more natural to give it a name signifying that at length it has been revealed? Of course you have heard of the discovery, and some of its characteristics have been described. It gives two brilliant lines in the spectrum; is a gaseous, non-atomic element, and estimated as present not above one in ten thousand volumes. The other scientific exhibits were numerous and extremely interesting.

The metropolitan branch of the British Medical Association gave a *conversazione* on Tuesday in the museum of the Royal College of Surgeons, at which some two thousand guests were present. The attractions of the great collections in the museum were reinforced by the band of the royal artillery, and the lecture theatre was given up to solos, quartettes, and humorous sketches.

Another *conversazione* was given on Wednesday by the Balneological and Climatological Association, when Dr. Poore gave an address on circumstances which influence climatic treatment, and Dr. Hedley showed a new form of stereoscope for exhibiting *x*-ray pictures in relief.

Three such entertainments in one week should be enough.

OUR PARIS LETTER.

(From our Special Correspondent.)

INFLUENCE OF THE SPANISH WAR ON THE PRACTICE OF MEDICINE, PHARMACY, ETC.—ALSO FELT AMONG ELECTRICIANS AND HYDROPATHS—FRENCH MEDICAL AND INSURANCE SOCIETIES, UTILITY OF—PROFESSOR PANAS AND DR. SCRINI SUBSTITUTE OLEAGINOUS FOR AQUEOUS COLLYRIA IN THE TREATMENT OF DISEASES OF THE EYE.

Paris, June 11, 1898.

The war between the United States and Spain has begun to make itself felt here in a professional way. Several of the leading American physicians in Paris have hitherto had a clientèle composed largely of their compatriots; there is now, however, considerable falling off in the number of those coming from America. People not knowing yet how long the war is going to last or how it is going to affect their incomes, remain at home. There is a correspondingly marked falling off in practices. The French consulting physicians and professors of the faculty are also beginning to feel it; whereas they were called in consultation almost every day or two before the war, consultations now with American physicians are becoming exceptional. The chemists and druggists, on their side, are complaining too that business is rather slack, the prescription department is not so active as it was this time last year, and the opportunities for giving professional advice as well as medicines at the counter are less frequent. Not that the Americans have "boycotted" French doctors or pharmacies, as the ladies have "boycotted" French millineries on account of Spanish sympathy, but simply because there is less travel to Paris and there are fewer visitors here than usual, on account of the Hispano-American conflict. Not only do fewer come here from the United States, but many of those returning home from different parts of Europe prefer to pass Paris by and sail from England, Germany, or Italy.

Electricians, hydropaths, and masseurs also come in for their share of the diminution in clientèle and deficit.

The combination of insurance with medical societies, by which they become, as the French say, a "work of aid," obtains perhaps to a greater extent in France than in other countries, and is another evidence of the thrift and wealth of the French people. It is a custom that might with advantage be imitated to a larger extent than it actually is in America. One of the more important of these in Paris is the "Mutual Medical Association of the Department of the Seine." By paying a tax of ten francs a month, any doctor of medicine practising in the department of the Seine may acquire the right to an indemnity of ten francs ($2) for every day of professional incapacity, either temporary or permanent, caused by illness or accident, no matter how long the duration. The aged, the infirm, and those entirely incapable of practising receive the same indemnity as in case of illness. In case of the death of a member of this medical insurance society, his widow or children are allowed an indemnity proportional to the importance of the reserve capital of the organization. Others of these societies are the Syndical Association of Foresight and Mutual Aid to French Physicians, of which Dr. Lannelongue is the president; and the Amical Association of French Physicians, whose objects and system of management are similar to those of the first named. These three have what is called their "siège social" in Paris, but similar societies exist in all the principal cities of France.

Dr. Panas, the eminent professor of diseases of the eye, proposes to employ in his clinic at the Hôtel Dieu collyria of oleaginous solution instead of the aqueous solutions he has hitherto used. Professor Panas has found that after a certain time aqueous collyria become cloudy and precipitate cryptogamic productions. Moreover, in order to instil usefully these collyria into the eye by means of a dropper, it is necessary to open wide the lids, which it is difficult to do when there is photophobia with blepharospasm, especially in children.

Oily solutions possess the advantage of remaining aseptic when they are well prepared and are not irritating to the external membranes of the eye, as demonstrated by the work of Dr. Scrini, the pupil of Professor Panas. The most interesting collyria from a practical every-day standpoint are those of atropine, eserine, pilocarpine, and cocaine. As the salts of these alkaloids are only slightly soluble in oil, recourse is had to the bases, which are soluble, and of which solutions are made of one per cent. for atropine and eserine; of one to two hundred per cent. for pilocarpine; and of two per cent. for cocaine. Olive oil should be preferred in making them, first freed from fatty acids by washing in alcohol at 90° F., then sterilized by heat at 120° F. It is subsequently allowed to cool to 60° F., and the organic base is added, which dissolves therein completely. The collyria prepared in this way retain their transparency and sterility a very long time, during which they undergo no chemical decomposition, nor do they produce any alteration upon the epithelium of the cornea or conjunctiva. They should be applied on the extremity of a small glass blunted spatula, dipped in the liquid and passed along the palpebral slit slightly opened.

THE BUCCAL ERUPTION OF MEASLES.

To the Editor of the Medical Record.

Sir: In reading my Medical Record of June 11th I came across the article by E. Libman, M.D., "The Value of the Buccal Eruption of Measles for Early Diagnosis," in which he gives the credit of the discovery to Dr. Koplik, of New York City. In February or early March, 1881, my attention was called to the buccal eruption as a diagnostic sign of measles by a

lady in Carroll County, Ind., and I have verified the truth of it in a number of epidemics since then. In fact, it had become a habit with us country physicians to inspect the buccal mucous membrane for the signs of measles years before Dr. Koplik ever published a word on the subject. GEORGE R. CLAYTON, M.D.

MONON, IND.

THE DIFFERENT FIELDS OF OPERATIVE SURGERY AND GYNÆCOLOGY IN EUROPE.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR: Buda Pest is one hundred and seventy-three miles southeast of Vienna, and from the former place I went five hundred and seventy miles northwest to Munich, a city of nearly four hundred thousand inhabitants. The altitude is seventeen hundred feet, the sky pleasingly clear, and the air pure. The national beverage of Germany is made here in its greatest perfection, if not greatest quantity, and he who will call often enough for his "Münchener," and pronounce it correctly, will pass current anywhere in Germany, especially in Berlin.

Munich is the capital of Bavaria, and of course the language of the place is German. The university here, I am assured by one of its professors, has a larger number of matriculants in the summer term than that of Berlin. The hospitals are large and the clinical material is abundant.

Winckel, whose work is a recognized text-book in many medical schools of America, is professor and director of the Frauenklinik, where he operates daily, except on Sunday and Saturday, from 8 to 10 A.M., and lectures from 10 to 11 A.M., and from 11 A.M. to 12:30 P.M. On each day six students, whose names were called the day before, come into the arena, each having a cot with a patient, and in succession give the history, make the diagnosis, and prescribe treatment, all in answer to the professor's interrogations, for the benefit of all present in the amphitheatre. Winckel refuses to take any one into his class for less than six months.

Since July, 1897, he has operated after Mackenrodt in all cases of carcinoma of the genitalia, discarding the knife entirely. Winckel is probably more than sixty years old; he is short and stout; has a full beard closely cropped, and brown hair; and is most serious in all his acts and language, never suggesting levity or a smile.

Angerer is perhaps twenty years younger than Winckel. He is strikingly tall, has glossy black hair and beard, black eyes, and is most suave of manner. He is professor of surgery and director of the same clinic in the hospital. He is a speedy and fearless operator and has abundant material. Besides the university hospital, supported by the government of Bavaria, there is an addition adjoining (though this is entirely supported by the city) that has communicating halls; and all is under the direction of Angerer. There is a total of three hundred and twenty beds, in which were thirty-nine hundred and ninety patients in 1896. In the same year there were nearly six thousand ambulant patients. There are fifty nurses, mostly "sisters." This title is given only to such as are Catholics and members of a religious order which gives them a distinct title and garb. They attend operations in the amphitheatre, handing instruments and surgical accessories; they perform the same services in operations on the genitals of males as in other cases. In hernia cases Angerer cuts after Bassini exclusively. Subcutaneously he uses catgut and interrupted sutures, while for outer stitching he uses silk and continuous suture. He is one of the very few continental surgeons who prefer ether to chloroform. Angerer was appointed to his present position seven years ago. He is a man of fine presence, affable, gentle to patients, and considerate to assistants—the latter a rare characteristic in a German professor. I find him the most genial German of that title thus far seen in any clinic.

In the land of Baden, and almost due north from Munich, two hundred and twenty-two miles, is the celebrated city of Heidelberg, with its historic castle and well-known university. The city is built on a long and narrow bluff of the Neckar, and forms the key to the mountainous valley of that stream where it opens into the plain of the Rhine. The city has only thirty-five thousand people, but the university and its hospitals, supported by the government of Baden, are ample in size and material for educational purposes. The hospital for Frauenkrankheiten has obstetrics and gynæcology within the same building, over all of which Professor Kehrer has been director since the completion of the hospital in 1886. He is an elderly gentleman, and an instructive teacher and operator. There are separate rooms for laparotomy and vaginal operations. There are twenty-five beds in the gynæcological department, in which six hundred and three patients were treated in 1897. In the same year there were nine hundred ambulant patients. All the latter and obstetrical patients are treated without pay. There were four hundred and twenty-one births in the hospital in 1897. There are no free gynæcological beds in this hospital. Patients of the first class usually have a room for each and pay 7½ marks a day; those of the second class pay 5½ marks a day, and are placed not more than four in a room; those of the third class pay 2 marks a day.

There are two resident assistants and one volunteer. The latter pays 40 marks a month, which secures him residence within the hospital and everything furnished, including board and washing. Professor Kehrer is furnished residence and living in a separate building on the hospital grounds, a few hundred yards from the hospital, with telephone connection, so that he may be called promptly when needed.

In closing the incision of cœliotomy Kehrer sews the peritoneum first with continuous catgut, while the inner surfaces of this membrane are held up and pressed together along the cut edges, and second, with silver or silk interrupted sutures. He sews with the novel method of having a needle at each end of the suture and working from within outward. He passes first through the fascia one needle on each side; then, crossing the suture like an X, he penetrates fat and comes out through the skin, about half an inch from the cut edge. Whether he has silk and ties or silver and twists, neither fastening is made over the incision, but carefully on one side, where the suture emerges and still outward from the puncture. When wire is used, the twisted ends are further turned away from the incision over a soft pad on the outer side and away from the wound. Kehrer places stress on the importance of not operating on a woman for from three to five days after she enters the hospital, that she may become accustomed to her surroundings. Two days before operating he gives her a general bath and repeats this the next day, and on the morning of operation, if vaginal, a sitz bath is given; if a laparotomy, the line of proposed incision is shaven and scrubbed with a brush, first, in soap and water; second, in alcohol; third, in sublimate, 1–1000. For those concerned in the operation the same precautions as to the hands are observed, except that the first step is longer continued; in addition the principal and all assistants must rinse the teeth, mouth, and throat thoroughly with cognac. On seeing Professor Kehrer spit this out I assured him that in my country very little cognac is spit out of the mouth. He asked me, excitedly, to watch his first assistant, who expectorated no cognac, though he rinsed with the painstaking method of his

chief. The professor thinks it very important to disinfect the mouth immediately before laparotomies, and believes cognac to be the best disinfectant for this purpose.

The originator of the Czerny suture is professor of surgery in the University of Heidelberg and director of the hospital of the same designated branch; he does considerable gynæcological work but no obstetrics. About two-fifths of his patients in the hospital are females.

I was interested in seeing this eminent surgeon and accomplished diagnostician in doubt as to the diagnosis of a decidedly enlarged liver. The patient was a man of fine, delicate features, and by occupation a "Künstler," aged forty years. Between hydatids and cirrhosis Czerny inclined to the belief that it must be the latter, assuring me that in the twenty-one years he had served in his present position he had not seen a case of echinococcus in Baden. He finally decided to operate, and made an incision about three and one-half inches long, close to the inferior border and parallel with the lower rib. When he got his fingers between the lobes of the liver he found fluctuation and did paracentesis, by which he got twelve centigrams of clear fluid containing echinococci, revealed only by the microscope. Czerny retained his belief of freedom from this form of entozoa in the country of Baden, as his patient was an artist who had lived in Italy, Paris, and Copenhagen. In Austria and Hungary this is a common disease.

Czerny has large grounds, over which are scattered seven pavilions, surrounded with trees and ample lawns. There are in these pavilions two hundred beds, in which twenty-five hundred patients are treated yearly; also seven thousand ambulant patients, making a total of fifty-five thousand days annually. In 1897 Czerny did two hundred and twenty laparotomies, not counting hernia operations.

In the operating-room there is ideal light. About half of the amphitheatre roof is skylight and at the side of the arena there is a window, about twelve by twenty feet, overlooking the Neckar from a high bluff, where it will be free forever from obstruction of house or tree.

Czerny has three resident and three volunteer assistants. The latter pay 40 marks a month each for living in the hospital, having everything furnished them. They assist daily at operations, the same as other assistants. There are twenty-five sisters, who are skilled nurses, and seven in training in the surgical department. Czerny is perhaps sixty years old. He has the stature, beard, chin, eyes, and features generally of ex-President Harrison, his nose being a cross between that of Harrison and that of the late Roscoe Conkling. To such as believe men can become great only in great cities, Czerny is sufficient answer. Among the German-speaking people no surgeon is more widely known or more esteemed by other surgeons. Only a short while before I was at Heidelberg he had been in Constantinople as consultant in the family of a pasha. When I asked Czerny if he thought Heidelberg a large enough city for a surgeon whose name is equal to the greatest in Germany, he answered jocularly, "We care more here for a great name than for a great city," and left me guessing as to whether he was alluding to Czerny or to Heidelberg.

Slightly south of west and four hundred and ten miles from Heidelberg is the metropolis of continental Europe, the luxuriant city of Paris, with its two and one-half million inhabitants, who are so entirely French in their railroad stations, post-offices, street conveyances, and restaurants that it is impossible for one who cannot speak their language to make himself understood. With a slight knowledge of this language one learns it much more rapidly than he learns the German when living among its people.

Paris is a city of hospitals, it having twenty supported by the public, with an aggregate of twelve thousand beds, from which are discharged annually about one hundred and ten thousand patients, of whom forty thousand are women. The annual average of deaths in these hospitals is seven thousand men, five thousand women, and three thousand children. The Assistance Publique expends annually 36,000,000 francs on benevolent institutions, which assist about four hundred and sixty-seven thousand persons.

Hospitals here are not conducted with the same regard for specialism as in other parts of the continent. Insane, incurables, and invalids of all sorts enter into the sums total of beds of almost every hospital. In the hospital where I had expected to see gynæcology practised more exclusively than in any other public clinic of Europe, an amputation of the upper third of the humerus for sarcoma was the first operation I witnessed, and the last was the removal of the superior maxillary for carcinoma—the latter patient a male.

The clinic of Pozzi I visited shortly after my arrival. This accomplished author is tall, has black hair and eyes, closely cropped beard, intellectual face, and is in middle life. He has a large class of students and nurses, male and female. Instead of the Paquelin he uses a heated iron in vaginal operations, and even intra-uterine.

One of the brilliant operators of Paris is Doyen, who is regarded as a general surgeon, although about half his work appears to be gynæcological. He resides an hour or two away from Paris, and is irregular as to days, hours, and places of operations. One needs to be long in Paris to see much of this father of methods and instruments, many of which bear his name.

Richelot is ostensibly a gynæcologist, but, like other Parisian operators, he appears to cover the general domain of surgery. He has unlimited material at the large hospital of St. Louis. While he does not pose for much rationalism or so-called brilliancy, he is a conscientious worker and a prudent observer, with a marvellous memory of the mistakes and follies of men in his line. He has doubtless had forty years' experience in surgery, and I find his clinic well attended by Americans. Before entering upon intrapelvic operations per vaginam he washes this channel with a brush having bristles on both sides and a long stout handle, using soap and warm water. The uterine canal is cleansed with glycerin and creosote, thirty per cent. of the latter. He does hysterectomy by colpotomy and by cœliotomy in about equal proportions.

The most likable companionship I formed while abroad, that with Segond, was the most intimate and lasting. I gave him gladly four-fifths of my entire time in the hospitals of Paris, and saw him operate when blood flowed and spurted, but never saw him irritable or severe in any remark made to an assistant or attendant. A child playing in sand manifests no greater happiness than does Segond while operating, though I have seen him do five major operations in three hospitals within a day. When a clamp slipped off the uterine artery and blood came with the rush and noise of a hydrant while he was doing a vaginal hysterectomy, he placed his thumb on the iliac artery within the pelvis, turned with a smile, and exclaimed "All right!" with the cuteness which a Frenchman's English alone can express, reapplied the clamps, and completed the operation without the loss of much time; and the patient got along as well as if nothing had happened.

Like his old master, and for long his colleague and friend, the late Péan, Segond is loath to do a laparotomy, preferring when possible the vaginal route. He is a typical Frenchman, and with the French instinct reverences the symmetry and beauty of the pristine

female form, and hesitates to mar it with even a visible scar. When he is compelled to do a cœliotomy he stitches through all the abdominal tissues, to avoid making much of a scar. For this his only suture is silver, which, like Kehrer, he twists carefully down one side, over and outward from the emergence of the suture, which is further bent outward over a pad.

When his colpotomy is for oöphorectomy he does not care to save the uterus. He says, "A uterus without ovaries is like a gun without powder." Conversely, when the hysterectomy is by the lower channel he is conservative as to ovaries, believing with Polk and Pryor, of New York, that the danger of sepsis from the ovary is infinitely lessened, whether left in part or in entirety, by reason of the natural drainage. He also values the chances of retaining plump breasts, round limbs, and general female attractiveness.

Segond never uses sutures in doing vaginal hysterectomy; he always uses clamps. He packs the pelvis with sterilized gauze, which is done up like a roller bandage and charged with iodoform powder for a distance of perhaps two feet from one end, which portion he packs carefully against cut surfaces, the rest being used to fill any vacant space and to wrap around the steel instruments, to prevent sloughing of mucous membrane.

For a multiform fibroid or a very large fibromyoma Segond will do a cœliotomy, and in the former type he will break adhesions of the smaller projections with his hands, and then, with an instrument of his own invention, resembling a corkscrew of colossal size, fastened deeply into the centre of the tumor, he pulls this out of the abdominal cavity and completes the removal with marvellous rapidity, seldom requiring more than fifteen minutes. I have seen him throw away such a growth in ten minutes after his knife had first divided the skin of the abdomen. Myoma requires perhaps twice the length of time, but by his method of peeling adhesions away from the tumor with the finger nails—the nail side of the thumb and fingers against the tumor—and clamping off vessels until after the neoplasm is removed, the operation is quickly done compared with the usual method of ligating, etc. Like Doyen, he believes the shock incident to the removal of whatever the surgeon goes after is better borne in the early part of the operation, and it ought therefore to be accomplished as quickly as possible, leaving the ligating of vessels, clipping, coapting, and sewing as the finishing part of intra-abdominal operations.

Perhaps no other operator removes per vaginam more fibroids or any of larger size, and here Segond has the same kind of a corkscrew but of smaller size, and with it a double-edged knife curved on the flat. This knife has a long handle, but the blade, sharp-pointed, is precisely the same in length as the spiral part of the corkscrew, thus enabling the surgeon always to know that his knife is not deeper than the corkscrew, the latter pulling the growth so tensely that the danger of going beyond the neoplasm is almost *nil*. Morcellations are thus done deftly and quickly, often in less than half the usual time of other methods. I witnessed removals of mixed tumors. In one case the inner portion was of the color and consistence of soft veal, while the outer shell, of about two and one-half or three inches, was more like cartilage. For myomectomy or morcellation I have seen nothing so practical as Segond's corkscrew. In vaginal hysterectomy and colpotomy for any purpose, Segond is easily the cleverest operator I have seen in any country.

In Paris all surgeons whom I saw wore long finger-nails, some having them cut to a long sharp point, but in preparing for operations great pains are taken in cleansing and purifying with chemicals. Richelot and Segond have the same process, viz.: First, scrubbing with brush in soap and warm water; second, washing in pure alcohol; third, in permanganate of potassium, 1 to 100; fourth, in bisulphate of sodium, saturated solution; fifth, in sublimate, 1 to 2,000.

Nearly two hundred miles northeast of Paris is the interesting city of Brussels, the capital of the most populous country of the world. The city has about six hundred thousand inhabitants, is the home of the King, and has a university with about one thousand medical students. The more cultured Belgians speak preferably French, though the masses speak Flemish.

About three miles from the centre of the city, behind and below a large church on an obscure street in the suburbs, is a two-story building of rough brick, hard against the street, the exterior being as unpretentious as is the location. It is two hundred and eighty feet long and about forty feet wide. Along its entire length at the rear there is a garden of flowers, trees, and walks of most inviting character. Inside on the second floor are spacious rooms with expensive fur rugs and luxuriantly furnished rooms, each containing one large bed, and in one corner of the room, behind a partition wall, a small lounge. On this a nurse sleeps the first three nights after operation on the occupant of the room, who is a patient of the first class, treated by the well-known gynæcologist Jacobs. He is the owner, proprietor, and operator of this hospital, which he began building when he came here in 1891, by erecting about one-third of the present structure and subsequently adding to each end as his increasing reputation and *clintèle* required. There are now forty-two beds for patients of three classes. Those of the first class, always one in a room, pay 18 to 21 marks a day; those of the second class, not exceeding four in a room, pay 5 marks a day. Both classes pay besides for operation. Those of the third class pay nothing for operation and are kept free of charge in the hospital. Jacobs receives nothing from the city for their keeping. For these there are two wards on the lower floor, one having eight, the other ten beds. He treats about four hundred patients yearly in his private hospital, averaging two hundred laparotomies and one hundred colpotomies.

The operating-room is on the upper floor, has an abundance of light, is finished with glazed tiling, cement, paint, and polish. The operating-tables are of brass, each surrounded with a brass railing, at opposite ends of the long room, one being for abdominal, the other for vaginal operations. The latter has two brass plates, shaped to fit the hips, with an open space between for débris to pass down into a large brass bucket over a sliding plate of glass. No rubber hip pad is needed here. Jacobs tells me the late Professor Lusk ordered one of each of these tables, which are manufactured in Brussels and cost from 500 to 700 francs each. Everything within the operating-room and hospital is practical and nothing incomplete; much is elegant. Jacobs is not large of stature and is strikingly young in appearance, reminding one of the brighter advanced assistants one sees often in Germany, from thirty-two to thirty-five years old. Except for a long mustache of dark sandy shade, worn after the fashion of the German Kaiser, his face is clean shaven. He is of German birth and education, but speaks French, English, and of course Flemish. Jacobs is cosmopolitan, having made repeated visits to America and done forty-three hysterectomies on our side of the water. The iron-dyed silk manufactured in Philadelphia is the only kind he uses. Before operating he cleanses the parts, the same as his hands, with a brush, using, first, green soap and warm water; second, saturated solution of biborate of sodium and carbonate of ammonium; third, alcohol; fourth, formalin, three or four per cent; fifth, ether. Like Dollinger and Segond, he burns alcohol in the trays for his

instruments and the receptacles for pus before using them. He prefers the vaginal route for hysterectomies when practicable, except for carcinoma. More than a year ago he expressed himself adversely and predicted that this will soon be an operation of the past, basing his opinion on personal experience. To me he said: "I believe, with Kelly, that removing a carcinoma of the cervix or uterus is not curative without the removal of the infiltrated adnexa, and this can be done only through the abdomen, where one can see the parts."

It is now fifteen months since he began doing laparotomy exclusively for carcinoma of the uterus, and he has forty-six cases on his record. All the patients are living and none give indication of a return of the disease. It is a year and nearly a half since he discontinued the use of clamps for vaginal hysterectomy, and he has in that time not had a case of sepsis, although he has removed forty-two fibroids per vaginam since his change in technique. In doing abdominal section he stands on the right side of the patient and cuts from above downward, placing the woman in the Trendelenburg position after reaching the peritoneum. On exposing the fundus of the uterus, he grasps the ovarian artery and ligament between the thumb and finger, severs them with scissors before applying clamp or ligature, turns the cut edge so that he can see the end of the severed artery, and then applies a small clamp accurately on the vessel. Before the clamps are removed all blood-vessels are ligated. He was less than twenty minutes in removing the uterus in the first abdominal hysterectomy I saw him do. He has only two assistants besides the one giving the anæsthetic; one helps at the operation, the other threads needles and hands instruments. Jacobs does no Alexander or ventral fixation. For retrodisplacements with adhesions he will massage two or three months if necessary. Other means failing, he will fasten the fundus to the peritoneum.

From Brussels *via* Ostend, the Channel, and Dover, it is two hundred and twenty-two miles to London. Here we have a different condition of things as to charities. The hospitals, I believe, receive no government support and comparatively little municipal, they being almost entirely supported by voluntary subscriptions, donations, and bequests. An accomplished chronicler, writing for one of the leading American medical weeklies, gives these good people credit for paying in this voluntary manner five million pounds sterling annually—more than £1 for each man, woman, and child in the capital. As this was written only about a year ago, I inquired if it could be possible, and found such an amount so contributed; but the list of institutions thus assisted includes many charities not hospitals, comprising "hospitals, dispensaries, asylums; bible, tract, missionary, and district visiting societies; provident homes, orphanages, etc." The regard for hospitals and the generosity of the Londoner are suggested in what is accomplished in one day. There is a "Hospital Sunday," on which collections are made in all the churches of the city for hospitals. This produces a yearly revenue of about £45,000. Non-churchgoers have a similar opportunity offered them on "Hospital Saturday," when about seven hundred and fifty ladies stationed at street corners receive contributions, thus realizing about £7,000, while collections made in the workshops at the same time add £13,000.

The required time of attendance at the medical schools before the student is eligible for examination for his degree is five years, and each school appears to have a large hospital for its exclusive use. This I found true at St. Bartholomew's, St. Thomas', Guy's, the London, and King's College. St. Thomas has the finest structure of all the London hospitals. It is beautifully situated on the bank of the Thames, directly opposite Westminster Palace. It has two hundred and fifty beds, from which are discharged yearly from six thousand to seven thousand patients. Professor Cullingworth has the gynæcological department, with twenty-one beds, all in one ward, in which are treated about two hundred and fifty patients annually. Sixty laparotomies were done last year. Vaginal hysterectomy is done only for carcinoma. This he, like all operators in London, does with the knife, believing the Paquelin has not come to stay. Pus he evacuates mostly through the belly, when at all, but he is slow in cutting for this. Cullingworth does ventral fixation by including the fascia with the peritoneum, using catgut.

In London I noticed greater liberty taken with the endometrium than at clinics in other cities, in the use of sounds, caustics, etc. A favorite application after curettage is Churchill's tincture, but often a stronger preparation of iodine is used—iodine and equal parts by weight of potassium iodide, spirit, and water.

Cullingworth has lately been making experiments with douches of simple warm water after curettage, having his chief nurse especially observe the comparative amount of discharge, and she has uniformly reported less when the simple douche was used. During the first clinical hour he made six examinations and used the uterine sound in five, by which he carefully noted the length and direction of the uterine canal, these being his chief reasons for using this erstwhile popular instrument. He uses Robert Barnes' old wooden table, which admits of no Trendelenburg position; but a new operating-room is being built with a Trendelenburg table.

At Guy's Hospital there are about six hundred students. There are no obstetrical beds, but there is an out-patient department which delivers about three thousand children yearly. Six undergraduates reside within the hospital to attend to this work. They may call regular internes to assist in difficult cases, and internes may in turn call their chiefs when necessary. There are nineteen gynæcological beds, which will be increased to forty in the new building now nearly completed. Drs. Galabin and Horrocks are chiefs of this department and come twice a week to operate, one beginning at 2 P.M., the other following at about 3 P.M. The operating-rooms, like the wards, are heated by open fireplaces, which are prolific of more smoke than heat. The floor is of wide boards, soft wood, and there is considerable furniture in the operating-room, pictures, etc., on the wall. Galabin does not remove fibroids unless the tumor is very large and the woman very young, because after the menopause the tumor will diminish and soon cease to be serious, and for this reason he will establish premature menopause by oöphorectomy and leave the tumor alone. His colleague takes the opposite view, preferring to remove the neoplasm and leave the ovaries in the pelvis, that the breasts may remain plump, the limbs round, the abdomen not take on fat, and the face not lose its feminine charm.

At the Samaritan Free Hospital I learned that the lamented T. Spencer Wells had been a surgeon in the Crimea, after which he became general surgeon to this hospital; there was a separate gynæcological department with which he was not connected. The same arrangement exists still, and his successors, like Wells, do general surgery, but have all laparotomies assigned to them, the gynæcological department doing no laparotomies, though it does do vaginal hysterectomies, which appear to be performed only for cancer. They evacuate pus through the vagina when they can get fluctuation from below. One of the surgeons of the Samaritan Free said to me: "Spencer Wells reduced the mortality of ovariotomy from one hundred per cent. to thirty-five per cent. before Lister taught us how to

be clean. After that Wells brought it down to seven per cent., and now we have it down to three per cent. in this hospital."

In London comparatively little chloroform is given, ether being more in use than even in the North and East in the States. The A. C. E. mixture is preferred by many. At the Samaritan I noticed the giving of a combination of nitrous oxide with ether. It acts nicely and is highly extolled.

The surgeons of London, like those of Paris, wear long finger nails, and, like their French neighbors, operate in chillingly cold rooms. Except for the smoke, I could have been comfortable in the London operating-rooms with my overcoat on. Open and smoking fireplaces did not disturb the Londoner—smoke and fog perhaps never do.

From London I was taken by rail nearly eighty miles to Southampton, where I boarded the *Kaiser Wilhelm der Grosse* for New York, reaching Sandy Hook in five days and eighteen hours—the greatest speed ever attained by this or any other ship.

At Washington I recall the ten thousand miles travelled from summer until summer, and that my route included cities farthest advanced in art and many of the sciences—among cities having the wealthiest inhabitants known to man, cities the largest on earth. But as I travel up toward my domicile I am impressed with the pleasing certainty that here are the widest, smoothest, and cleanest streets of any city and draped with more leafy trees, and here are more numerous parks in verdure, flower, and fragrance than elsewhere, and over all I hear the rustle of the whitest of gowns, which were to me never so enchanting as now. Here on the banks of the wide and placid Potomac, with its pure air and sky, is the capital of the happiest and greatest of all peoples, and this capital I write down as easily the lily of the cities of the world.

J. Preston Miller, M.D.

1621 Fourteenth Street, N. W., Washington, D. C.,
May 18, 1898.

Medical Items.

Diphtheria in Holy Water.—Professor Vincenzi, of the University of Sassari, has investigated the holy water from "one of the most popular churches" of that city, with the following results: A single drop taken a few hours after the water was renewed and spread upon gelatin yielded in forty-eight hours about twenty-three hundred and fifty bacterial colonies, including besides those common in water bacillus tetragenus and staphylococcus albus. This drop was taken on a Saturday evening, when the water had been little used. The next evening, after numerous and crowded services, each drop of the water tested yielded innumerable colonies. Among these were numerous specimens of the bacillus coli, and others which Professor Vincenzi identified with the bacillus mucosus of Abel, believed by some to be the exciting cause of coryza. But the most important discovery was that of bacilli which in microscopic appearance, result of cultivation, and action on animals were, according to our author, undoubtedly identical with Loeffler's bacillus diphtheriæ. Four cases of diphtheria were notified at Sassari while these investigations were proceeding, and, it being the custom there for persons to touch their lips as well as other parts with holy water, the possibility of infection is obvious. "The notable number of colonies of bacillus mucosus perhaps stands in relation to the fact that contact between fingers and nose is frequent, whence it is not improbable that the bacilli are directly carried into the holy water." The bacillus coli, though possibly directly introduced, was, according to Professor Vincenzi, probably present in the church dust, which, he remarks, was copious.—*Archivio per le Scienze Mediche.*

The Liquefaction of Hydrogen and Helium.—The scientific world was thrown into a great state of excitement last week by the announcement that Professor Dewar, of the Royal Institution, had at last succeeded in liquefying hydrogen and helium. The event is regarded as one of the very highest scientific importance. Many attempts have previously been made to liquefy hydrogen, but hitherto without success, the great difficulty being the extraordinary degree of cold that is necessary for the operation. It is difficult for the untrained mind to conceive the temperature at which hydrogen liquefies. It is not very far above that of space, or minus 273 C. It is stated that it is the lowest temperature yet observed. To produce such a temperature very elaborate apparatus is required. In no place on the face of the globe is there to be found so low a temperature as in the vat in the laboratory of the Royal Institution. What the scientific results of Professor Dewar's discovery will be, it would be hard to predict, but it will undoubtedly prove of enormous importance in placing a new and potent instrument in the hands of scientists which they have hitherto found lacking. All Englishmen will rejoice that the demonstration that all gases can now be liquefied adds another to the long roll of illustrious discoveries which already stand to the credit of British science.—*Sanitary Record.*

Even Temper Necessary to a Successful Physician.—I suppose the most obvious quality that a would-be successful medical man should have is the control of temper. No doubt a certain section of humanity can make allowance for a bad temper, and a smaller section seems to like being abused; but I doubt if any one who has a bad temper can say he never lost a patient by it, and I will venture to say he must have frequently blundered in diagnosis simply by reason of his temper. How often have we to elicit the truth from a person who with all the will in the world is unable to undergo a cross-examination. The poor and uneducated are not well able to clothe their thoughts with language; they are also fond of lugging in big words, which they employ wrongly, and of course they misunderstand long words if we employ them. We thus create a situation which demands patience. —Dr. Mahomed in the *Medical Magazine.*

The Frugal Spanish Soldier.—According to an English journal, the Spanish soldier is a frugal liver, his commissariat allowance being two meals a day—one at 9 A.M., the other at 5 P.M. In some corps coffee and soup are served out in the early morning. A pound and a half of bread a day constitutes the government ration; any food beyond this must be bought by the private at the canteen. He gets little meat, and keeps in excellent condition on a chunk of dry black bread, a little oil, and a clove of garlic a day. If to this he can add a pint of wine, which tastes like vinegar and water, he feels happy. There is one thing he cannot go without, and that is his cigarette.

Stature Statistics.—The different countries of Europe vary greatly in the average stature of their people. The Scotch are the tallest, averaging 5 ft. 10 in., on a level with the Polynesians and Armenians. At the other extreme are the southern Italians, French, and Spaniards, all the shortest people, except the dwarf tribes of Africa. The average height in Ireland is 5 ft. 9 in.; in England and Scandinavia, 5 ft. 7 in.; in Wales, Germany, and Denmark, 5 ft. 6 in.; eastern France, 5 ft. 5 in.; Spain, Switzerland, northern and central Italy, 5 ft. 4 in.; Portugal and southern Italy, 5 ft. 3 in.

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Original Articles.

THE MISUSE OF COLOSTOMY.

BY CHARLES B. KELSEY, M.D.,
NEW YORK.

IT is now about fifteen years since Bryant, in a strong article in the *British Medical Journal*, called attention to the futility of all the usual methods of treatment of old and incurable non-malignant ulceration of the rectum, and advocated colostomy as the proper therapeutic measure for its relief.

The condition is that one so generally known as "syphilitic stricture" in either sex, and its real pathology need not be entered upon for the purpose of this article. The chronic inflammation with its thickening and contraction, and the consequent pain, tenesmus, discharge, and emaciation, are familiar to all. Whether the disease in any particular case be a proctitis due to catarrh, dysentery, tuberculous deposit, or venereal disease, makes no difference in the treatment now to be advocated as a substitute for that advised by Bryant.

Bryant's advocacy of colostomy as the proper treatment in all these cases could not, in the light of the surgical remedies then at our disposal, fail to carry conviction; and his ideas were enthusiastically adopted by myself and advocated to the best of my ability. The advance was bold and a little startling, inasmuch as at the same moment it relegated to the past all our former methods of treatment, such as dilatation and division of the stricture, and substituted for them an operation at that time rare and regarded with great aversion both by the profession at large and by the laity.

The teaching has borne full fruit. The profession has adopted his treatment almost as a routine practice, and what was before a surgical curiosity has become perhaps too sadly common—that is, men and women with a permanent artificial anus.

And yet the treatment was never an ideal one. It is never curative, any more than dilatation and incision had been before it; but it gives relief, and it was better than anything else known at that time. But the relief is only partial and at terrible cost in deformity and future comfort. The patient gains in health and strength from relief of pain and tenesmus, but the disease is still there, still continues to discharge pus and blood, and often, as a result of the operation, from two openings instead of one.

Such a condition is far from a cure, and does not to my mind appear as a great surgical triumph. The artificial anus is generally a source of constant annoyance and requires constant attention. The bowel is liable to prolapse, ventral hernia as a result of the incision is not uncommon, and erosion or ulceration of the exposed mucosa is often present.

When a patient knows that he or she is dying of a cancer, the relief given in this way is gratefully accepted; but when, on the other hand, patients find themselves doomed to this sort of thing for perhaps a long life, and for a condition which was not in itself fatal, they are apt, after the first relief has been gained, to ask if something better could not have been done or may not yet be done. I have had many such applications from those upon whom the operation has been performed—often, I cannot but think, too hastily and without sufficient consideration.

Since Bryant wrote, great advances have been going on in the surgery of the pelvis, and the simple question now is whether in all this class of cases we cannot take another step forward by substituting complete extirpation of the diseased bowel for the formation of a permanent artificial anus as recommended by him at that time.

It must be remembered that at the time Bryant wrote extirpation of the rectum was in its infancy. We had only the old operation from the perineum upward, attended by its well-known hemorrhage, shock, general absence of precision, and great mortality—an operation never undertaken except in cases of cancer, and not particularly successful in these.

Since then Kraske's operation from behind has grown to full perfection of technique, and has become as much an operation of precision as abdominal hysterectomy, attended by no greater hemorrhage or shock, and by no greater mortality at the hands of experienced operators. Nevertheless this fact has as yet made no impression upon the rule of treatment of these cases with the majority of the profession, and patients who, I cannot but think, might much better have been cured by excision of the diseased part are daily given up as incurable and subjected to colostomy as a palliation.

I have been as pronounced an advocate of colostomy as any man could well be, both in my practice and teaching, and this because in inoperable cancer of the rectum it is simply invaluable as a therapeutic measure; but I have come to limit its applicability to inoperable cancer, and in all other cases, whether of malignant or non-malignant ulceration, to recommend a direct attack upon the disease itself through the posterior incision. And this is the rule of practice which I believe should be generally adopted as more surgical than merely tapping the bowel above the disease through an abdominal incision. As regards malignant disease, the correctness of this treatment is admitted. May not the same treatment be extended with advantage to non-malignant ulceration and stricture?

The question between the two operations must be settled in the light, first, of the comparative danger to the patient; and second, in that of results as to subsequent comfort.

As to the comparative danger, there is no question that colostomy has the advantage, and it is simply on this account and because the operation is manually easy of performance that it has become so universally adopted. And yet, although excision has the higher mortality, that mortality is nothing like what it was a few years ago. In my own last twenty-five cases, I have lost but one, and that was one which I least expected to lose, the patient dying of a weak heart which never regained its proper action after she was taken from the table, although the operation was fully completed in half an hour and not eight ounces of blood was lost.

In my last case the patient's pulse and temperature never went above 100, and she was convalescent and sitting up at the end of the second week, the entire wound having healed by first intention, except at the point of drainage. There was no shock attending the operation and no hemorrhage to speak of, perhaps six or eight ounces. In general it may be said that the high death rate formerly attendant upon excision has become a thing of the past with operators of experience. As simple an operation as colostomy it never can be, but it is now an operation from which the patient may be expected to make a good recovery, and the death rate of which is not great enough to contraindicate its performance in cases in which it seems to offer the best results. This has been accomplished only by years of attention to technique by many operators, and hence its substitution for the simpler operation of colostomy has become possible, which was not the case ten years ago, when the mortality ranged from ten to thirty per cent. Exactly what the mortality now is it is impossible to express in figures, so much depends upon the operator, but I should think five per cent. might be a fair estimate for any recent series of cases performed by one familiar with the operation.

As to the comparative comfort of two women—one of whom has an ulcerated rectum together with an artificial anus in the groin, and the other of whom has had an excision with the formation of a useful anus in the perineum—there can be no discussion.

It has taken me personally a long time to come to this conclusion, because it has been necessary in order to reach it to follow the operation of Kraske from its original conception through all its modifications down to the approved technique and results of to-day. At one time I was quite in doubt whether the result as to comfort from extirpation began to compensate for the increased risk, but this was when the mortality was still high and when we were in the habit of forming a sacral artificial anus to lessen that mortality. Between an artificial anus over the sacrum and one in the left groin there was not much to choose; certainly not enough to pay for great additional risk in securing the former.

But no operation perhaps in surgery has improved more during the last few years than this one, and whereas a few years ago we were satisfied if the patient merely recovered, and paid comparatively little attention to the condition of the parts—the operation being undertaken almost exclusively for cancer—we now expect recovery and devote a great deal of attention to subsequent deformity and comfort.

As to the class of cases in which extirpation is indicated, it is safe to say that operation should be advised in any case as soon as it is found that the disease will not yield to skilful local treatment. But this is a very broad statement. Local treatment accomplishes much or little according to how it is carried out, and an ulceration which is incurable for one practitioner will sometimes yield at the hands of another. Many, however, can be seen at the first glance to have resulted in such a degree of change and destruction as to make all hope of healing out of the question, and as soon as this is determined operation should be advised to prevent further spread of the disease and impairment of the general health. After stricture has once formed, or after the mucosa has been destroyed and the other coats of the bowel have become infiltrated and thickened, it is useless to go on with topical applications, with bougies, and with occasional divulsions and nickings, until the sufferer is worn out with pain and loss of sleep and is ready to submit to anything, no matter how serious. The hopelessness of such treatment should be plainly pointed out to the patient, and the radical operation proposed.

Again, early operation means easier operation and less injury, less subsequent deformity, and better functional result.

As to the technique of the operation, it is not perhaps too much to say that there is hardly a more difficult one in surgery. But because this is so, and because colostomy is correspondingly easy of performance, is no valid argument in favor of one or against the other. Not only is the operation difficult, but it cannot be done by any surgeon, no matter how skilful, as well in his first series of cases as in his second, and the more he operates the less will be his death rate and the better the functional result.

I have elsewhere described very carefully the technique as practised by myself, and have illustrated it with posterior views of the anatomical relations in both male and female, but a general outline of the operation may be of assistance as embodying the results of practical experience.

All trap-door and flap incisions have given place in my own practice to a straight cut, beginning to the left of the median line at the promontory of the sacrum, slanting to the median line at the middle of the sacrum, and thence continuing straight down to the posterior margin of the anus. The attachments of the gluteal muscles and sacro-sciatic ligaments to the left side of the lower part of sacrum are rapidly severed, and the last two sacral vertebræ are cut off with heavy bone forceps, the amputated portion of bone being excised. This may require half an hour or two minutes, depending entirely upon how a man works and how familiar he is with the operation. It may, in fact, be compared to the incision down to the peritoneum in an ordinary laparotomy, and the next step in either case is the opening of the peritoneum. This is much more difficult from behind than in front, because in front the serous membrane cannot be avoided, while behind it sometimes can be found only after a considerable search, on account of the amount of connective tissue covering it.

When the sacrum has been removed the posterior surface of the rectum is directly in view. This should be still farther exposed laterally with the fingers, and the bottom of the pouch of Douglas should then be looked for at the upper right-hand angle of the deep wound. Scissors and forceps will aid in this search, and when once the fold is opened the appearance is exactly the same as when it is opened in front, but several nicks in different points may be necessary before this is accomplished, and it is not difficult to cut into the bowel itself in the effort, which is an unfortunate accident, not because it injures the gut, but because it is sure to foul the wound.

When once the index finger has entered the pouch of Douglas on the right-hand side of the rectum, it should be hooked around and under the gut and an effort made to force the way to the surface of the wound again on the left-hand side of the gut. This involves a second opening in Douglas' pouch, made by and for the exit of the end of the finger, and often the peritoneum will be found so strong and resistant that the finger nail must serve as a guide for the scalpel before it can be pushed through. The object is to get the finger into the peritoneum, under the gut, and out again on the opposite side, thus isolating the gut in great measure and making further work possible; for the strongest attachment of the rectum and the one which most seriously interferes with any effort to bring it down to the skin is this peritoneal fold between it and the bladder in the male or the uterus in the female.

Having cut the peritoneal fold and thus freed the bowel anteriorly, the next step is to divide its posterior mesenteric attachment, and this was formerly the cause of the severe bleeding attendant upon the operation; but no bleeding is necessary if the tissue is tied in

sections before being divided. A Cleveland ligature carrier will assist in this, and the division should be made as far from the bowel as possible, in order to leave the gut surrounded by as much connective tissue and as well supplied with blood-vessels as possible. Cases differ greatly in the length of the mesenteric fold and the amount of tissue between the gut and the hollow of the sacrum, but when the bowel can be loosened from its bony attachments, and still remain covered by a large amount of fat and tissue, it has a much better chance of escaping sloughing than when it lies in the hand stripped and clean and in great measure devitalized.

This is a point always to be carefully aimed at, but one which will sometimes be impossible of accomplishment, on account of the little connective tissue between it and the hollow of the sacrum.

I have said nothing about the previous preparation of the patient, but the anus should always be closed by a plug of iodoform gauze before the operation is begun, and it is a good thing to sew this into the rectum by a purse-string suture around the anus. In this way all escape of intestinal contents into the wound is avoided.

The attachments of the rectum above having been loosened, the next step is to dissect it from its attachments to the levator and the anus, and this should be done boldly and rapidly, only avoiding the vagina and bladder and unnecessary sacrifice of the anus.

The gut, in the form of a closed sac, now lies free in the hand, and before it is cut across the wound should be cleansed of all blood clots, the peritoneum flushed with hot water, and any small hemorrhages controlled. The wound is then carefully protected with gauze or sponges, and the gut cut directly across above the ulcerated part. Two or three sections may be necessary before healthy mucous membrane is reached. The cut end of the bowel is next attached by careful suturing to what remains of the anal structures, a gauze drain is inserted into the peritoneal cavity and brought out about the middle of the skin incision, and the incision is closed above and below the point of drainage with interrupted sutures.

Although it is difficult to imagine trying to do work upon the uterus and adnexa by this incision as the one of choice, none the less when once the pelvis has been opened by this route such work is not difficult. I have grown into the habit of examining tubes and ovaries in every case of the operation upon women, and doing any work which seemed strongly indicated, such as the removal of a pyosalpinx or hydrosalpinx or a cystic ovary.

Such in general terms is the operation I believe to be indicated for the treatment of non-malignant ulceration and stricture of the rectum. There are many modifications of it, and many complications may arise in its performance which the experienced operator will be ready to meet, but its after-results will be found much more satisfactory than those attendant upon colostomy. The operation is not followed by "good sphincteric control," any more than is colostomy, but the anus is where nature placed it and often of enough power to prevent a solid passage for sufficient time to seek the closet. The deformity is often no worse than is seen to follow operations upon extensive fistulæ, and the result as to function fully as good.

Atropine has been found by Traversa's experiments to have a constipating effect; hence in conditions of atrophy of the intestines belladonna and its alkaloids should not be used, as they now so largely are in anti-constipation pills, etc. In lead colic, on the other hand (a spasmodic condition), atropine is indicated. —*La Semaine Médicale*, January 22d.

A CLINICAL CONSIDERATION OF HERPES ZOSTER.[1]

By LEONARD WEBER, M.D.,
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THERE is not much to be said of an ordinary case of shingles that comes and goes in a week, disturbing the patient but little, and leaving him as well as he was before. However, among a comparatively large number of cases of herpes zoster which were under my care I have notes of a few, the treatment of which required considerable time and needed definite remedies to deal with local inflammatory conditions, as well as to overcome the consecutive and severe neuralgias associated with the disease. It is on account of these complications, of equal interest to the practitioner and to the neurologist, that I desire to bring the subject before you.

We may define, or rather describe, herpes zoster as an acute inflammatory disease of the skin, consisting of groups of vesicles on an inflamed base, distributed along the course of a cutaneous nerve. It is usually unilateral; bilateral cases must be very rare. I have seen only one of herpes intercostalis in a rheumatic subject. Kaposi, Eulenburg, and others have observed cases of that kind.

Inasmuch as diseased conditions of the ganglion Gasseri, also of lumbar intervertebral ganglia in herpes zoster, have been seen and described by Baerensprung, Kaposi, and others, there can be no manner of doubt that ganglionic disease, parenchymatous, hemorrhagic, or otherwise, may be and often is the cause of shingles. Clinical observation shows, however, that this is not the origin of every case, but that disease in the spinal cord itself may produce it, as in bilateral cases, and that it may also be caused by disorder of peripheral nerves. Frequently, for instance, herpes zoster does not follow the entire course of a nerve, but appears only along the most peripheral part, or even a branch of the same. Again it has been seen in the territory of nerves that were in a state of irritation or congestion through wounds, abscesses, or tumors in their immediate neighborhood. There are also numerous reports of cases of herpes by various authors in which nodular perineuritis or interstitial and parenchymatous neuritis has been demonstrated in the affected nerve branches.

From all observations it must be concluded that herpes zoster is produced by a disease of a nerve, either at its point of origin or in the vertebral ganglion, or somewhere along its peripheral course, and that the appearance of the herpetic eruptions always corresponds to the anatomical course of the nerve. As to the order of frequency of development in the various regions of the body, I may state that, as far as my own collection of about twenty-three cases of herpes zoster is concerned, the largest number of them were pectoral; after these come cervical and cervico-brachial, then facial, then abdominal, and finally odd cases about the scalp and thigh. The majority of the patients were not in good health when attacked, rheumatism, renal disease, uric-acid lithæmia, neurasthenia spinalis, or tabes being noted in them. The single case I saw of herpes gangrenosus, in the postauricular region of the occipitalis magnus branch of the third cervical, concerned a tall, stout, and vigorous man, of forty-four years, who was very nervous and excitable, but appeared to be in general good health. On the other hand, the case of bilateral intercostal zona—during the first week of this illness on the left, during the second week on the right side of the thorax—accompanied by severe neuralgia, which, fortunately, did not persist long after the disease had run its course

[1] Read before the American Neurological Association, May 27, 1898.

of three weeks, concerned a girl of twenty-eight years, who has been the subject of repeated attacks of articular rheumatism, and never had good health.

With regard to the progress and symptoms of the disease I have not observed anything which is not already described in the text-books, but there are some points connected with the prognosis that require special notice. I have found it to be true that, apart from the amount and severity of the eruption, the gravity of herpes zoster is in proportion to the age of the patient. In children and young persons as soon as the pustules have healed, the patient is generally quite well, and no trace of the disease is left except perhaps a few small scars and a slight tenderness of the skin. In the middle aged, and still more in old people, this is not the case. The eruption is almost always followed by some form of nerve disturbance, generally severe neuralgia, which may last for many weeks and months; especially so in facial herpes. Other sensory disturbances and muscular atrophy may also occur. Vertigo is also mentioned among the sequelæ, but I have not noted that or muscular atrophy in any of my cases. In very old people an attack of zona may be a serious affection, from the consequences of which they will often not entirely recover. Another point of importance which should be borne in mind is that facial herpes, particularly supra-orbital, is very apt to leave deep depressed scars. The patient should be warned of the possibility or probability of such occurrence, otherwise he may attribute the formation of such scars to neglectful or injudicious treatment. But he should also be warned not to bring his dirty fingers in contact with the vesicular eruptions, and be directed to dress them with something better than stale and rancid zinc ointment. There can be no manner of doubt that the suppuration of the vesicular eruption is often due to secondary (streptococcus) infection, that this may spread in breadth and depth in vulnerable individuals, and that it should, and can, be generally prevented by scrupulous cleanliness and the usual methods of aseptic wound treatment. It is almost a matter for surprise to see most people go on maltreating blisters, sores, ulcers, and the like, with dirty poultices or stale zinc salve, after they have learned pretty well to wash a wound clean, cover it with iodoform gauze, and close it up with a strip of plaster.

For local treatment of zona I prefer at the outset a dry application of bismuth subgallate and talcum in equal parts dusted over the affected part and sterilized gauze to cover; but a few changes of such dressings will be required in ordinary cases. When the burning heat is considerable or the patient finds no comfort in the dry dressing, subnitrate of bismuth, one part, to cold cream, three parts, will be found a quite satisfactory ointment to spread on the lesions, to be continued until healing has taken place. For the dread neuralgias after herpes I have seen better results from ten to fifteen-grain doses of quinine, given two or three times a day for a week, than from any other remedy. Hebra, Kaposi, and others have recommended rapidly increasing doses of Fowler's solution of arsenic. My experience with heroic doses of arsenic in chorea and pseudo-leukæmia have been discouraging; the after-effects of large doses of the poison upon the system may even be serious. I have had no need of it in this disease. In one case of neuralgia after cervico-brachial herpes in an old man with sclerotic arteries I had good success with iodide of potassium, gr. x. to xx. t.i.d., and strychnine, gr. $\frac{1}{30}$ t.i.d., continued for a month. In watching the progress of this case I noticed that the œdema, stiffness, and tenderness of the integuments began to yield a week after the patient had begun taking the iodide, and improvement in his neuralgic sufferings followed soon. In the neuralgic stage the patients are wonderfully sensitive to even slight changes of temperature or motion of the affected parts. If we mean to cure, we must keep them very quiet, in even temperature, feed them well, and order everything pertaining to restoration of normal bodily functions very carefully, aside from the treatment by drugs.

Of the cases treated by me three may be selected as being out of the normal.

Case I.—C. M——, aged forty-three years, single, merchant, tall and very stout, very nervous and excitable man, no taint, came to me with herpes in the territory of the left occipitalis magnus, that had broken out with the usual symptoms of constitutional disturbance the week before. There were three or four small but rather deep ulcers above the mastoid process and superficial gangrene of the cutis upon and by the side of the mastoid. Prior to the development of necrosis the patient had noticed confluence of the whole group of pustules in the locality mentioned; though he experienced no great pain or discomfort, he became frightened by the black appearance of the slough and sought medical aid. After the dead tissue was cut away, the wounds were dressed with iodoform and gradually healed. Neither during nor after the attack did he suffer from neuralgia or other local disturbances.

Case II.—Miss C. A——, aged twenty-eight years, rather delicate but active and bright girl, has had a number of attacks of acute and subacute articular rheumatism during the last six years. Last January, and after a mild attack of rheumatism, she had right intercostal zona, and on the tenth day from its first appearance, and before healing had taken place, the same occurred on the left side, both attacks following the eighth intercostal nerve. The patient was troubled with pretty severe neuralgia while the disease lasted, three weeks, and for about three weeks thereafter when it ceased. The treatment consisted in twenty-grain doses of sodium salicylate t.i.d., with occasional morphine injections in the acute stage, and was followed by iodide of potassium, ʒ ii.; liquor potassæ, ℥ ss.; aqua, ℥ viii.— ℥ ss. four times daily from the fourth week on, to be continued until the pains ceased. This is the case I venture to call bilateral, though some objection may be raised to this appellation, inasmuch as the eruption did not affect both sides simultaneously, but after an interval of ten days.

Case III.—Mrs. T. T——, aged sixty-four years, widow, looking older than her age, but physically strong and active; no history but chronic constipation. Last February she had a severe febrile attack of left facial herpes, involving nearly all the cutaneous branches of the third division of the trigeminus, with large and small eruptions upon the left under lip, cheek, temple, auricle and anterior part of meatus, and scalp, with considerable swelling and tenderness of integuments, intense redness, and some œdema of the mucous membrane of the lip and cheek; the left side of the anterior portion of the tongue was also swollen and tender, and the papillæ were prominent, giving the part the appearance of the raspberry tongue of scarlatina. The local and constitutional disturbances in this case—fever and inflammation—lasted three weeks. Though there were much discomfort and suffering from inflammatory pain, neuralgic symptoms did not set in until the fourth week, when the eruptions had almost healed, but some tenderness and œdema of parts remained. They came on furiously, darting through the left side of face, ear, and scalp, and were particularly severe in the course of the lingual nerve. The paroxysms occurred about every two hours at first, lasting from ten to fifteen minutes. In the intervals the patient was not free from ache and pain, but they could readily be borne. Opiates and soothing applications were freely administered,

but they gave temporary relief only. No improvement took place until the end of the fifth week, and after I had put the patient thoroughly under the influence of bisulphate of quinine, of which she took fifteen grains t.i.d. for six days. Then there was a decided amelioration in the severity and frequency of the attacks. During the sixth or seventh week she was ordered fifteen grains twice daily; after that the paroxysms ceased and gave place to an aching soreness in the parts affected, which persisted for some weeks and is not yet entirely gone.

It was a matter for some surprise to me that while the suffering lasted the patient bore opium and quinine equally well, while some years ago, when I had occasion to treat her for intermittent, she was not by any means so tolerant to quinine. At the turning-point of the neuralgic disorder I showed the patient to Dr C. L. Dana, who advised strychnine in full doses if she should relapse; happily she has not done so. For a week or two the left side of her mouth and tongue could not bear the touch of anything, and I had some difficulty in feeding her. Absolute rest, quiet, even temperature of room, and good nursing also helped greatly toward recovery in this case.

Although herpes zoster may attack persons in previous good health after prolonged exposure to cold or after unwonted and severe exertion, I believe that acute and chronic infectious diseases as well as gastro-intestinal auto-infection play also an important part in the etiology of the disease. It is but two weeks since I saw a case of zona of the shoulder in a young man who had recently had scarlet fever. For the successful treatment of herpes neuralgia, quinine in large doses, two or three times a day and continued to the point of tolerance, is probably the best remedy we have; the iodides and strychnine and the galvanic current, when applicable, can be ordered after quinine fails, but careful nursing and management are highly important adjuvants in the successful treatment of every severe case.

25 West Forty-Sixth Street.

A CONTRIBUTION TO THE SYMPTOMATOLOGY AND DIAGNOSIS OF CHOLELITHIASIS IN INFANCY AND IN CHILDHOOD.[1]

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If our theories concerning the predisposing factors in the genesis of biliary calculi are correct, it is surprising that civilized mankind are not all afflicted with gall stones. The assiduous application of a tight abdominal binder to the infant from its birth to the eighteenth month or longer—which immobilizes the abdominal walls, compresses the abdominal contents, and hinders the physiological descent of the diaphragm—would seem a most effective method of inducing biliary stasis and favoring the invasion into the biliary passages of pathogenic micro-organisms. Fortunately the extreme activity of the digestive and respiratory systems in infancy counteracts the malhygiene inflicted upon the helpless creatures by their good mothers, and thus saves us from universal cholelithiasis.

But, although cholelithiasis in adult life has received such careful attention that an adequate review of the accumulated literature taxes one's time and patience, on the other hand, reference to the current pædiatric literature and handbooks gives but little information concerning the occurrence and clinical evidence of this disorder in infancy and childhood; indeed, most of the older writers believed this period of life exempt.[1] The impression prevailing in the professional mind as to the extreme rarity of cholelithiasis in children is no doubt dependent upon several causes. Fiedler[2] claims that gall stones are very frequently overlooked in post-mortem examinations. Naunyn[3] believes the statistics of institutes unreliable, because the various periods of life are unequally represented. Mayo Robson,[4] when referring to the general statistics of cholelithiasis, thinks the figures too low, because they were taken from the laboring classes, who, he believes, are not very subject to gall stones. These statements probably explain the discrepancies met with in the literature. Thus Valleix claims that gall stones are even very frequently found in the newly born. Fauconneau-Dufresne's ninety-one cases included four infants. Cyr declares that he found calculi only twice in individuals under ten years old in five hundred and fifty-eight cases; Wolf, once in forty-five cases; and so on.

In six autopsies upon infants at the Maryland Maternity during the year 1888, we found gall stones once. The subject was an eleven-day-old infant, whose death had resulted from an injury to the head. Ninety small cholesterin calculi were taken from the gall bladder, one was located in the cystic duct, and three were found in the upper portion of the duodenum. We presume that the stones were expelled *in agone*. During the year 1889 gall stones were observed three times in twenty-nine autopsies performed by the writer at the Nursery and Child's Hospital of Baltimore.

The size of calculi in children varies within wide limits; we have seen them as small as grains of sand. The large one we exhibit to you is about one and one-half centimetres in diameter, and was removed by operation from the gall bladder of a six-year-old child. They may attain considerable size.[5]

This paper is based upon the careful observation of sixteen cases, occurring in persons under eight years of age. The diagnosis was in each case corroborated either by detecting the calculi in the intestinal evacuations or on the operating-table, and in two instances by autopsy.

Another reason why so little is heard of cholelithiasis affecting children during life must be because we are dependent upon the phenomena of pain for its syndromology; and, considering the very frequent occurrence of painful disorders of the gastro-intestinal system in children, also that as a rule the practitioner contents himself with a superficial inspection of the alvine and urinary evacuations, it is easy to discern why cholelithiasis may be overlooked. Several of the cases of gall-stone colic under observation had been diagnosed as "a cross child," "fits," and "severe wind colics," one even as peritonitis. In children over eight years of age the symptoms are very much the same as one observes in adolescents; but children under that age, and particularly those under three years, we believe present a distinct symptomatology. No attempt has been made to cover the entire field of cholelithiasis, because some features are the same as in older subjects, and we have not met with all the types prevailing; our intention is to bring this subject to your notice to encourage a more extended investigation.

The importance of a correct diagnosis is also not merely one of personal satisfaction to the physician, as the well-being and future efficiency of the patient

[1] Read before the New Jersey Surgical Society, February 1, 1898.

[1] "Juniores et pueros, quantum novi, nunquam adfligit morbus." Haller: "De Calculis Felleis Frequentioribus Observationes," 1749.

[2] Naunyn: "Klinik der Cholelithiasis," p. 36.

[3] *Ibid.*

[4] Allbutt: "System of Medicine," vol. iv., p. 234.

[5] Saye (Journal des Savans, September, 1697) reported an instance in which he found a gall stone as large as a hen's egg in the gall bladder of a twelve-year-old child.

may depend upon the early recognition and removal the predisposing factors. To the surgeon it is certainly one of importance, because an obstructed cystic duct, common duct, or ulcerated gall bladder is as much a surgical disorder as a diseased appendix vermiformis. Successful operative intervention in cases presenting serious complications will also be in proportion to its promptness and early application.[1]

With the clear indications of the present day, only those hesitate who lack the confidence resulting from a correct and comprehensive diagnosis. The high mortality attending prolonged and complicated delayed peritoneal operations upon children should be an additional incentive to early diagnosis.

For the purpose of clinical convenience we shall describe the symptomatology under the following captions:

I. Cholelithiasis with intermittent obstruction of the bile passages (typical gall-stone colic).

II. Cholelithiasis with hydrops cystis felleæ.

III. Cholelithiasis with cholecystitis, but without active symptoms of obstruction (empyema cystis felleæ).

IV. Cholelithiasis with perforation of the gall bladder and extravasation into the peritoneal cavity, with peritonitis.

V. Cholelithiasis with lodgement of calculi in the common duct.

As in adults, concretions often exist without symptoms. In the four autopsies already recorded, as far as we know, symptoms were never manifested which indicated their existence.

Cholelithiasis with Gall-Stone Colic.—The physician will generally be consulted after the second or third attack, as the first is very apt to be regarded as due to some digestive disturbance. The mother or nurse states that the little one was taken with a crying-spell which she was unable to account for, and which did not cease notwithstanding applications of every conceivable remedy in the house. The paroxysm may have lasted several hours, the patient then enjoying repose, only to be followed by another severe crying-spell of variable duration. Often she will bring a napkin stained with a deeper tint of urine than usual, or, if the child be old enough to use a chamber pot, she will call attention to the darker hue of the urine. Question will always elicit the information that this change of color followed the attack by at least several hours. The biliary obstruction has been so slight that very rarely will there be any tint in the skin. This type corresponds to the passage of small calculi, and unless the stools be very carefully examined they will not be found.

II. The second type may be called characteristic, and is usually observed in children between two and eight years of age. A child apparently in good health becomes pale, vomits, and then begins to scream. Nothing can calm the little one; it clutches its mother or nurse from fright. Another one may repel any advance, instinctively fearing injury. By this time the practitioner has generally arrived on the scene. The information is volunteered that no offending pin can be found, but that it must have ingested something which has disagreed. If then the attendant quietly observes his patient for a few minutes, he will notice that the child is very restless, that it frequently presses the hands against the epigastrium, vomits, and complains bitterly of pain. It will be also noticed that the few moments of crying are regularly interrupted by severe vomiting. If the paroxysm be a mild one, after a variable duration of the phenomena mentioned the child quiets down and falls asleep, to awaken refreshed or perhaps to pass through the same ordeal. In severe attacks the face soon exhibits the effect of suffering by the sinking of the orbital tissue, the cold perspiration, and in attacks of three or four hours the nasal line of Jadelot develops. After an hour's duration the temperature will generally be found from 100° to 101° F. The pulse was always increased in frequency in our cases. The fæcal dejecta will often show the ordinary aspect of acholia, but sometimes, be it remembered, acholic evacuations are of a green color in children. The urine becomes biliary in from six to twenty-four hours. After the culmination of the attacks tenderness can be detected by palpating the region of the gall bladder in the manner which will be described later.

III. The third type is most common in the young child and infant and in neurotic children. The onset is ushered in by a convulsion, which may repeat itself with alarming frequency and even prove fatal. Generally the seizure is interrupted by severe vomiting and crying is interrupted by the eclampsia. The real nature of the disorder occurring in a child without previous observation in similar attacks will rarely be recognized until after it has ceased, and then only by examining the gall bladder for tenderness and the dejecta for the characteristic changes. In one case we noticed that severe crying was followed by severe emesis and then convulsions, the temperature being found normal; the condition was very suggestive of cholelithiatic spasm, and subsequent observation corroborated the diagnosis. The temperature will be found normal at the beginning, thus differing decidedly from the eclampsia of digestive disturbance.

Hydrops Cystis Felleæ.—The following case is so typical that we will quote from the record instead of entering into a detailed description:

"F. J——, aged seven years four months, has never been afflicted with any of the diseases common to childhood. Had lobar pneumonia five years before consulting the writer; otherwise had never been ill until six months ago. At that time a severe vomiting-spell attended with pain in the epigastrium occurred. The attack lasted nearly a week; the patient then gradually improved, but her mother states that six weeks ago F—— told her that coughing always caused her to feel a pain in the epigastrium; also that at times the patient would place her hand upon the right hypochondrium and complain of soreness; at other times she would refer the pain to the right scapula. The tongue presents nothing abnormal, but vomiting occurs occasionally. She has always been constipated. Palpation of the abdomen reveals marked sensitiveness about the xiphoid appendix, increased by percussion; from this painful area to the umbilicus there is no abnormal sensitiveness. Palpatory exploration detects a sensitive enlargement of the gall bladder. Liver normal. No fever. Under treatment the painfulness and gastric irritability disappeared in the course of five months, but the enlargement of the gall bladder remained."

Empyema Cystis Felleæ. — I. Subacute form. Usually after one or more attacks of colic the patient, often of previous lightsome and buoyant disposition common to children, manifests a change of humor; reluctant to disport, its temper is often displayed by peevishness, even perverse and petulant conduct. The appetite may or may not be normal. A full meal is often followed by epigastric uneasiness. If the patient be stripped of the clothing and placed in the sitting-posture, the respiratory movements will be found to be more thoracic than usual; indeed, we have often noticed, after an attack of gall-stone colic leaving a sensitive and swollen gall bladder, that the

[1] "Die Resultate der Internen sind noch genau dieselben, wie vor fünf Jahren, die der Chirurgen haben sich seitdem so erheblich gebessert, dass et heute wahrlich nicht als Annektionslust, sondern als Pflichterfüllung angesehen werden muss, wenn der Operateur schon frühzeitig zum Messer greift." Kehr: Verhandlungen der deutschen Gesellschaft für Chirurgie, 1896.

occasional deep inspiration habitual to infancy and childhood is attended by a characteristic gasp and halt.[1] Pallor of varying duration and intensity followed by vomiting is very frequent, often troublesome, thus aggravating the morbosity by depriving the patient of needful alimentation. Coexistent infective cholangitis causes more or less icteric pigmentation. Intestinal disturbances are not more common than should be expected under the circumstances. The temperature may range from half a degree to several degrees above the normal, and manifests only slight diurnal variations. The continued elevation of the temperature adds its quota to undermine the health. The pulse ranges in accordance with the fever. Soon after the occurrence of cholecystitis the palpating hand detects rigidity of the right abdominal muscles. When the muscles are properly relaxed, the sensitive and swollen gall bladder may be felt. After some days the swelling often disappears, and then one has to rely upon the detection of the area of sensitiveness corresponding to the location of the viscus. Children of sufficient mental development complain of pain referred to the tenth costochondral region when drawing a deep breath or after coughing. In case occlusion of the cystic duct coexists, the signs of this complication will also be manifested.

II. Acute form. This generally occurs after a paroxysm of gall-stone colic. Whereas the patient was very restless during the attack, it now lies quiet, with generally the right leg drawn up, and objects to being moved. The cry, which has been lusty, is succeeded by the groan of distress, and if old enough it complains of severe soreness in the right hypochondrium. Breathing is decidedly costal. The temperature is from 102.5° to 104° F., the pulse very rapid. Vomiting continues, causing much distress. Delirium is nearly always present, and in one case the hyperpyrexia resulted in convulsions. Examination of the abdomen causes much pain, but careful, deliberate palpation will distinguish an indurated mass situated on the anterior border of the liver, sloping off to the middle line, and sometimes extending as low as the umbilicus. Recession of the symptoms with general improvement indicates a favorable turn, while great prostration or collapse indicates approaching death.

Cholelithiasis Resulting in Perforation of the Gall Bladder and Extravasation Peritonitis.—We believe that the histories of the following two cases give so adequate a description of this severe complication that any detailed symptomatic picture is unnecessary.

Case I.—Lucy N——, nineteen months old, white, was admitted to the Nursery and Child's Hospital of Baltimore, on May 16, 1889, in a state of collapse. The mother stated that two days before the patient had been taken ill with vomiting and diarrhœa; that several of the many intestinal evacuations were mixed with blood. As the infant was getting worse, she became alarmed and brought the little one for treatment. On being questioned closely for the previous history, the mother replied that the patient had been raised on condensed milk, and had been real good until six months after its birth; from that time on the baby had been "taking notions at times to cry all night without any reason." Troublesome constipation supervened, but she admitted that paregoric had been freely employed to quiet the crying-spells. She thought she had noticed some fulness in the right hypochondrium when bathing, and especially while soaping the abdomen of the patient the next day after several of the paroxysms. On query she also thought that sometimes the urine was darker in color, but had never noticed decided icteric change in it or the skin. The child appeared to have been well nourished, but now the face was pinched, dusky, with nostrils dilating during the rapid, shallow respiration. There was no scleral discoloration. The temperature was 98 F.; no pulse could be felt. Cardiac auscultation gave 194 pulsations a minute with arrhythmia. Abdominal distention was very marked, but as the patient was *in agone* no attempt was made to palpate the abdomen. Death occurred within an hour later.

At the writer's solicitation the relatives permitted a limited autopsy, which was performed the next morning with the following results: The abdominal cavity contained about a pint of sero-purulent fluid, which was not stained with bile. The intestines were very much distended and presented many patches of recent lymph. They contained some bloody mucus; the stomach contained nothing save some gas. Old adhesions existed between the gastro-hepatic omentum and the hepatic flexure of the colon. The gall bladder was decidedly thickened; it measured one and one-half inches in length and about one inch in breadth at the fundus. A small perforation presented upon its antero-internal surface. The viscus contained some pus and seventy-four small facetted concretions. Three more were impacted in the cystic duct. The choledochus was unobstructed. The interior of the gall bladder presented an ulcer about one-half inch in diameter, the centre corresponding to the perforation. The liver and kidneys presented nothing abnormal.

Case II.—Frank C——, aged seven years and four months, was admitted to the Alexian Hospital at 9 P.M. on June 21, 1895, suffering with severe abdominal pain. He had been taken sick quite suddenly while at play the previous morning. Said his "belly ached him," became very pale, weak, and vomited. The family practitioner referred him to the hospital for operation. The previous history stated that the patient had scarlet fever three years before. Eight months after his recovery from this disease he had a continued fever for seven weeks. Never had jaundice, but often complained (since the continued fever) of pain referred to the epigastrium, attended with nausea and vomiting. The abdomen was distended and so sensitive as to render palpation unsatisfactory, but gentle perseverance located a diffuse hardness extending downward from the anterior border of the liver to a level with the umbilicus, also inward to the median line. The thermometer registered 102.5° F.; the pulse was 130 to the minute. Constant nausea with occasional vomiting annoyed the patient. An enema brought away a normal alvine evacuation. The patient was prepared for operation, etherized, and the palpatory diagnosis verified. Thereupon the usual incision was made in the semilunar line. The adherent omentum under the site of the incision was carefully separated from the parietal peritoneum in a direction outward. Sero-purulent fluid to the amount of probably half a pint welled up and was absorbed in gauze sponges. The cavity was then enlarged, examined by the finger, and found walled off from the general peritoneum and to communicate with the gall bladder through a perforation in the fundus about one-fourth inch in diameter. Nine small stones were removed from the abscess cavity. The opening in the gall bladder was enlarged; twenty-one small polyhedral calculi and one large facetted stone about one and one-half centimetres were removed. By this time the pulse had gone to 160, although the patient had been only ten minutes on the table. The cystic duct was therefore not probed. A rubber drain was inserted in the gall bladder, and some gauze into the abscess cavity for drainage. The wound was re-

[1] Keeping before the mind that the cholecystitis from cholelithiasis generally involves the peritoneal coat of the gall bladder, evinced by the adhesions contracted with adjacent structures, and that the normal respiratory hepatic mobility (according to recent skiagraphic observations of Laborde) often equals as much as seven centimetres, the reason for and importance of this gasping halt of the inspiratory movement become apparent.

duced with silkworm-gut sutures. No bile or calculi ever passed out. The sinus gradually contracted and was firmly closed seven weeks after the operation.

Cholelithiasis with Lodgement of Calculi in the Common Bile Duct.—Dr. William O. Bailey has been kind enough to permit us to use his notes of a very interesting case.

"L. T——, female, aged six years, white, of German parentage, was first seen at my office September 12, 1894. The mother stated that she had noticed during the past twelve months that the child suffered with severe attacks of pain, and that these attacks lasted all the way from thirty minutes to fourteen hours. During these seizures the child was very restless, crying, groaning, pressing her hands into the abdomen, and complaining of the "stomach-ache." Its face had a pinched look, the features were distorted, and the extremities were cold and clammy. These attacks occurred about every three months, and each ended with a severe vomiting-spell. On examination the patient appeared well nourished and properly developed. Skin clear and moist, with no trace of jaundice. Tongue coated at the base. Heart and lungs normal. Physical examination revealed a tumor (cystic), about the size of a hen's egg, along the lower margin of the liver, which seemed to be painless, even when considerable pressure was applied. The liver showed traces of slight enlargement. Spleen normal. Abdomen somewhat prominent.

"From this date until September 8, 1897, the child has had five attacks of colicky pains. Following these attacks the tumor disappeared, but could again be mapped out quite distinctly a few days later. Careful examination of the stools after each attack revealed several small gall stones, polygonal in shape, varying in number from three to eight.

"The fifth attack began at 5 A.M., September 8, 1897, with severe pain and vomiting. Sedatives and warm applications brought relief, so that in about two hours the distress of the child had subsided and it became quite comfortable. At 1 P.M. the pain again returned with increased vigor; the child screaming, tossing about, grasping her belly with her hands, flexing the legs and thighs, and bending the body in multifarious contortions, notwithstanding the sedative freely administered. The pains continued during the following night.

"The next morning (the 9th inst.) the temperature registered 101° F.; pulse, 126. Patient jaundiced. Examination now revealed the gall bladder enlarged and the liver very sensitive. Alvine discharges showed no trace of gall stones. During the day the patient became more deeply bilious in hue and extremely irritable from severe itching of skin. The second day the paroxysms subsided. Temperature, 101.25° F.; pulse, 114.

"On the third day, September 11th, the patient more deeply jaundiced and very drowsy. Temperature, 102° F.; pulse, 128. Abdomen tympanitic. Liver enlarged. In the afternoon the child developed severe rigors, followed by profuse sweating, increase of pain, and delirium. High enema ordered, which brought away clay-colored stools.

"September 12th, symptoms all intensified. Temperature, 102.5° F.; pulse, 130. Delirium continued all night. At 12 M. met Dr. Wendel in consultation, who coincided in the diagnosis of cholelithiasis with obstruction of the common duct and infective cholangitis.

"Aware of the relative commodiousness of the common duct and the expulsive power of the bile ducts in children, it was decided to wait a little longer and and see if the stone imprisoned in the canal would be expelled into the bowel by the efforts of nature. If it failed to pass and the symptoms increased, then operative intervention was to be undertaken.

"September 13th, the fifth day, the condition of the patient remained about the same. Temperature, 102° F.; pulse, 124.

"September 14th, at 10 A.M., the child again suffered from a return of pain. Its suffering increased very rapidly and finally culminated in spasms.

"The spasms gradually subsided, the child became conscious, called for a drink of water, turned on its side, and fell into a sound sleep. From this time the temperature dropped, the pulse became less frequent, so that on the following morning there were only some soreness and enlargement over the hepatic region and gall bladder. The jaundice was entirely gone in three weeks."

Diagnosis. — Pain. The emotional and physical phenomena occurring as the result of pain are the only criteria which we can rely upon to determine its presence in very young children. It is obviously very necessary carefully to observe the actions of the little patient during a supposed paroxysm, in order to locate and differentiate the morbific cause. But the anamnesis obtained from the child's attendants must be exhaustive, thorough, and include particularly the previous behavior of the gastro-intestinal and nervous systems, the skin, and urine. Occasional crying-spells accompanied by severe vomiting should always make one suspicious of calculi, no matter how young the subject, and continued observation for corroborating data should by no means be neglected. Children between four and eight years of age invariably refer the pain of gall-stone colic to the epigastrium. One of the most valuable diagnostic signs is the sensitive state of the gall bladder remaining after the cessation of the symptoms of the colic; it is very often the only reliable one, and after the child has rested may be elicited in the following manner:

The first requisite in very young subjects is to distract the attention. Nothing is so subservient for this purpose and more agreeable to the patient than submerging the body (excepting the head, of course) in a warm bath. The warm water relaxes the muscular structures; the stimulation by the warmth relieves the lassitude resulting from the previous suffering. The former experiences of daily ablution have taught the child to expect considerable handling under similar circumstances, and therefore less objection is liable to be offered on the part of the patient to the proposed physical examination of the abdomen. While the mother or nurse soaps the child, the physician places his hand in the water that it may acquire the warmth of the surrounding medium; employing only the ball of the fingers, he will then gently stroke and depress the abdominal wall, beginning at the left side, gradually traversing the whole abdomen, and lastly approaching the region of the gall bladder. As the abdominal wall is depressed by the fingers over the immediate region of the gall bladder, there will be sudden contractile parietal rigidity induced in case the gall bladder is sensitive. Sometimes the face will be expressive of pain. Enlargement of the gall bladder may also be detected during the examination. After considerable experience with this method in many obscure cases of various abdominal disorders, we desire to call your attention to it as a most reliable means for obtaining a palpatory diagnosis in infants and in very young children. This elaborate method may be omitted in older or tractable infants. The region of the liver and gall bladder may also be satisfactorily explored by elevating the patient's shoulders to forty degrees, flexing the flexed extremities upon the abdomen, and then palpating with the left hand from below upward.

Aberrant position of the gall bladder must be re-

membered, as Siraud's[1] investigations showed that, although the usual location of this organ is fairly constant, yet deviations are frequent enough to require caution. The writer[2] has elsewhere reported an instance of a floating gall bladder which occupied in its migrations many anomalous positions in the abdominal cavity. For the purpose of differentiation, a mobile gall bladder will be found to move upon an arc the centre of which is its attachment to the liver. For topographical purposes the acromio-pubic line of Janeway has served us best in locating the gall bladder, owing to the relatively lower position of the anterior border of the liver in young children.

Rubini[3] was the first to call especial attention to pain around the xiphoid cartilage from gall stones during their expulsion. We have frequently noticed this symptom during the transition of calculi through the ducts, particularly in calculous incarceration of the cystic duct. Attention has been called to the occurrence of this symptom in one of the cases already detailed; we have observed this symptom in six out of eight cases of calculous obstruction of the cystic duct in adults, and the localization was proved by operation. Rubini's symptom certainly deserves more attention, because if extended observation should prove the reliability of it as a sign of obstruction of the cystic duct, then one of the perplexing questions in the surgical diagnosis of cholelithiasis will be rendered more easy of solution. Permanent cystic obstruction is well known often to result in serious or even fatal complications. These cases can be properly treated only by surgical intervention, and, as our diagnostic prehension of obstruction of the cystic duct is not so satisfactory as the development of the operative technique for this condition, more ought to be heard of Rubini's xiphoidal pain.

Murphy's[4] investigations would seem to militate against the assumption of attributing so much diagnostic importance to this symptom, but a little reflection will soon determine the difference between simply irritating the fundus of the gall bladder and the constant *vis a tergo* against the incarcerated calculus. In one instance (adult) this pain continued for seven weeks after the entrance of the stone in the cystic duct, but in the other cases it gradually ceased within four weeks. In gastrodynia we have observed that the maximum painful point is referred to immediately above the umbilicus. The painful area of gastritis is diffuse and localized over the lower epigastric region. Scapular pain in children we have noticed only once.

Vomiting is severe, persistent, interrupted only by the crying, and very exhausting when the attack is of long duration. We have never observed stercoral vomiting in children during gall-stone colic. The cessation of emesis is generally coincident with the extrusion of the concretion into the bowel, but it may continue with uninterrupted severity during acute cholecystitis or cholangitis.

Convulsions have already been mentioned as occurring during the culmination of the paroxysm of colic. The convulsive type proved fatal in one of our cases. No other cause could be determined; there was no fever until after five spasms had occurred. In young children vomiting attended by convulsions and without fever must always be considered as very significant of some form of colic. We believe that this variety is very often overlooked in very young children. Indeed, the practitioner will do well in every case of convulsions occurring without premonition carefully to examine, before excluding gall-stone colic as the cause.

Fever. Beyond what has been said in the preceding, we have nothing to add.

Chills were only once observed in the children under our care.

Respiration. Naunyn claims that costal breathing is rare, except when peritoneal irritation is very marked: but we have found that after an attack in young children even slight sensitiveness of the gall bladder renders the respiratory movements not only costal, but also of a jerky character when the patient is placed in the sitting-posture.

Jaundice. Our observations entirely agree with those of Waring,[5] that in young persons jaundice caused by gall stones without pain is rare. This point has been nicely illustrated in an eight-year-old male child with congenital stenosis of the common duct, complicated by sudden inflammatory occlusion, reported by Dr. R. H. Russel,[6] in which simply jaundice and no colic were observed. The energetic expulsive faculty of the bile ducts in young individuals, as a rule, does not permit the long residence of calculi in the common duct. Jaundice in those cases is slight and apt to be overlooked, unless a careful urinary examination be made. The urine may not give the reaction of Gmelin, unless it be evaporated to about one-tenth its original volume; sometimes the Gmelin reaction is absent, but then the bile acids should be tested for before concluding that there is no admixture of bile.[7] The urine of infants may be tested for bile color by dropping the acid near the border of the urine stain on the napkin, so that the two may coalesce; the characteristic play of colors will be seen even when bile is present in small quantities.[8] In all doubtful cases the urine should be evaporated upon a water bath to one-tenth and tested for bile color and bile salts. In children acholic fæces are not necessarily white; frequently they present a green color with putrid odor and diarrhœal tendencies. The examination for concretions must be very thorough, because in most instances they are pure cholesterin calculi, which so easily disintegrate.

Remarks. — Gentlemen, we have endeavored to present you a comprehensive review of cholelithiasis as we have observed it in infancy and early childhood, and we have also endeavored to prove that cholelithiasis is a not uncommon cause of disease in children. Perspicuity has sometimes caused the lines to be drawn with a little more shading than they are met with in nature, and, after all, this must be regarded as only a presentation of typical symptoms without the perplexities of diagnosis encountered at the bedside. Quick objective perception of the pathological condition is so important in surgical diagnosis, and particularly in its application to pædiatric practice, that our excuse for absorbing your time to such length this evening with matters pertaining to diagnostic technology must be that, since cholelithiasis in infancy and childhood is generally considered so extremely rare, and even by one of the latest authorities,[9] there is evident necessity for calling attention to those means by which gall stones when causing trouble may be detected with reasonable certainty during this period of life.

[1] Sirand. "Notes sur l'Anatomie de la Vésicule Biliaire." Lyon Médical, 1895. Nos. 20 and 21.

[2] Annals of Surgery, February, 1898.

[3] Morris: "On the Clinical Confusion between Distention of the Gall Bladder and Movable Kidney." British Medical Journal, 1895, p. 238.

[4] "Pensieri sulla varia origene e natura de corpi calcolosi che vengono talvolta espulsi dal tubo gastrico." Memoria, 1808, p. 19.

[5] "Twentieth Century Practice of Medicine," vol. ix., p. 723.

[1] *Op. cit.*, p. 85.

[2] Waring, "Diseases of the Liver," etc., p. 225.

[3] Annals of Surgery, December, 1897.

[4] Oliver's test is cited as giving the reaction when only one part in twenty thousand parts is present. Purdy, "Practical Urinalysis," p. 150.

[5] M'Kendrick claims that one in eighty thousand may be detected. "Special Physiology," p. 110.

[6] Holt: "Diseases of Infancy and Childhood," p. 414.

MULTIPLE NEURITIS.[1]

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NEURITIS, or nerve inflammation, occurs in two forms, viz.: (1) Inflammation of a single nerve or group of nerves, and (2) a general inflammation of all or many of the peripheral nerves. The latter is known as multiple neuritis, and is the subject of this paper.

Multiple neuritis is also known as polyneuritis, peripheral neuritis, and disseminated neuritis. It is only during the last few years that it has been recognized as a distinct disease, although James Jackson, of Boston, described alcoholic paralysis in 1822. Dumenil first described peripheral neuritis, as such, in 1864. Joffroy made valuable observations in 1879, which were confirmed by Leyden in the following year; and in 1881 Grainger Stewart wrote fully on the subject. It is only since the comparatively recent writings of Stewart that general attention has been directed to the disease in this country. It is conveniently divided, after the manner of James Ross, into five classes—the idiopathic; the toxic; the dyscrasic; the sensory, vasomotor, and trophic; and the irritative.

The frequency with which the disease is encountered and the favorable prognosis, as compared with the spinal diseases, acute and chronic, with which it may be confounded, make it at once of interest and importance to those of us who are brought into contact with general diseases.

Generally speaking, its etiology is well known, and the cause may be summed up as the presence in the blood of a nerve poison, of varying composition, developed in the body or introduced from without. The poisons developed in the body are either those of infectious diseases, especially of diphtheria, but also, though less frequently, of scarlet fever, typhus and typhoid fevers, measles, grippe, tuberculosis, smallpox, pneumonia, malarial fever, leprosy, syphilis, and rheumatism; or of the dyscrasiæ due to chlorosis, marasmus, cancer, and other cachectic diseases, or vascular degeneration. Pre-eminent among the poisons which have their source from outside are alcohol and lead, but various other poisons, metallic and otherwise—among which are arsenic, mercury, phosphorus, silver, carbon monoxide, bisulphide of carbon, and aniline—are frequent causes. Cold is a frequent cause, and it is probable that it acts by producing some poison, the nature of which is unknown, developed as a result of exposure.

The essential symptoms of multiple neuritis are motor, sensory, and trophic disturbances; but inasmuch as any or all of these may be due to various other nervous diseases, of a more or less serious character, it becomes a matter of great importance to determine accurately when they are and when they are not indicative of a peripheral nerve inflammation.

In the idiopathic variety the onset is sudden, resembling the invasion of an acute infectious disease. Frequently it is ushered in with a chill, followed by pain in the back and limbs, with a rise of temperature to 103° or 104° F., together with headache, loss of appetite, and general malaise. The sensory symptoms are tingling and formication in the hands and feet and general muscular aching and tenderness. There is, in some cases, soreness throughout the entire limbs, the muscles and nerves being equally sensitive, so that it is not easy distinctly to define the nerve trunks themselves. Loss of muscular power soon follows, beginning usually in the flexors of the feet and extending upward, as in Landry's paralysis. In severe cases the paralysis may be general in a few days, extending to the trunk muscles and muscles of respiration. The paralyzed muscles atrophy rapidly and become soft and flabby. The deep reflexes are lost early, while those of the skin vary, remaining intact in some cases and being lost in others. The electrical reactions of the muscles, in this type of the disease, undergo no change except in severe cases and after the disease has lasted for some time.

The course of the affection varies with the extent and intensity of the attack; a case may terminate fatally within a week or may last five or six weeks before any material change takes place. The paralysis may last for months or years, with atrophy and contraction of the muscles, but with gradual restoration of muscular power.

Alcoholic neuritis is by far the most frequent form of neuritis, and it differs in material particulars from the idiopathic variety just described. As its name suggests, its cause is the constant and excessive use of alcohol in one form or another. It is most frequent in whiskey drinkers, but occurs also in beer drinkers and those who are steady drinkers of gin and brandy. Women are attacked more frequently than men, the ratio being about three to one. This circumstance is due either to the fact that women who once become addicted to alcohol are apt to "tipple" more steadily than men, or possibly, as suggested by Gowers, to the fact that there is a difference in the constitution of the nervous systems of the two sexes, which renders the peripheral nerves of the female more susceptible to alcoholic poison. The appearance of the disease may be the first revelation to the physician or family of the habit of secret drinking. The earlier symptoms are sensory, consisting of pain in the extremities, with sensations of pins and needles and formication. Often the tactile sense is blunted; often there is marked hyperæsthesia. The onset is usually gradual, and may be preceded for weeks or months by neuralgic pains and tingling in the feet and hands. The paralytic symptoms also set in, as a rule, gradually, the feet and legs being first involved, and subsequently the hands and forearms. On the contrary, the disease may be acute at its beginning, as evidenced by fever ranging from 101° to 103° F., and by a rapid pulse, varying from 100 to 150 a minute; and the elevated temperature and accelerated heart beat may persist for four or five weeks. There is a characteristic and striking tendency to the involvement of special homologous nerves, namely, in the leg, the peroneal, supplying the flexors of the ankle and extensors of the toes; and in the arm, the posterior interosseous, supplying the extensors of the wrists and fingers—giving rise, respectively, to "footdrop" and "wristdrop." Footdrop is as typical a symptom of alcoholic neuritis as is wristdrop of lead palsy. The paralyzed foot flexors give to the patient a distinctive walk, known as the steppage gait; the foot is thrown forcibly forward, the toe being lifted high in the air so as to prevent tripping. The gait is a clumsy, awkward one, producing the appearance of a constant effort to step over obstacles in the way. In some of the more acute cases the hyperæsthesia of the extremities, especially of the soles of the feet, is so great that the slightest touch is exquisitely painful, and the tenderness over the muscles and inflamed nerves is excessive. The paralysis may extend so rapidly as to become complete within two weeks, and the disease may terminate fatally in a few days; but in most cases the progress is slow, and after an interval of a few weeks or months recovery begins. The tendon reflexes are lost early, but in many cases the skin reflexes remain unchanged; occasionally the knee jerk is preserved, and two cases were reported in the *British Medical Journal* of February 28, 1893,

[1] Read before the Clinico-Pathological Society of Washington, D. C., January 18, 1898.

by Maude and Clarke, in which the knee jerk was exaggerated. In the cases in which this tendon reflex is preserved, the quadriceps extensor has escaped paralysis. The paralyzed muscles become soft and flabby and atrophy with great rapidity, and contractures producing the claw hand and extreme extension of the foot, from shortening of the tendo Achillis, are of frequent occurrence. Usually these deformities subside as recovery progresses, but occasionally they are permanent. The normal reactions of the nerves and muscles to electrical currents are changed. In mild cases the atrophy may be slight and the altered electrical reaction only quantitative, but in severe types the wasting of the muscles is pronounced, and there is "reaction of degeneration." Normally both nerve and muscle respond to galvanic or faradic stimulation; with galvanism the strongest contraction is produced by the negative pole at the moment of closing the circuit. When degeneration of the nerve fibres has occurred, there are a loss of faradic irritability by both the nerves and muscles, and a loss of galvanic irritability by the nerves; the muscles respond, however, to galvanism, and to a weaker current even than normally, but not with the normal quick and sharp contraction. They contract with a slow, peristaltic movement, and may show greater irritability to the positive than to the negative pole. In some cases inco-ordination is a prominent symptom, and when it is pronounced constitutes a special type of the disease, known as ataxic neuritis. In some cases also there are a swaying of the body and an inability to stand with the eyes closed.

Trophic cutaneous changes are not frequent, but occasionally the skin of the extremities becomes red, glossy, and possibly œdematous, and the nails may be roughened.

In most cases, as would be expected from the patient's intemperate habits, there is a complication of some form of kidney disease.

Brain symptoms also occur in most cases. In some instances they take the form of hallucinations of various kinds; in others there are delusions of grandeur; while in others still they consist merely of confusion as to environments. Depression of spirits is unusual; impairment of memory, especially for recent events, and insomnia are almost constant.

Before passing to a further consideration of the subject, it is interesting to note here that a case of alcoholic neuritis may present many of the symptoms of locomotor ataxia, with which it is more than likely, from a superficial examination, to be confounded, although the one tends with proper treatment to recovery, while the other is hopelessly incurable and tends to ultimate death. The symptoms which the two diseases may have in common are impairment of sensation, loss of patellar reflex, swaying of the body when blindfolded, or Romberg's symptom, and inco-ordination. These symptoms, though due entirely to an alcoholic neuritis, might easily be mistaken for those indicative of a sclerosis of the posterior columns. The duration of a mild attack of alcoholic neuritis is from four to six weeks, but in severe cases which recover the symptoms may persist for as long a time as two years, and restoration of muscular power may not be complete for several additional years. Generally power is restored first to those muscles affected last and least.

The history of alcoholism, with marked sensory disturbances and extensor paralysis, together with the peculiar mental disorder, makes the diagnosis in most cases easy. In those cases, however, in which the addiction to alcohol is unsuspected, an error of diagnosis is quite possible.

The prognosis is more favorable than in any other form of multiple neuritis. Naturally it depends to a great extent upon the patient's age, previous habits, and general health. If there is extensive kidney, liver, or stomach involvement, of alcoholic origin, the outlook is unfavorable. Death may occur within a few days from paralysis of the diaphragm or other respiratory muscles, or from heart failure due to involvement of the pneumogastrics; while in other cases a fatal termination may result from acute pulmonary complications, especially pneumonia, to which alcoholic *habitues* are so liable.

Neuritis from carbonic oxide is not very frequent. In this country it usually results from the inhalation of illuminating-gas. It may result, however, from being in a room in which charcoal or coal fire is burning, in which there is an insufficent supply of oxygen. Its symptoms are numbness, impairment of tactile sensibility, pain in the extremities, and paralyses, irregular and variable in their distribution, differing in the latter particular from other forms of neuritis. Frequent accompaniments are redness of the skin, œdema, and herpetic eruptions over the course of the nerve trunks.

Multiple neuritis may also arise from other forms of diffusible poisons, such as aniline and dinitro-benzin, but the symptoms do not differ essentially from those just referred to.

Aside from alcohol the most frequent cause of peripheral neuritis is perhaps lead poisoning, the most striking feature of which is paralysis of the wrist extensors, a symptom which should suggest lead palsy at first sight. It is a curious fact that the supinator longus muscle, the nerve supply of which is derived from the same source as that of the paralyzed extensors, is usually not affected. Sensory symptoms are either entirely wanting or but slight. The pain, if any, is dull and deep seated; the tendon reflexes are lost; frequently there is obstinate constipation, and in some cases there is considerable tremor. This form of neuritis occurs most frequently among painters, plumbers, and others whose occupations bring them into contact with the metal or its compounds. Accidental sources are drinking-water which has passed through lead pipes and the use of cosmetics containing lead. The presence of a blue line upon the gums, extreme anæmia, and a history of colic are usually sufficient to suggest the nature and variety of the disease.

Arsenical neuritis presents the same symptoms as the neuritis of lead, except that in the former the lower extremities are more frequently involved and the sensory symptoms more prominent; while mercurial neuritis usually affects the lower extremities alone. The arsenical form results from the absorption of arsenic in various ways. It may have been taken in a single dose, with suicidal intent, or have been administered with the food with homicidal intent; sometimes it follows the medicinal administration of the drug. An instructive case was reported by Putnam in the *Boston Medical and Surgical Journal* for September, 1888, which resulted from the administration of Fowler's solution in five-drop doses for a period of only six weeks. Arsenic in this case was recovered from the urine; and this reminds us that the urine should be examined for arsenic in all doubtful cases. Other sources of arsenic are wall papers and dyes. Mercurial neuritis occurs occasionally in syphilitic subjects who are being treated with hypodermic injections of mercury. It occurs more frequently, however, among workers in the metal, especially if they are accustomed to inhale mercurial vapors. In the latter class of cases there has usually been a prolonged exposure, but it is possible for the disease to develop although the exposure has been brief. Dr. Christison reported the case of two barometer makers who slept one night in a room containing a pot of mercury upon a stove. One of the men was severely salivated, and the other was affected with a shaking palsy which lasted all his life.

Of the infectious diseases, the poison of diphtheria is most liable to cause peripheral neuritis. The paralysis commonly begins in the palate; the voice changes and there is difficulty of deglutition, with a tendency to the regurgitation of liquids through the nose. Frequently the paralysis extends to the muscles of the eyes, and the ciliary muscle is specially liable to involvement, giving rise to loss of power of accommodation and impaired vision. The arms are affected next in frequency, and lastly the legs. Sensation is disturbed in about fifty per cent. of the cases. Diphtheritic paralyses tend to recovery. The dangers are involvement of the nerves supplying the diaphragm and other muscles of respiration, and the vagus, supplying the heart, either of which occurrences is a signal of great danger. The paralysis is almost invariably bilateral.

The diagnosis is usually made without difficulty. The fact of a paralysis developing in a child who has had diphtheria is usually sufficient to establish the nature of the disease. The use of the antitoxin does not seem to have diminished the frequency of diphtheritic paralysis.

Peripheral neuritis is liable to occur in diabetic patients, and its cause under such circumstances is believed to be toxic materials resulting from or causing the glycosuria.

There is a form of paralysis occurring in malarial districts, especially in Jamaica, believed to be a multiple neuritis due to malarial poisoning. In this form of the disease there are much pain in the extremities and great muscular atrophy. Skin eruptions are frequent, and the pigment of the skin is increased.

Chief among the other infectious diseases which are liable to be complicated or followed by a general neuritis are typhoid fever, rheumatism, syphilis, tuberculosis, and leprosy. In leprous neuritis the most conspicuous features are said to be anæsthesia, muscular weakness, and atrophy.

Peripheral neuritis in the aged has been described under the name of senile multiple neuritis, and is believed to be due to arterio-sclerosis.

The only remaining form of the disease to be discussed is the endemic neuritis, beriberi. This is an infectious and contagious form of neuritis, met with in epidemics in Japan, China, India, Ceylon, the Philippine Islands, Newfoundland, and the coast of Brazil, and is due doubtless to a specific micro-organism, which, however, has not yet been positively isolated. Among the predisposing causes, diet appears to have a very close etiological relation. Many cases have been reported among the fishermen on the banks of Newfoundland, in which the disease seemed to have developed in consequence of insufficient and unsuitable food. Food lacking in albumin has been considered to be a cause, and epidemics in China and Japan have been ascribed to the fact that in those countries rice is eaten largely to the exclusion of other articles. Takaki, a Japanese physician, states that he has reduced the number of cases in the Japanese marine service to an enormous extent simply by adopting a food regimen in which beef, pork, eggs, etc., are given in addition to rice. In 1884, he reports, there were seven hundred and thirteen cases; in 1889, none at all. Cases have been reported as occurring on vessels laden with sugar, in which the predisposing cause was believed to be the carbonic-acid gas and toxic matters arising from fermentation in the holds of the ships. The symptoms are much like those of other forms of multiple neuritis, except that there is a greater liability to the involvement of the nerves of the heart, with resulting tendency to œdema and effusions into the serous cavities. Mild attacks develop gradually, and under proper treatment are recovered from in a few days. In severe cases the outlook is best for those in which there is little œdema. The atrophy may be extreme, and the pain and paræsthesia are said to be almost intolerable.

Intestinal parasites are also believed to be a predisposing cause.

The morbid anatomy of an inflamed nerve is quite well known. In recent cases the nerve appears to the naked eye red and swollen, and its blood-vessels are distended and plainly visible. Microscopically leucocytes can be seen surrounding the vessels and infiltrating the sheaths of the nerves, and frequently small extravasations of blood can be recognized. If these changes are confined to the nerve sheath, the condition is called a perineuritis; if they extend into the tissue between the bundles of nerve fibres, it is known as an interstitial neuritis. In interstitial neuritis leucocytes are also found in the septa between the nerve bundles. When the inflammation begins in the nerve fibres, it is called a parenchymatous neuritis. In parenchymatous neuritis the changes in the nerve fibres are the same as in degeneration; the medullary sheath is first swollen and then the myelin breaks up into segments, which later become divided into small fragments. The masses filling the nerve tube become cloudy and granular, and the axis cylinder is interrupted wherever the myelin is divided. The nuclei of the sheaths are increased in number. Later the axis cylinder disappears entirely, the sheaths become empty and shrivel, and are replaced by connective tissue and fat. This process goes on often to the complete destruction of most of the fibres in the nerve, a few fibres only remaining unchanged. In multiple neuritis the inflammation is chiefly of the parenchymatous type, and involves the peripheral branches throughout. The nerve trunks proper are usually but slightly affected or not affected at all, although they may be tender to the touch. After a time regeneration begins, and this occurs either from the development of new axis cylinders and sheaths from the nuclei in the old sheaths, or, according to Ranvier, from the growth of axis cylinders from the undegenerated part of the old nerve fibre.

The changes which occur in the atrophied muscles are, macroscopically, a reduction in bulk, and, microscopically, diminished size of the fibres, with probable loss of striation and granular degeneration, and, in bad cases, fatty degeneration.

An important and interesting fact to be considered in connection with the morbid anatomy is that in some cases there is an involvement of the spinal cord. It was long ago discovered and demonstrated by Waller that when a nerve fibre is cut the peripheral portion —that is, the part separated from its trophic centre— degenerates. But it has been found by physiologists in recent years that the part of the nerve still connected with its trophic centre may also degenerate, which degeneration is known as "retrograde degeneration," in contradistinction to Wallerian degeneration. This type of degeneration may extend to and involve the spinal cord. It may involve different portions of the cord—its anterior, lateral, or posterior columns, or the cells of the gray matter—but affection of the posterior columns and posterior nerve roots is most frequent. Usually only a portion of the fibres in the affected area is diseased, many healthy fibres remaining among those which have degenerated.

The diseases with which a multiple neuritis is liable to be confounded are acute ascending paralysis of Landry, diffuse myelitis and spinal meningitis, anterior poliomyelitis, and locomotor ataxia.

Landry's paralysis begins in the lower extremities, next attacks the trunk, then the upper extremities, and finally extends to the medulla. It is usually wholly motor, sensory symptoms being entirely lacking or very slight; the bladder and rectum are not affected; muscular atrophy is either absent or occurs only in

those cases which have an unusually long duration; and there is unaltered electrical reaction of the nerve and muscle. The disease is a very fatal one, and its course is rapid, many cases terminating fatally within a week or less. There is considerable doubt as to its exact nature. The tendency is to regard it, in fact, as a special type of peripheral neuritis rather than as a disease of the cord.

In diffuse myelitis and spinal meningitis the usually symmetrical distribution of the paralysis of multiple neuritis is lacking; the muscular atrophy is less, and there is less alteration of electrical reaction; the tendon reflexes are exaggerated, the bladder and rectum are frequently involved, "girdle" pains are common, and bedsores are frequent.

In anterior poliomyelitis the diagnostic features are the age of the patient, the rapid onset of the paralysis with partial disappearance after a few days, the irregular distribution of the paralysis, and the lack of sensory symptoms. Muscular atrophy and change in electrical reaction are the same as in neuritis.

The disease with which multiple neuritis is most apt to be confounded is locomotor ataxia. As already stated, the symptoms which may be common to both are impairment of sensation, loss of patellar reflex, Romberg's symptom, and inco-ordination. The progress of locomotor ataxia is slow; there is for a long time no loss of muscular power, although inco-ordination may be marked; the muscular tenderness of neuritis is absent; there is special tendency to involvement of the sphincters; "girdle" pain and a history of lightning pains in the limbs, very different from the pain of neuritis, are usual; optic-nerve atrophy is fairly constant; and altered pupillary reaction is almost invariable. The pupil contracts for accommodation, but is irresponsive to light (Argyll-Robertson pupil).

The prognosis in multiple neuritis is variable, depending largely upon the patient's general condition and power of resistance and our ability to determine and remove the cause. When, in addition to the paralysis of the extremities, the trunk muscles are also weakened, respiratory difficulties are to be expected and life is endangered. When the paralysis shows no tendency to extend—that is, when the disease reaches a stationary stage—the outlook improves. Paralysis of the diaphragm is a very unfavorable symptom. In cases in which the occurrence of bedsores or paralysis of the bladder points to involvement of the cord, the prognosis is always serious. In some cases, especially those due to alcohol, death may occur within a few days from pulmonary congestion or heart failure, due to involvement of the pneumogastrics. Patients who have sufficient vitality to live until nerve regeneration has begun, will generally recover. In young subjects recovery is the rule, and in cases of moderate severity the restoration of muscular power after a longer or shorter time is generally complete.

A knowledge of the cause and dangers of the disease will point the way to intelligent treatment. The chief indications are to remove the cause and eliminate the poison. When the cause is alcohol and there is reason to fear that its withdrawal will be attended by heart failure or serious nervous depression, the administration of strychnine, alone or combined with the carbonate of ammonium, digitalis, or strophanthus, will be found serviceable. When the cause is lead, arsenic, or mercury, their elimination can be hastened by frequent warm baths and the administration of iodide of potassium.

Absolute rest in bed should be insisted upon in all forms of the disease.

Symptomatic treatment is necessary in most cases for the relief of pain, which in many instances is urgent. For its relief, cannabis indica, acetanilid, phenacetin, antipyrin, ammonol, or morphine may be used. The use of the coal-tar products should be with extreme caution; frequently they are entirely contra-indicated by a weak heart. For my own part, I much prefer to rely upon morphine given hypodermically in such quantities as may be required, to the exclusion of other analgesic drugs. It is stimulating, is reasonably uniform and sure in its action, and there need be no fear, if it is used judiciously, of the morphine habit. It should be withdrawn gradually as the pain subsides. The pain usually disappears many weeks before the patient is able to be out and around sufficiently to procure the drug, even though there should be a temporary craving for it. Hot fomentations and poultices applied over the inflamed nerves and painful muscles will often make the use of other measures designed to relieve pain unnecessary. In alcoholic cases, when the entire withdrawal of alcohol is followed by serious depression, cocaine, in doses of one-eighth or one-fourth of a grain, is said to act well, not only as a stimulant, but also as an analgesic. Electricity in the form of the galvanic current passed continuously down the limbs will often effectively allay pain.

Another symptom which may require treatment is insomnia, for which the bromides, chloral, or hyoscine may be used. The hydrobromate of hyoscine given hypodermically in doses of one-one-hundredth of a grain is usually effective, especially in those cases in which there are symptoms of mental derangement.

Massage is of great importance, as in most other atrophic muscular conditions. It may be used by a skilful operator from the beginning of the attack. During the early stage the movements should be made with the greatest possible gentleness, but later on when the acute symptoms are subsiding deep massage may be used with great advantage.

During the acute period of the disease galvanism is indicated, though only for the purpose of relieving pain. Later the faradic current is useful to exercise the muscles artificially and prevent their wasting.

Contractures should be prevented as far as possible by giving proper attention to the patient's posture and using such pads or other mechanical devices as may be required.

During convalescence iodide of potassium (if it is borne well) and tonics, especially arsenic (unless the disease is due to arsenical poisoning), iron, strychnine, and cod-liver oil, are serviceable.

During the acute stage the diet should be light; subsequently it should be generous, but always of an easily digestible and nutritious character.

I have had under my care three cases of multiple neuritis, the main features of which I herewith report:

Case I.—December 16, 1894, I was called to M. W——, white, male, aged eight years, whom I found to be suffering with a moderately severe attack of diphtheria. The membrane was on either tonsil and in the pharynx. The course of the disease proper was uneventful. The child never seemed to be very ill, and at the end of twelve or fourteen days was up and around the house, apparently as well as ever, except that its strength had not been entirely restored and it was a trifle anæmic. An iron tonic was prescribed and the case dismissed.

January 5, 1895, I was again called to the child, whose mother told me that it had had some difficulty in swallowing and that she had noticed a change in the character of its voice. Its palate was then paralyzed and from that time on for several days the paralysis was progressive, successively attacking the arms, some of the trunk muscles, and the legs. Deglutition became very difficult. The patellar reflex on either side was abolished. There was slight muscular atrophy of all of the extremities, most pronounced in the legs. The sensory symptoms consisted of pain

and numbness in the extremities. For two months the child was entirely unable to walk, and it was not until several months later that the muscular strength was entirely recovered. Recovery was eventually complete.

Case II.—June 14, 1896, I was consulted by Miss M——, white, aged forty-one, whom I had attended at various times during the preceding three years. She complained of numbness in the soles of the feet and of a tendency to stagger. On the preceding day she had stumbled and fallen in the street. Upon examination I found that the general sensation of the plantar surfaces of her feet was impaired, that the patellar reflex was diminished on either side, and that her gait was more or less ataxic. I did not suspect the existence of alcoholic poisoning at the time, although I have wondered, in the light of subsequent events, that her general appearance and increased rotundity had not suggested an addiction to alcohol. A week later I saw her again. In the mean while the impairment of sensation had extended half way or more to the knees, she complained of great pain and persistent numbness in her feet, the ataxia had become more pronounced, and the steppage gait, so characteristic of alcoholic neuritis, was unmistakably developing. After a few days the footdrop was fully developed, the feet became œdematous and purplish, the patellar reflex was entirely abolished, the electrical reaction was altered, the muscles became flabby and began to waste, and there was noticeable mental confusion. The extensors of the hands were involved, but to a minor degree, and the wristdrop was not complete. The patient would not for a long time admit her addiction to alcohol, although she subsequently did so, confessing that she had begun to drink whiskey seven years before and had taken it daily since that time, in gradually increasing amounts, to the date of the attack. She stated that she did most of her drinking after she had gone to her room at night, and that it had been her custom for a long time to go to bed comfortably intoxicated. She would not tell me the amount of her daily consumption. This patient remained in bed for four months, and for four months longer she was unable to walk. There was, in spite of the greatest care, some contraction of the tendo Achillis on either side. Massage and faradism were used persistently after the acute stage had passed, and apparently with good results. Twelve months after the commencement of the attack the patient walked comparatively well and the firmness and size of the paralyzed and atrophied muscles had been nearly regained. She is now quite well. The only alarming symptom during her illness was that during the earlier portion of it her heart was persistently weak and excessively rapid, the pulse at some times reaching 160 a minute. A gratifying feature of this case is that thus far the patient has been cured seemingly of the alcohol habit.

Case III.—J. V——, white, male, aged thirty-nine, a saloon keeper; first seen, September 1, 1897. History: Accustomed to whiskey and beer in large quantities for past ten years; five or six drinks usually before breakfast; amount of whiskey consumed daily at present, about one quart; general health good; had had no serious illness; during past three weeks had felt numbness and burning pain in feet and weakness in legs, noticed especially in going up and down stairs; had fallen once when descending the steps.

Upon examination tactile sensation of soles of feet impaired, muscular strength of legs reduced, patellar reflex diminished. From this time on paralysis developed comparatively rapidly; the extensors of the hand soon became involved, and in two weeks the wristdrop and footdrop were complete and the patellar reflex was abolished entirely: the trunk muscles were also weak; pain in the extremities and back at times was very severe; the patient was unable to turn in bed on account of great pain and weakness. Marked atrophy of paralyzed muscles. Electrical reaction very much altered. Mental confusion; does not realize that he is at home; believes his toes have broken off. No rectal or vesical symptoms. Patient in bed from September 4th to December 14th, at which latter date acute symptoms had sufficiently subsided to allow him to be lifted to a chair for a portion of the day.

Treatment: Nitrate of strychnine as substitute for alcohol; hot applications to limbs, and morphine hypodermically as required to control pain; daily application of faradic current and massage on alternate days during the two weeks preceding this report.

Wristdrop is improving; most of muscles of forearm respond to current; footdrop slightly improved, but still pronounced; mental confusion has disappeared; feet purple and slightly œdematous; small vesicle on extremity of great toe and adjoining toe of right foot. Heart's action regular and its strength good. Urine normal. Patient apparently gaining weight. Nitrate of strychnine has been discontinued, and elixir of iron, quinine, and strychnine ordered instead. No evidence of involvement of cord. Outlook good.

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THE OBSCURE CASES OF GALL-BLADDER DISEASE.[1]

By EDWARD S. STEVENS, M.D.,
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The enemy in ambush is the enemy to be feared. The unseen danger is the grave danger. Can we but know what emergencies to expect with certain conditions, we may prepare to meet them. Among the diseases with which the physician and the surgeon find themselves called upon to cope, and which have these characteristics of uncertainty, are those of the gall bladder with symptoms so obscure that their recognition is long a matter of great doubt, and the treatment of which consequently is equally unsatisfactory to physician and patient.

It is not a difficult matter to make a diagnosis of gall-stone colic when pain in the proper locality is so severe and cutting that the subject doubles himself into a bow knot, or gets down upon the floor and claws at the carpet; nor is it to be wondered at if one with little experience in medicine quickly arrives at the conclusion that there is an obstruction to the proper flow of bile if there are extreme jaundice, stools of the color of blue clay or putty, and very dark urine.

But these decided symptoms occur in the exceptional cases. The great majority of cases of gall-bladder disease are not recognized from such signs; many are not recognized at all, and the question is continually asked, "What is the matter with the American stomach?" when there is nothing at all primarily the matter with the poor old American stomach; and our offices are flooded with literature and samples of various digestive ferments warranted to cure just these very troubles that do not yield to the remedies when employed, for the salivary glands, the stomach, and the pancreas have already supplied all that is necessary in that line.

One instinctively feels that those cases of disease accompanied by such severe symptoms as colic and cholæmia are the graver cases. Yet when one thinks of it, these are but the symptoms which show us that nature is making an effort to free the delicately made gall bladder of an incubus of perhaps many years' standing, and that by a natural channel. They are grave cases, yet perhaps after a little period of anxiety

[1] Read before the Ohio State Medical Society May 5, 1898.

the stone may pass, the symptoms disappear, and possibly the disease be at an end.

What of the case before such symptoms come on? Is there not much more reason for anxiety when we consider our uncertainty as to the exact condition present, and whether, if there be calculi present, they may not ulcerate into the pelvis of the kidney, the portal vein, or the peritoneal cavity, or be found in an abscess of the liver, and that without giving rise to notable symptoms until the mischief is accomplished? And all of these conditions, and others, have been found after a variable history of mild gall-bladder disease.

In many of these cases we can in the first place merely be suspicious of the existence of gall-bladder disease. When one applies for relief from trouble with the stomach and gives a history of having applied for relief in vain to many well-qualified physicians, we may suspect that there is some condition present apart from the stomach. If the supposed signs of indigestion are independent of the taking of food into the stomach, our suspicion is strengthened. But this is not sufficient to establish a diagnosis of gall-bladder disease. The suspicion of it being aroused, months may elapse before anything is noticed, more than simple distress in the stomach with eructations of gas. Stones may be present and yet cause no pain, or catarrh of the gall bladder of low grade may exist without either pain, tenderness on pressure, or a perceptible tumor being noticed. If one does not hastily jump at a conclusion, he will sooner or later discover other signs of the suspected trouble. There may be a slight sallowness of the skin. If it is from bile, there will be a reaction in the urine upon the proper test, although the colors may be quite faint. There may be periodical passages from the bowels of strings of mucus, occasionally of blood also.

Just as certain mental emotions may cause at times the involuntary evacuation of the rectum or urinary bladder, so they may give rise to an effort on the part of the gall bladder to expel its contents. This may be more or less painful, or perhaps produce symptoms of distress so slight that it is not considered important enough to refer to a physician. I have seen this slight distress follow worry over business affairs and a lawsuit. In one such case the diagnosis was confirmed by the passage of a calculus from the bowels after a sharp attack of hepatic colic. In a second case prolonged and severe distress was caused by deep grief over the death of a child at one time, and at other times excitement produced a like effect. In another case hypochondriac distress was subsequent to a prolonged fit of laughter. The diagnosis, strengthened by other signs, was confirmed in this case by cholecystotomy.

Among the most interesting symptoms dependent upon the existence of gall-bladder disease with which I have met are certain reflex symptoms. In considering them one should bear in mind the extensive distribution of the branches of the pneumogastric nerve and the sympathetic. Among the most common of the reflex disturbances is palpitation of the heart. Another, which I have twice observed, is pain in the urinary bladder.

The following references to disturbances of the respiratory apparatus seem to me to be of some interest. I have never seen any mention of similar symptoms being apparently caused by irritation from biliary calculi or other disease of the gall bladder.

I. A lady, sixty-six years of age, applied to me for relief from pulmonary disease. There is a history of consumption in the family. She complains of shortness of breath, severe cough, and profuse expectoration. There is a history of "liver and stomach trouble," extending over a period of thirty years. She speaks of a constriction about her body, as if by a cord. Her pulmonary disease engaged my attention, and seemed sufficient to account for all of her symptoms. Some months after I took charge of her case my attention was directed to a tumor in the right side, which seemed to me to be a distended gall bladder, and not long afterward signs of obstruction were noticed—light colored stools, dark colored urine containing bile, and slight jaundice. It was from this time on that the patient and her family as well as the physician noticed that the distress in breathing always came on and her cough was more severe when the gall bladder became distended, or when there was pain or distress in the epigastrium or right hypochondrium.

II. A lady, about forty years of age, seemed to have obstinate laryngeal trouble. She was subject to violent spasmodic coughing-spells, frequently followed by aphonia. Examination of the larynx revealed nothing to account for these symptoms or for the great pain she experienced in her neck. Occasionally one or more of the cervical muscles would cramp, producing great pain. She complained of pain under the ribs on the right side. A guarded diagnosis was made of gall-bladder disease probably due to gall stones, and other signs were looked for. She had what seemed to be neuralgic pains in the chest and neck and an intermitting fever, the fever always preceded by a chill and coming on at the same hour daily. These were at first accounted for by the fact that she had been living in a malarial district. Very slight jaundice was observed several times, and repeated examinations of the urine gave at times the reaction for bile and at times none. Operation was advised and accepted. A few days previous to the operation she experienced one of her spasmodic coughing-attacks. This was relieved by full doses of morphine hypodermatically. A slight cough persisted until the day of the operation and was accompanied by aphonia. A large number of small calculi were removed from the gall bladder. When consciousness was restored, the patient's voice was clear and her cough was gone.

In a large number of the obscure cases of gall-bladder disease there will always be more or less doubt as to whether the gall bladder and ducts are diseased at all. Moreover, with a reasonable degree of certainty as to the location of the disease, there will always be more or less doubt as to the character of the disease; for, be it remembered, there are other forms of disease which produce gall-bladder disturbance besides gall stones and the inflammatory affections. In such cases, the symptoms not yielding to treatment, and being essentially chronic, it is eminently proper to advise an exploratory operation for the purpose of making certain the diagnosis. This may be advised, in the first place, because in the hands of one who is skilled in this work the danger is almost *nil*. In the second place, the propriety of such advice may not be questioned, because the exploration is the first step to be taken in a radical gall-bladder operation, and most of the chronic gall-bladder diseases require local treatment rather than medicinal, if a permanent cure is to be effected. Even though an incurable, a malignant disease be discovered upon opening the abdomen, it is a matter of great satisfaction to know positively what condition is present—what not to treat. It has happened, too, in numbers of cases that relief followed the simple exploration, although the abdomen was closed with the knowledge that malignant disease of or near the gall bladder was responsible for the symptoms for which relief was sought.

Uric Acid.—It is now very generally conceded that uric acid is formed in the tissues and excreted by the tissues.—Osler.

CRESCENTIC ASTIGMATISM.

By NORBURNE R. JENKINS, M.D.,
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Upon a minute and careful ophthalmometric inspection of the cornea we shall find to exist in a very small percentage of eyes a curvilinear[1] astigmatic axis, deviating one to thirty degrees from an axial tangent, which is ordinarily present in astigmatism.

As an example we will give an exaggerated case: We will suppose the primary axial point to be 90°. Upon describing a quarter circle with the indicators of the ophthalmometer we find that the hairlines of the mires are not in apposition and become so only by a backward rotation of 30°, thus indicating the secondary axial point to be 60°.

To simplify matters, we furnish the following diagrams: Figure *a* represents the perfect apposition of

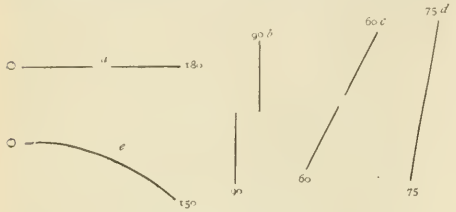

Diagram (Crescentic Astigmatism).

the hairlines of the mires in the first position, and indicates the primary axial point to be 90° (assuming the astigmatism to be W. R.).

Figure *b* represents the hairlines of the mires in the second position and shows deviation.

Figure *c* represents the hairlines of the mires, showing the lines to be in apposition, and indicates the secondary axis to be 60°.

Figure *d* represents the proper axis, 75°, for a correcting-cylinder, which is a compromise between 90° as shown in *b*, and 60° as shown in *c*.

Figure *e* represents the curve of the astigmatic axis as it hypothetically exists in the cornea.

What has been said above has no reference at all to corneal astigmatism resulting from pathological changes.

[1] The liberty is taken of adding the qualification "curvilinear" to the word "axis."

Progress of Medical Science.

Treatment of Carbuncle.—Dr. S. N. Rosenbaum recommends the following method: Fold a piece of aseptic gauze until it forms a thickness of six to eight layers, the surface area to be somewhat larger than the carbuncle to be covered. The gauze is first thoroughly saturated with Thiersch's solution, then covered with a layer of a ten-per-cent. ointment of ichthyol, and then applied to the carbuncle. A piece of rubber protective large enough to overlap the gauze is now placed on the same to keep in the moisture. A layer of cotton is placed on the protective, and then the bandage is applied and allowed to stay on for two days. When the patient returns to be rebandaged and to have the dressings renewed, the cores are found to have separated from their respective walls, and at the next redressing, which is again in two days, they are found entirely separated, and can be easily and painlessly removed. At the next visit granulation has passed the primary stage, and healing quickly results, leaving an almost invisible scar. The only constitutional treatment which has been found necessary is to give cathartics, like fluid extract of cascara sagrada or castor oil, and in individual anæmic or cachectic cases compound syrup of the hypophosphites. The advantages claimed for this method are: 1, painlessness (a great factor with many patients); 2, quickness of healing, more so than with other methods; and 3, no scar or cicatrix remaining—important when carbuncles are in visible parts.—*New York Medical Journal*, June 11, 1898.

Exclusion of the Chemical Rays in Small-Pox.—Dr. Herman Backman reports sixty-two cases of smallpox treated by him at Wibourg after Finsen's method of excluding the violet rays by means of red curtains to the windows (*Finska Läkaresällskapets Handlingar*, May, 1898). Of these patients, three adults and four children under two years of age died. In the other cases the results of treatment were excellent. The stage of suppuration was of short duration, and there was no pitting. The mean number of days in hospital was 19.5, which is below the average. The author has also treated other acute exanthemata, such as scarlet fever and measles, in the same way and with equally good results. As a protection against freckles, he recommends the wearing of a red veil when exposed to the sunlight in the spring and summer.

New Method of Sterilization.—A process for successfully avoiding any undesirable features or qualities imparted by the usual method of sterilization has been brought to the attention of the French Academy of Sciences by M. Duclaux, the eminent chemist; the principle thus explained consisting in subjecting the liquid thus to be sterilized to the desired temperature in a closed vessel, under high pressure and away from contact with air. The apparatus used for this purpose is about equally simple, the sterilizer consisting of a steel tube silvered within and surrounded by a steam or water jacket formed of a second cylinder of slightly larger dimensions, suitable connections and stopcocks being provided, as well as the thermometers and pressure gauges, and the mechanism so mounted as to be revolved by the turning of a crank. Some information on this matter, communicated by Professor Bilslik, is in point, namely, that water may be sterilized in five minutes by adding to it bromine, and that bromine may then be neutralized by adding ammonia. The river water of Berlin, it is stated, has been tested two hundred times, and, after being treated with bromine and ammonia, all germs of disease were destroyed, including those of typhoid and cholera. In thus sterilizing a gallon of water, there are first added three drops of a solution of one hundred parts water, twenty parts bromine, ten parts potassium bromide, there being added after five minutes three drops of a weak solution of ammonia.

The Therapeutic Use of Hot Air.—Dr. Mendelssohn (Berlin) says that the treatment of chronic arthritis is almost exclusively a question of temperature, and that the most efficacious method is the application of hot dry air, which allows a high temperature to be maintained for as long a time as may be required and does not produce any undesirable symptoms. Dr. Mendelssohn, following the example of English physicians, has made use of hot dry air, and has proved that temperature of from 120° to 140° C. (from 248° to 284° F.) could be borne by patients for several hours. The subjective sensations were not disagreeable, and no unfavorable consequences were produced on either the pulse or the temperature. The immediate local effect on the joints was at once very obvious, especially in chronic rheumatism, gout, and other affections of the joints. Sometimes after the first application of the hot air they became temporarily more movable, but of course to obtain a substantial improvement the treatment must be applied for a longer time.—*The Lancet.*

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RESTRICTIONS OF MEDICAL PRACTICE.

IN the current number of *The Arena* are two articles relating to the medical profession. The first, entitled "The Medical Trust," is contributed by Prof. T. A. Bland, and is an indictment of the action of the physicians in defending themselves by legislation from the encroachments of those commonly known as quacks. The homœopaths and eclectics are also severely criticised for having in their own defence joined hands with their professional brethren in many of the States. The composition in question is a somewhat slovenly performance, besides being decidedly vague and inconclusive; its effect, too, is considerably marred by the animus that pervades the article throughout. The arguments employed in the support of the contention that legislation in the interests of one class of physicians is in a high degree harmful will fail to convince any one who is tolerably well acquainted with the subject. The accuracy of some of the statements is, to say the least, open to grave doubt. For example, when we are told that Paracelsus was the founder of the old school, and that this "school" of medicine is based upon the theory of "*contraria contrariis curantur*," the English of which is that the way to cure one disease is to create another disease of a different sort, we are filled with amazement. In the first instance, although probably the records existing concerning Paracelsus cannot be wholly depended upon, yet the belief is general that, so far from the old school being founded on his teachings, on the contrary he was the most prominent figure among the mediæval charlatans. Secondly, Prof. Bland must allow that his translation of "*contraria contrariis curantur*" is rather too free and imaginative. However, these are points of but comparatively small importance. The pith and gist of the article lie in the fact that it is an endeavor to prejudice higher education in the minds of the general public. It is an attempt to throw dust in the eyes of the community at large, and to prove that education is a factor of small moment in the production of competent physicians. In support of this view the state of the country before the civil war—when there were no laws restricting medical practice—is cited, and the insinuation is made that such a condition of things is preferable to that prevailing now. Dr. William R. Fisher takes up the cudgels on behalf of the medical profession, and in a very able article exposes the fallacy of Prof. Bland's arguments and sharply scores him for his "stab-in-the-back" methods of fighting. In the course of his remarks Dr. Fisher says: "In considering Prof. Bland's paper the reader should keep clearly before him the main issue which the author sets out to establish—namely, the existence of a medical trust, which has been created since the termination of the civil war. All irrelevant matter should be put on one side and not taken into account. In this way the first half of the article can be promptly disposed of." Dr. Fisher then sketches in a clear way the happy conditions of affairs which existed before our civil war, when "medical practice was absolutely free." And he goes on to say: "The combination did not have its origin in the low and mercenary motives which Prof. Bland chooses to ascribe to it. When the medical profession was at its lowest grade, owing to the absence of proper legal restrictions, a resolute attempt on the part of a few to better the deplorable condition was met with hearty approval. Happily for the good name of our country and the welfare of our people, the true men and women of the medical profession have not been influenced by the motives which appear to actuate Prof. Bland. The movement for reform in medical education began at once to enlist the sympathy and support of high-minded physicians in all the so-called schools. Little by little the work has gone on. To further its advance old quarrels have been reconciled and opposing interests have been conciliated to a degree that at one time seemed to be unattainable. Men who a few years ago were wrangling among themselves about theoretical questions have agreed to set aside differences of opinion that they may join together in a practical effort to raise the standard of medical education to the high position which it holds in other civilized countries. This united action on the part of the physicians, irrespective of the schools, to elevate the dignity of their calling and to protect the public from half-educated doctors as well as from unprincipled quacks, Prof. Bland sees fit to call 'The Medical Trust.' He is at liberty to call it what it pleases him, but it will take more than a slurring epithet to stir up popular prejudice against legal restrictions which have been enacted in the interests of the people." The fact is pointed out that the restrictive medical laws relate alone to matters of education, and do not deal with particular theories of practice or systems of treatment. But Prof. Bland claims that "under the operations of the existing laws it has been declared a crime, punishable by fine and imprisonment, for a physio-medical physician to cure a patient with his non-poisonous vegetable remedies; for a disciple of Priessnitz or Father Kneipp to cure a sick person with water; for a vitapathist to heal the sick by the magnetic power that the Nazarene used so successfully in His day; or for the mental healer or Christian scientist to practise his system for the relief of human suffering." Referring to these remarks Dr. Fisher says: "This is a bold statement. It is the kernel of his article; all the rest is merely husk and padding. Upon this he relies to rouse up popular resentment and to prejudice legislators against the cause of the higher medical education. Here, again, with ambiguous phrase, yet showing plainly the animus which has prompted

him throughout his crafty attack, he seeks to mislead the unguarded reader into a pitfall of deception. This skilfully constructed paragraph is intended to convey to the popular mind the impression that legislative acts have been passed at the instigation of an intolerant, bigoted, and persecuting combination of medical men, to define what remedies may be used by physicians and to restrict them in their methods of practice." That such is not the case every physician knows full well, but the credulous public is apt to be led away by statements of a like nature, and therefore it is advisable that the facts should be placed before them in a clear manner. There can be no objection to Christian scientists, faith healers, or followers of Father Kneipp, pursuing their modes of treatment, provided that they comply with the conditions of the law. The laws restricting the practice of medicine were framed and passed just as much for the benefit of the people as for that of the physician, and we believe that when the truth of this is thoroughly understood it will also be as thoroughly appreciated. Thoreau has remarked that nothing more strikingly betrays the credulity of mankind than medicine; quackery is a thing universal and universally successful. In this case it becomes literally true that no imposition is too great for the credulity of men. There can be no doubt that to abolish the restrictions regulating the practice of medicine would be to open the door to impostors of every kind, and charlatanism would be once again rampant in the land. Happily so retrograde a step is not likely to be taken. On the contrary, it seems probable that in the future these restrictions will be more strictly enforced and more universal.

H. Carrington Bolton, writing in a late number of *Science*, on quackery in general and the methods of Mattei in particular, ends by saying: "All this would be very amusing were it not sad—sad to find that educated men can so degrade their knowledge of chemistry, physiology, and medicine; sad to think of the conceptions of these sciences formed by persons subject to the influence of these lewd impostors; sad to think of the suffering that ensues for lack of proper treatment; sad to think of the unscrupulous immorality of those willing to trifle with human life for selfish gain. One is inclined to cry with Massinger:

> " 'Out, you impostors,
> Quacks—salving, cheating mountebanks. Your skill
> Is to make sound men sick, and sick men ill.' "

THE VALUE AND LIMITATIONS OF EXAMINATIONS OF THE GASTRIC CONTENTS IN DISEASES OF THE STOMACH.

In an interesting article in the *National Medical Review* for February, 1898, Dr. Max Einhorn, of this city, treats of the value and limitations of examinations of the gastric contents. While a large number of practitioners seldom avail themselves of these examinations, there are some who exaggerate their importance. The golden mean lies, however, between these two. If these examinations are made in appropriate cases, they yield most fruitful results; if practised indiscriminately, they may often prove valueless.

The question now arises: When are examinations of the gastric contents necessary and when not? On the whole, Dr. Einhorn says, they may be omitted whenever we are able to arrive at a positive diagnosis without them, and in all acute conditions, the latter generally tending to amelioration in a short while. Further, they are not absolutely necessary in chronic conditions which are apparently improving under the established regimen, and in the majority of purely nervous affections of the stomach. In cases in which there is suspicion of an ulcer, the tube should be used with utmost care, and, if possible, should be replaced by the stomach bucket. In cases of ulcer with hemorrhage it is best to forego both the tube and the bucket. Cases with symptoms pointing to a certain secretory disorder (as, for instance, hyperchlorhydria, gastrosuccorrhœa continua periodica or chronica) may first be treated without a verifying examination of the gastric contents; but if this treatment proves unsuccessful, an examination of the gastric contents should be made.

The large field in which these examinations of the gastric contents are necessary comprises all chronic affections of the stomach with doubtful diagnosis and which show but slight evidences of improvement. The examinations may help us to recognize the following conditions: 1. Chronic gastric catarrh. Acidity diminished; the ferments present; free HCl variable; mucus present in a large number of cases. 2. Achylia gastrica. Total absence of gastric juice; no HCl; no ferments; total acidity very low, almost neutral. 3. Cancer of the stomach. In many instances incipient cancer of the stomach may be recognized by the constant presence of the following symptoms: free hydrochloric acid absent; lactic acid present; acidity not especially low, sometimes increased; mucus; sometimes small amounts of blackish-looking blood and stagnant food. 4. Hyperchlorhydria. Free HCl present; acidity, 70–140. 5. Gastrosuccorrhœa continua chronica. Presence of about 60–100 c.c. of clear gastric juice in the stomach in the fasting condition. 6. Erosions of the stomach. Presence of a few small pieces of the gastric mucosa in the wash water of the stomach in the fasting condition. 7. Ischochymia. Presence of food in the stomach in the fasting condition.

Often the examination of the vomited matter may do away with the need of obtaining the gastric contents by artificial means. It is, however, readily understood that the vomited matter may occasionally fail to furnish exact data upon the condition of the gastric secretion, as it is likely to be mixed with mucus from the œsophageal walls and the mouth.

While the results of examinations of the gastric contents are useful in aiding to establish the diagnosis in gastric disorders, it is hardly necessary to say that we should not rely upon them alone. We must always combine all the data concerning any given case before arriving at a conclusion. It is only in this way that examinations of the gastric contents will be of great aid to us in helping to establish a more positive diagnosis, and in thus facilitating the treatment.

SLAYERS OF THE WOUNDED.

For a long time the people in this country refused to credit the accounts of attacks by Spanish troops upon Cuban hospitals, and of the butchery by them of doctors, nurses, and patients. The reports were believed to be manufactured in order to arouse sympathy for the Cuban cause, for it was incredible that such savagery could be practised and boasted of as gallant action by any race of white men at the close of the nineteenth century. But the reports became so frequent and so circumstantial that conviction was finally forced upon us, although even then the barbarity was not laid to the account of the Spanish in general, being rather thought to be part of Weyler's policy of murder. Now, however, any lingering doubts as to the truth of these stories and of the Spanish nation's responsibility have been dispelled by the action of the Spaniards themselves in shooting deliberately upon our wounded and their bearers at the battle of Santiago de Cuba.

All accounts of the battle agree in stating that these wretches paid no respect whatever to the Red Cross flag, although they bore unwilling and doubtless unconscious testimony to the honor of our own troops by flying this same emblem of humanity over some of their most exposed blockhouses, filled with gunners and sharpshooters in ambush for our men, thus protecting them from attack. One account says that there were many evidences of dishonorable methods of warfare upon the part of the Spaniards. One of their batteries was masked by a blockhouse over which the Red Cross flag was flying, and the road leading from General Shafter's quarters, on the Rio Sevilla, to the front, had for two days been infested at various points by sharpshooters, who fired deliberately upon our wounded.

The correspondent of *The Sun* says that while he was crossing a stream, leading a mule bearing a wounded Rough Rider, five shots were fired at them. The mule was killed, and Dr. Danford, a surgeon in the cavalry and at one time a surgeon in the Cuban government, was mortally wounded by a bullet passing through his head. A few moments later two other wounded men were shot at the same crossing.

Still another report reads that "one of the most horrible features of the war is the dozens of men who have been killed as they lay in litters, and the surgeons, although wearing the emblem of the Red Cross Society upon their arms, have been the special object of attack."

The Cubans are said to have treated the Spanish prisoners and wounded with equal ferocity, but that can hardly be a matter for surprise. They have the same blood in their veins, and, moreover, they are only doing as they have been done by for years.

The worst enemies of the Spaniards never brought more damaging testimony as to their character than they themselves have done by these and countless other acts of inhumanity. That they are fierce fighters when cornered cannot be denied, but their courage, like their cruelty, is that of the brute or the savage. They have all the qualities of the Turk or the American Indian, with only the thinnest veneer of modern civilization, and the sooner our soldiers learn that Spanish honor is a thing that is not to be trusted, the better it will be for their wounded comrades. It is a blessed thing for humanity and for the cause of civilization that Spain's rule beyond her own peninsula is soon to end, for slayers of the sick and wounded and of the ministers to them have no place among the rulers of the earth.

News of the Week.

The Medical Society of New Jersey held its one hundred and thirty-second annual meeting at Asbury Park, on June 28th, 29th, and 30th, under the presidency of Dr. David C. English, of New Brunswick. The following officers were elected: *President*, Dr. C. R. P. Fisher, of Bound Brook; *First Vice-President*, Dr. Luther M. Halsey, of Williamstown; *Second Vice-President*, Dr. William Pierson, of Orange; *Third Vice-President*, Dr. John D. McGill, of Jersey City; *Corresponding Secretary*, Dr. E. L. B. Godfrey, of Camden; *Recording Secretary*, Dr. William J. Chandler, of South Orange; *Treasurer*, Dr. Archibald Mercer, of Newark. It was decided to hold the next meeting at Deal Beach in June, 1899.

A Large Number of copies of the Medical Record of the issue for July 2d, intended for the subscribers in France, Italy, Switzerland, and Turkey, were included in the mail which was lost on the ill-fated *Bourgogne*. The publishers have arranged to forward duplicate copies by this week's steamer.

Murderers of Surgeons Taken. — Seven Spanish soldiers, who are known to have been in the band of sharpshooters who fired upon our ambulances at Santiago and killed Drs. Danforth and Troval, have been taken by our troops. It is probable that they will be hanged.

Gift of a Hospital to the Red Cross. — Mr. James Armstrong, of this city, has offered the Red Cross Society the use of his country house at Centre Hill, Fla., as a hospital. The house has twenty large rooms, and is built on the highest point of land in the State, about seventy miles from Tampa. It is surrounded by three hundred acres of land, and there is an ice-making plant near by.

The Danger of Yellow Fever in Key West. — There have been two cases of illness recently at Key West, which it is suspected may have been of yellow fever. One of the patients was a sailor on the *Yankee*, who was removed to the hospital for treatment of appendicitis. While recovering from the original trouble he was taken seriously ill and died in two days. The other case was in the person of one of the attendants at the Marine Hospital, and the question concerning the nature of his illness was still undecided when he recovered. Probably neither case was of yellow fever.

Feeding the Reconcentrados. — While prosecuting war against Spain, the government at Washington has not forgotten the main object of relieving the suffering so cruelly inflicted by Spain upon her former subjects

in Cuba. Of course, no relief can be extended to those still shut up in the cities occupied by Spanish troops, but great numbers of the former reconcentrados were driven out from the cities when the war began, and many of these are regularly fed by our government. Frequent expeditions carrying supplies have been landed secretly at various points on the coast, and two vessels are now nearly ready to sail, having on board 750,000 pounds of canned meat, 562,500 of flour, 750,000 of bacon, 90,000 of coffee, 100,000 of sugar, 60,000 of soap, 60,000 of salt, and 3,750 of pepper. The food is distributed in regular daily rations, the ration for each 100 persons a day being 100 pounds of corn meal or 75 of flour, 100 of beef, 6 of coffee, 10 of sugar, 4 of soap, 4 of salt, and 4 ounces of pepper.

Surgeons for New York Regiments.—Adjutant-General Tillinghast has announced the following appointments as a result of the recent examinations: Surgeon of the two hundred and first regiment, William E. Spencer, of Brooklyn; assistant surgeons, L. K. Graves, of New York, and John Wilson Poucher, of Poughkeepsie. Surgeon of the two hundred and second regiment, Daniel S. Burr, of Binghamton; assistant surgeons, James Wood, of Newburg, and Marshall J. Sheldon, of Buffalo. Surgeon of the two hundred and third regiment, Burton S. Booth, of Troy; assistant surgeons, William Alfred Burgies, of Utica, and Abram Lawyer Haines, of Schoharie.

A Red Cross Hospital at Miami.—Mr. Henry M. Flagler has presented to the Red Cross a site for a hospital at Miami, Fla., and has promised to have the first pavilion ready for occupancy within a week and to construct a second as soon as possible. The use of the hospital, fully manned with physicians and nurses, will be offered to the sceretary of war by the Red Cross Society.

General Army Hospital in Old Point Comfort.—It is reported that the government will establish at Old Point a general hospital, where the sick and wounded soldiers will be brought from Cuba for treatment. Tents will be pitched at Fort Monroe, and every provision will be made for the comfort of the sufferers. Twenty surgeons have been secured for service in the hospital.

Dr. James E. Newcomb has been appointed instructor in laryngology in the Cornell University medical department.

Dr. S. C. Ayres has been elected professor of ophthalmology in the Medical College of Ohio, the medical department of the University of Cincinnati.

Obituary Notes.—Dr. John Millspaugh, of Equality, Ill., died at his home in that place on June 17th, at the age of eighty-three years.—Dr. Joseph M. Turner, of Brooklyn, died at the home of his son in Washington, Conn., on July 3d, at the age of eighty-two years. He was a graduate of the medical department of Transylvania University, Lexington, Ky., in 1841, and had practised in Brooklyn for nearly half a century.—Dr. Joseph B. Elliott, a well-known homœopathic physician of Brooklyn, died in that borough on July 3d, at the age of seventy-seven years. He was born in Sharon, Conn., and was a graduate of the Yale Medical School in the class of 1853. He was a descendant of John Elliott, the first missionary to the Indians in Connecticut.

Red Cross Nurses to the Front.—The Red Cross Auxiliary Committee has suggested the sending of one hundred nurses and assistants as near to the scene of hostilities as may be practicable, to the end that they may be accessible for service with the least possible delay, and the relief committee announces that it is prepared to undertake the entire expense of transportation from New York to Tampa and such other places as it may be deemed necessary to send these nurses, and their maintenance while in the field and until their return to New York. Fifteen nurses left this city on July 2d for Cuba, and eleven nurses, two physicians, and two students on July 4th. Preparations are being completed also to send a ship to the Philippines with relief stores for the suffering which reports recently received declare to exist there. The mission has been put in charge of ex-Judge Joseph Sheldon, of New Haven, who will go to San Francisco, to take charge of the fitting out of the proposed expedition.

The Freedom of the City of Edinburgh was conferred on Lord Lister on June 15th.

Hospital Stewards in the Army.—A recent act of Congress fixes the number of hospital stewards in the army at two hundred. Major-General Miles has issued an order calling the attention of commanding generals of army corps to the fact, and saying that, owing to the number of hospital stewards now on duty in the field, ten only will be available for duty with each army corps.

A London Abortionist in the Toils.—An unregistered practitioner in London, who was a notorious abortionist, was recently arrested on the charge of causing the death of a married woman, said to be rich and well known in society, by an attempted abortion. His trial, which was concluded on July 2d, resulted in a conviction of manslaughter and a sentence to seven years of penal servitude.

School Yards as Playgrounds.—In accordance with a resolution passed by the school board for the boroughs of Manhattan and the Bronx, twenty of the public schools were opened as children's playgrounds on Wednesday of this week and will be kept open until September 3d. The board appropriated $15,000 for instituting these playgrounds, and provision was made for maintaining them. Calisthenic drills will be held, but, beyond a little sewing for those who desire it, no work will be given the children. Kindergarten teachers and young men and women recently graduated from college are to be secured as supervisors, instructors, and assistants.

Clinical Instruction for Columbia Students.—It is announced that arrangements have been made for giving clinical instruction to the students of the College of Physicians and Surgeons of New York, at St. Luke's and St. Mary's hospitals.

American Association of Genito-Urinary Surgeons.—At the meeting of the American Association of Genito-Urinary Surgeons, held at Cranston's Hotel, West Point, June 7 and 8, 1898, the following officers were elected for the ensuing year: *President*, Dr. James Bell, of Montreal; *Vice-President*, Dr. Samuel Alexander, of New York; *Secretary* and *Treasurer*, Dr. William K. Otis, of New York. It was decided to hold the next meeting at the Clifton House, Niagara Falls, in May, 1899.

More Hospital Ships.—Bids are now being received by the purchasing agent of the Charlestown navy yard for the furnishings of the new hospital ships, which are to be fitted out there.

Harvard Medical School.—An endowment of $25,000 has just come to the school by the will of the late Dr. Henry W. Williams.

A Physicians' Protective Association.—It is stated in a New York paper that all the physicians of Vineland, N. J., with one exception, have formed a protective association, with a standard scale of fees, and have sent to their delinquent patients notices to the effect that their names will be placed on a black list if satisfactory settlement of accounts is not made before a certain date. The association has requested the council to pay its members half-fees for visits to the poor of Vineland, but certain members of the council, who look upon the protective association as a trust, it is said, talk of engaging by the year the one physician who does not belong to the association.

Nurses from Servia.—It is reported in the papers that the ex-Queen Nathalie of Servia has organized a mission to be sent to the seat of war in Cuba, to give aid to the wounded of the contending armies.

Sobriety in the Volunteer Army.—Dr. N. Senn, of Chicago, chief surgeon, sixth army corps, writes from Chickamauga to the *Journal of the American Medical Association:* "To the credit of our soldiers it must be said that evidences of intemperance are rarely seen in camp. Temperance canteens are common and are better patronized than those in which beer is sold. I have not seen an intoxicated soldier since I arrived in camp."

Medical College Consolidation.—It is announced that the Atlanta Medical College and the Southern Medical College have united to form the Atlanta College of Physicians and Surgeons. Dr. A. W. Calhoun is the president of the new faculty, and Dr. W. S. Kendrick is the dean.

The Latin-American Scientific Congress.—A correspondent of *The Lancet* writes that the first scientific congress which has ever been held in South America, organized by the Sociedad Cientifica of Buenos Ayres, was opened in that city on April 11, 1898. The members numbered about six hundred, and included delegates and visitors from every republic in South America and also several delegates from Mexico, so that the organizers have every reason to be proud of the success which has attended this, the first effort to collect together men of science and learning from the continent of South America. In point of numbers the Argentine Republic heads the list, with over three hundred members; then follow Chili, Uruguay, Brazil, Paraguay, Peru, Ecuador, Mexico, etc. In the medical section many of the subjects discussed were of local interest chiefly, but some are of universal interest, such as leprosy, tuberculosis, vaccination and small-pox, infectious and contagious diseases in relation to sanitary works, subsoil drainage and changes in atmospheric pressure, inoculation in carbuncle and the preparation of anticarbuncular serum, the microbiology and therapeutics of whooping-cough, the *x*-rays in surgery, suicide and mental diseases, and gonococcus—its toxin and serum, etc. The president of the medical sciences section was Dr. R. Wernicke, the secretary was Dr. Araoz Alfaro, and the meetings took place every afternoon from 2 to 7 P.M. The attendance was good and the members were fairly representative, the discussion being carried on chiefly by the younger professors and teachers in the medical faculty and schools.

"Phossy Jaw" is what the English call instances of phosphorus poisoning now being unearthed in some of their large match factories.

The Southern Hospital Train, to be run, when necessity arises, from Tampa to northern points, consists of two dining-cars, ten sleepers, and a baggage car. The sleepers will accommodate five hundred men, if necessary. One car is arranged as an operating-room. The train will be kept at Tampa for the present as a stationary hospital for the sick and wounded, but will be ready at an hour's notice to start north whenever it is thought best to remove the patients to a cooler climate. The Daughters of the American Revolution will keep the hospital train supplied with delicacies for the sick.

Emergency Kits for Soldiers in Battle.—It was intended to supply every officer and man of the invading army under General Shafter with an emergency kit, whereby he might temporarily dress his own wounds when not too severe. Each kit is done up in a waterproof package, and consists of two compresses, one roller bandage, and one triangular bandage. It costs thirteen cents, and sixty thousand of them were shipped to Tampa before the transports sailed to Santiago.

Yaws is one of the tropical diseases with which American physicians will probably be more or less concerned. This prevails to a considerable extent both in the West Indies and in many of the Pacific islands.

Tuberculosis and Vaccination.—The following resolution, introduced by Dr. Pablo Lozano, was adopted at one of the sessions of the International Congress of Hygiene and Demography, held at Madrid during Easter week: "Inasmuch as tuberculosis is easily transmitted by vaccination when it is done directly from the calf, the International Council of Hygiene and Demography asks that in all the nations represented at the meeting the practice should be adopted of using in official vaccination stations only the lymph of calves which have been examined post mortem and pronounced to be free from tuberculosis."

Martyrs to Duty.—Under this heading the *British Medical Journal* refers to two medical men who have recently fallen victims to typhus fever in Ireland. The first was Dr. Paul Dillon, of Killarney, a gentleman who was greatly beloved in his district. He had previously been assistant physician to St. Vincent's Hospital in Dublin, and was a very highly trained practitioner. He was a comparatively young man, having qualified in 1883. He contracted the fever while visiting a poor patient in consultation, and in the same nest two other medical men were also infected, although they have happily recovered. From the north of Ireland the death of Dr. Thomas Sullivan, son of Mr. T. D. Sullivan, M.P., is also announced from the same cause. Here again the disease was the result of a visit to poor dispensary patients, and death resulted in three days. These are fresh instances of the terrible risks which every day threaten the medical man, and from which no fear for personal safety makes him shrink.

English as She is Wrote.—The present Tsar would seem to be not ready to willingly take the position of a figurehead that the hereditary ruler even of an absolute monarchy is more or less relegated to.—*The Philadelphia Medical Journal*, June 25, 1898.

"Anales de la Sociedad Mexicana de Cirujia."—The first number of the Annals of the Mexican Surgical Society, bearing date of June 15, 1898, has been issued. It will be published monthly, under the editorial supervision of Dr. Manuel Barreiro.

Medical Legislators.—The recent election for members of the French chamber of deputies resulted in the return of fifty-seven medical men. The picturesque Mohammedan doctor, whose strict attention to his religious duties amused Paris for a time, was not re-elected.

A Ban against Corsets in Russia.—Hospodin Bogoljewow, the newly appointed Russian minister of public instruction, has begun the duties of his office by issuing a drastic order to the effect that corsets must not be worn by Russian young women attending high schools, universities, and music and art schools. They are to be encouraged to wear the national costume. The minister says that he has spent much time in visiting girls' schools, and has made the discovery that the corset as an article of dress is distinctly prejudicial to the health and physical development of the wearers.

The Toxin of Tuberculosis.—It is reported in the newspapers that a San Francisco bacteriologist has succeeded in isolating the tuberculosis toxin. The method, according to the newspaper account, is as follows: The pure culture is washed in water acidulated with hydrochloric acid. It is then washed again in pure distilled alcohol and then filtered. The filtrate is then distilled, and the residue dissolved in water and precipitated with phosphomolybdic acid. Again the product is filtered and the residue broken up with baryta water. The barium is then precipitated with carbon dioxide. The filtrate is then evaporated and the residue exhausted with alcohol, which gives the alkaloid in a comparatively pure state.

The Indiana Medical Law Sustained.—Judge Howard, of the Indiana supreme court, has affirmed the constitutionality of the law creating a board of medical registration. It had been urged that the law was an improper one, since it interfered with personal liberty, but he said that "whether the law is a wise one is not for the courts to say. It may be that as men are free to choose those who shall minister to the needs of the soul, so also they should be free to choose those who shall minister to the ills of the body. It may be that such laws repress independent investigation, and so retard the progress of medicine. It may be that many of the most valuable medical discoveries were made in spite of the prejudice and protests of men learned in the old and time-tested lore of their day. It may be, finally, that such laws are out of harmony with free institutions, according to which each citizen may pursue his own work, his own studies, his own occupation, in so far as he does not trench on the equal rights of his fellows and the welfare of the community in which he lives. These are, however, questions for the legislature, and, so long as the act is not clearly in violation of any provision of the constitution, it cannot be held invalid."

Foreign Medical Practitioners in Italy.—The Italian government has abandoned its intention of preventing foreign physicians from treating their own countrymen in Italy unless they acquire a diploma from an Italian university. The present law grants them this privilege, but forbids them to give any medical advice to Italians.

The Academy of Medicine of Paris.—For forty years this learned society has had no home, its meetings being held in the old chapel of the Charité Hospital. It owns ground near the Luxembourg, which the government has appropriated for a school of chemistry. In compensation for this lot the French legislature has appropriated a sum sufficient for the purchase of a site for a building on the Rue Bonaparte. On this ground the academy will soon erect a suitable building where its meetings can be held and which then will be used for storing transactions, for the library, or for the various departments which are under the care of the academy—for instance, the vaccination department, the board in charge of prophylaxis and treatment of epidemic diseases, the board to which is intrusted the care of the various mineral springs, the sanitary and statistical departments, and the office for dealing with awards granted for sundry scientific researches.

A Mission Hospital in Tabriz.—A room in the mission hospital in Tabriz, Persia, has been furnished in memory of Mr. Theodore Child, who died there some years ago of typhoid fever, while on a literary mission for a publication in this city. A bronze memorial tablet will be set up on the wall of the ward. The tablet is a relief portrait of Mr. Child, with an inscription in English and Persian.

The Prince of Wales' Hospital Fund has received from a lady, who withholds her name from publication, the very substantial addition of £1,000.

Society Reports.

AMERICAN NEUROLOGICAL ASSOCIATION.

Twenty-Fourth Annual Meeting, Held at the New York Academy of Medicine, May 26, 27, and 28, 1898.

First Day—Thursday, May 26th.

DR. G. M. HAMMOND, OF NEW YORK, PRESIDENT, IN THE CHAIR.

Results Obtained by Partial Thyroidectomy in Eight Cases of Graves' Disease.—DR. J. ARTHUR BOOTH, of New York, read a paper with this title (will be published later).

DR. THEODORE DILLER, of Pittsburg, asked whether any bad symptoms developed immediately or shortly after the operation in the successful cases reported by Dr. Booth.

DR. J. J. PUTNAM, of Boston, said he had previously reported two cases of thyroidectomy for Graves' disease, with death following in one instance and gradual improvement in the other. Since then he had had another case, which resulted fatally after the removal of the cervical sympathetic. A very favorable point in connection with the cases reported by Dr. Booth was that the operations were all done by the same surgeon.

DR. WILLIAM M. LESZYNSKY, of New York, said he had had two cases operated on during the past year. In one case there was considerable improvement in all symptoms; in the other the patient died thirty-six hours after the operation. There was no kidney complication and death was ascribed to acute thyroidism. This was a well-pronounced case, and the patient was allowed to rest for nearly two weeks previous to operation.

DR. BOOTH said that, with the exception of a slight rise in temperature, there were no alarming symptoms subsequent to the operation in any of his cases, excepting in the fatal one.

Acute Myxœdema (?) with Tachycardia, Delirium, and Death.—DR. WILLIAM OSLER, of Baltimore, described the case of a man, aged thirty-one, of good family history and good habits, who, from October 1, 1896, to January 1, 1897, increased in weight from one hundred and forty-five to one hundred and ninety-two pounds. Except an occasional attack of diarrhœa and an increasing irritability, there were no symptoms. On February 5th he went to Florida, and there became excited and delirious and had delusions. On his return to his home there was slight exophthalmos. The subcutaneous tissues were everywhere infiltrated, brawny, and did not pit; the skin was dry, and on the chest was a red papular rash. The pulse was 120 a minute. The thyroid gland could not be felt. The temperature was normal. The urine was free from albumin and sugar. For the first two weeks he remained in about the same condition. He had attacks of diarrhœa, and at times there was blood in the stools. On March 1st he was given thyroid extract. He lost rapidly in weight and became delirious. Albumin and sugar appeared in the urine. He grew progressively weaker, and died March 13th. Dr. Osler remarked that myxœdema followed in a considerable number of cases of exophthalmic goitre, and at times certain symptoms of the latter disease had appeared in patients taking the thyroid extract. In this patient there was a rapid increase in the subcutaneous tissue, with a bloated, infiltrated appearance of the face, but not the waxy characteristic facies of myxœdema. The increase in weight and size was remarkable, so that the patient had to have a completely new outfit of clothing. Tachycardia, tremor, and slight exophthalmos supervened, with mental symptoms, coincident with the use of the thyroid extract, of which only twenty-five grains was given. He began to lose weight. Albumin and sugar appeared in the urine. He became delirious and died of exhaustion.

DR. BOOTH referred to one of his cases (the one in which there was no improvement after thyroidectomy), which presented some of the symptoms mentioned by Dr. Oslei. There was a rapid increase in weight, from one hundred and twenty-eight to one hundred and sixty pounds; the face was puffy, and the patient had frequent and severe attacks of diarrhœa and a very rapid pulse.

DR. OSLER thought that in those cases in which sudden death followed operation it was possible there might have been a condition of so-called *status lymphaticus*, in which, as was generally known, sudden death was liable to occur.

Amyotrophic Lateral Sclerosis with Bulbar Symptoms.—DRS. F. X. DERCUM and W. G. SPILLER, of Philadelphia, reported a case of this disease. The microscopical examination showed degeneration of the lateral columns, involving a greater area than that occupied by the crossed pyramidal tracts, and a slight sclerosis of the posterior columns in the lower cervical and upper thoracic regions. The pyramidal tracts were not degenerated above the pons. The bulbar symptoms were due to degeneration of the motor tracts and not of the motor nuclei. The writers discussed the significance of the degeneration in the posterior columns, and showed how the symptoms of amyotrophic lateral sclerosis could exist without degeneration of the pyramidal tracts.

Amyotrophic Lateral Sclerosis.—DR. E. D. FISHER, of New York, read the paper. He considered amyotrophic lateral sclerosis a disease of a character similar to that of progressive muscular atrophy, chronic poliomyelitis, and tabes. All these were simply degenerative diseases of the nervous system. Amyotrophic lateral sclerosis was not an entity, and the name in future would probably be abolished. It was rare, indeed, to find a so-called typical case of progressive muscular atrophy, in which the lesion was confined to the anterior horns. The same might be said of tabes, the lesion extending beyond the posterior columns, involving the lateral tracts, and also the peripheral nervous system. The so-called systemic or tract diseases were relics of an old-time nomenclature, which would ultimately disappear. In all these diseases the physician had to deal with diffuse affections of the spinal cord, medulla, and brain. The author presented microscopical sections from a case which, he said, was a typical clinical picture of amyotrophic lateral sclerosis, and which showed disease of both lateral and posterior columns and the anterior horns.

DR. DERCUM said that the case reported by himself and Dr. Spiller was apparently one of lateral sclerosis, the lateral column symptoms preceding the muscular atrophy. The presence of the bulbar symptoms was probably referable to minute lesions in the border tracts above the nuclei. He was hardly prepared to go so far as Dr. Fisher in regarding tabes as being actually related to the disease known as amyotrophic lateral sclerosis.

DR. CHARLES K. MILLS, of Philadelphia, said that there were three distinct subtypes of this disease. In one type the symptoms of so-called primary lateral sclerosis developed early, with contractures and bulbar symptoms later. In the second type there was muscular atrophy in the limbs, and in the third type the special bulbar symptoms developed very early. He thoroughly agreed with Dr. Fisher that amyotrophic lateral sclerosis should be removed entirely from the classification of spinal diseases; that it could not be regarded as purely cerebral, or spinal, or peripheral,

but should be looked upon as an affection of a special system of neurons attacked by a degenerative process.

Dr. P. C. Knapp, of Boston, believed that, while the three types mentioned by Dr. Mills were now recognized, many transitional types were met with which did not fit any one of them. It must be assumed that there was but one pathological entity.

Dr. H. M. Thomas, of Baltimore, agreed with Dr. Knapp. He thought that amyotrophic lateral sclerosis was a bad name, combining, as it did, a symptom and a pathological finding in one term. It would be better to consider these conditions as due to degenerative lesions in the motor tract, which were simply variations of one and the same trouble—sometimes beginning in the upper motor segment, sometimes in the lower, and usually involving both.

Syringomyelia and Tabes with Sensory Dissociation on the Trunk.—Dr. Hugh T. Patrick, of Chicago, reported a case of syringomyelia showing analgesia of almost the entire trunk, including the arms, with a narrow zone of tactile anæsthesia about the middle of the body, such as had been recorded by Lachr and the author as occurring in this disease. Two cases of locomotor ataxia that presented almost the same sensory conditions were then described. This sensory dissociation on the trunk was opposed to the rule in tabes, for in this disease the sensory blunting on the trunk was usually a tactile anæsthesia with no analgesia whatever or only a comparatively narrow zone in the middle of the anæsthetic area where pain sense was lost. One of the cases of tabes, however, presented atrophy of one trapezius muscle and deformity of one foot, conditions almost identical with those seen in the patient with syringomyelia. This tabetic patient had, besides, suffered spontaneous gangrene of two toes, a complication much more characteristic of this latter disease than of locomotor ataxia.

Syringomyelia with Unusual Symptoms. — Drs. William N. Bullard and John J. Thomas, of Boston, reported the case of a boy, previously healthy and of fairly healthy antecedents, who, when three years old, became subject to attacks of headache of much severity, lasting an hour or more; these were soon accompanied by vomiting, and increased in frequency and severity. This condition continued three years, growing gradually worse, and at the end of that time staggering was noticed and a severe double optic neuritis occurred, which soon produced double optic atrophy and nearly total blindness. The headaches, vomiting-attacks, and blindness continued much the same for nearly two years—the remainder of the patient's life. At times the pain and prostration were such that he was in bed for days or weeks at a time; then he would improve, and would be able to be up and about like a healthy child. During this time there was great increase in the general adipose tissue, so that the patient became obese, and to this condition were added later exophthalmos and an appearance suggesting myxœdema. These two symptoms, however, disappeared after a month or two. During the first part of this time (in March, 1895) there was temporary paresis of both external recti and nystagmus. There were no further changes in the symptoms until about ten months after the blindness began, when there was a sudden attack of paraplegia, accompanied by incontinence of urine and fæces, which became permanent. At the same time there appeared a paralysis of the left face and some weakness of the upper extremities, but these soon disappeared. Bedsores developed, but later improved, and the child was in good general condition although the obesity had somewhat diminished at the time of death, the result of typhoid fever.

At autopsy there was found a marked dilatation of the ventricles, including the fourth, and of the iter, resulting from the hydrocephalus. The branching cavity in the cord seemed to originate in the gray matter and not to be a diverticulum of the central canal, although at the point of greatest dilatation of the cavity in the lower cervical region the central canal opened into and became a part of the general cavity. Above the point of greatest dilatation of the cavity there was an ascending degeneration of the direct cerebellar tract, the tract of Gowers, and the posterior columns. Below this point there were marked degeneration of the direct and crossed pyramidal tracts, and diffuse atrophy of the posterior columns. There was also well-marked atrophy of the tract of Gowers. At the point of greatest dilatation of the cavity there were extensive degeneration of all the fibres of the white matter of the cord and marked distortion of the gray matter, in which, however, fairly normal nerve cells were found in moderate numbers. There were diffuse increase of neuroglia fibres in the atrophied tracts, and marked neuroglia proliferation about the cavity in the cord.

Dr. Knapp, of Boston, said that the study of sensory disturbances, especially in tabes, showed that they did not follow any definite course. As a rule, in tabes the analgesia was more extensive than the anæsthesia. It had long been a question in his mind whether analgesia was the result of a slight disturbance of the sensory tract and anæsthesia the result of a much greater disturbance, or whether two separate tracts, one for pain and one for anæsthesia, were being dealt with.

Dr. B. Sachs, of New York, thought the view that the well-known sensory symptoms of syringomyelia were almost pathognomonic of that disease could no longer be entertained. He had observed two cases of Potts' paralysis with dissociated sensory symptoms confined to the extremities. In two other cases there was dissociated sensation in the distribution of the trigeminal nerve. He inquired whether such cases had been observed by any one else.

Dr. Frank R. Fry, of St. Louis, said that he had seen two such cases in addition to one case which he had already reported.

Dr. Patrick, in closing the discussion, said he did not agree with the statement of Dr. Knapp that in tabes, as a rule, the analgesia was more extensive than the anæsthesia. On the trunk tactile anæsthesia was more extensive than the analgesia, and appeared sooner. The ordinary dissociation of sensation on the extremities in Pott's disease was not very uncommon.

Landry's Paralysis.—Drs. Charles K. Mills and W. G. Spiller, of Philadelphia, reported a case in which paralysis developed very rapidly in a man previously healthy, and after one week the man died, completely paralyzed in all the extremities. Sensation was preserved until death. One of the external popliteal nerves examined was found degenerated, and the motor cells of the spinal cord presented the lesions known as central chromatolysis. The writers reviewed the cases published in the literature, and discussed the value of central chromatolysis as indicative of secondary changes within the cell body. They believed that transitional forms of acute ascending paralysis occurred, which made the diagnosis between Landry's paralysis, polyneuritis, and myelitis difficult. Landry's paralysis might be due to myelitis or to neuritis, and it was possible that in some cases no lesions could be found.

Dr. Mills held the view that in many of these forms of acute toxæmia or infectious disease it was very probable the entire peripheral motor neuron—or whatever system was affected—was attacked at one and the same time.

Congenital Facial Diplegia.—Dr. H. M. Thomas, of Baltimore, reported the histories of two brothers, aged twenty-one and nineteen respectively, who showed this remarkable defect. The family history was un-

important, except that the mother's aunt had given birth to a deformed child and that the mother herself had had a baby with a deformed foot. The birth of the elder boy was difficult, but no instruments were used. That of the second boy was normal in every respect. In each case it was noted shortly after birth that the baby was unable to close his eyes and that the lower lip drooped. Except for the facial deformity, the children developed normally. There was nearly complete bilateral facial paralysis, the patients being able only to retract and depress the corners of the mouth. Combined with this there was partial deafness in both ears and the lobes of the ears were misformed. Movements of the eyeballs were perfectly normal and no other abnormality was discovered. Dr. Thomas brought these cases into relation with the cases of congenital facial paralysis combined with defect in the movement of the eye muscles, and with a few cases of uncomplicated unilateral congenital facial paralysis, and less directly with congenital muscle defects in other parts of the body. In regard to the pathological basis of the condition, nothing definite could be said, as there were no unequivocal autopsies. He believed that it was most satisfactory to assume a maldevelopment or a non-development of the nuclei of these nerves.

Dr. Spiller, of Philadelphia, referred to the relationship between the condition described by Dr. Thomas and progressive muscular dystrophy of the Landouzy-Dejerine type. In the latter affection the orbicularis palpebrarum and the muscles about the mouth were the ones usually involved, and the affection might exist for years without atrophy of any other muscles.

Dr. Sachs, of New York, considered that the muscular element was very much more at fault than the nuclear. These cases were not necessarily neural in origin; while some of them might be, others would show that only the muscular or osseous systems were involved.

Dr. Thomas said that the question of the probable relationship between this condition and progressive muscular atrophy was not new. He regarded the symptoms in his case as congenital, and expressed the opinion that it would be unusual to see a case of muscular dystrophy of the facial type which dated from birth and persisted until the twentieth year without affecting any other nerves.

Multiple Syphilitic Neuritis.—Dr. Frank R. Fry, of St. Louis, read the notes of a case of this sort. A man, thirty-two years of age, contracted syphilis in the fall of 1896. A year later he had a sudden right hemiplegia, the face escaping. The paralysis was slight, the patient walking with a hemiplegic gait and retaining considerable use of the hand. The knee jerk and the wrist jerk on the paretic side were exaggerated. Three weeks later a paraplegia developed, which became complete and was followed by marked weakness of the hands, with hyperæsthesia and paræsthesia in all the extremities. The knee jerks were lost, and later there was reaction of degeneration in the muscles of the legs. After eight weeks improvement began, and it had been continuous. He had since been able to resume his business. The diagnosis was based on the characteristic sensory symptoms—reaction of degeneration, absent knee jerks, the extensive distribution and peripheral character of the paralysis, and the manner in which the paralysis and sensory symptoms cleared up, leaving no evidence of focal lesion of the central nervous system. It was assumed that the neuritis was due to syphilis, because no other cause seemed apparent. There was nothing in the patient's habits or occupation which predisposed him. He was not an alcoholic and had no rheumatic tendency. Mercury was used by inunctions, but a severe constitutional effect was not produced, nothing more than a slight sensitiveness of the teeth. The drug produced no cachexia or local lesions in the joints or elsewhere, although it was used freely after the neuritis appeared.

Dr. C. L. Dana, of New York, said that his experience with multiple neuritis and with syphilitic affections of the nervous system led him to regard it almost as a pathological law that multiple neuritis never resulted from syphilis. In order to prove such a case, every other possible cause of the neuritis must be excluded.

Dr. Sachs, of New York, thought Dr. Dana had stated the other side of the case a little too strongly. He was of the opinion that the evidence of a multiple neuritis or a peripheral neuritis of syphilitic origin had been fairly well established.

Dr. M. A. Starr, of New York, agreed with Dr. Dana, and said that, although he had been on the watch for a case of multiple neuritis of syphilitic origin during the past ten years, he had never seen one which he was willing to pronounce as distinctly syphilitic.

Dr. J. J. Putnam, of Boston, held the same opinion as expressed by Drs. Dana and Starr.

Dr. Leonard Weber, of New York, said he could not recall a single case of multiple neuritis occurring in a series of one hundred and twenty-five cases of syphilis which had been under his observation more or less constantly for nearly twenty years.

Dr. Fry, in closing, said he had expected that his diagnosis would be criticised. In the case under discussion the history and symptoms had led him to the belief that the neuritis was of syphilitic origin. He was, of course, unable to establish the fact positively.

Herpes Zoster.—Dr. Leonard Weber, of New York, read a paper with this title (see page 39).

Dr. J. J. Putnam, of Boston, was inclined to believe that the lesion in these cases was far back, although perhaps not so far back as the ganglion.

Dr. Spiller, of Philadelphia, said that these cases certainly seemed to be connected with disease of the nerves, especially of the sensory branches. He did not know of any case in which the motor fibres alone were involved.

Dr. W. M. Leszynsky, of New York, said that in recent years he had come to regard herpes zoster as one of the symptoms of a peripheral neuritis, and he treated the patient accordingly with excellent results. For the purpose of relieving the acute pain, especially in the intercostal variety, he had found the use of the Paquelin cautery remarkably efficacious. One application to the spine in the region of the corresponding posterior roots was often sufficient to relieve the pain, and in most cases rendered special internal treatment unnecessary.

Dr. Sinkler agreed with Dr. Weber's view, that in herpes zoster the lesion was not always a peripheral one, but might be situated in the cord or in the ganglion.

Dr. C. L. Dana believed that in most cases the trouble was in the nerve; probably in the sensory branch and deeply seated. It was not uncommon to see these attacks followed by severe forms of neuralgia, affecting either the intercostal, crural, or trifacial nerves.

Dr. Weber, in closing the discussion, said that, as none of his cases had come to autopsy, he could not tell whether they were of local or of central origin. He believed, however, that certainly one-half of the cases were of peripheral origin.

Purulent Internal Pachymeningitis, Complicating Middle-Ear Disease.—Dr. William Leszynsky, of New York, reported the following case: The patient was a man, twenty-three years of age, who had been affected for many years with chronic suppurative otitis

of both ears. He complained of pain in the right ear and tenderness over the mastoid region. There were also rigors, high temperature, and sweating, indicating a probable infective sinus thrombosis. The mastoid and sinus were explored with negative result. The same symptoms continued unabated, and subsequently he developed increasing hebetude, double optic neuritis, motor aphasia, right facial paralysis, and right hemiplegia. There was no disturbance of sensibility. The patient never complained of headache, nor were there any other symptoms indicating an acute involvement of the left ear. The left temporo-sphenoidal lobe was thoroughly explored for an abscess formation, but none was found. Death occurred twenty-four hours later. The autopsy revealed purulent internal paehymeningitis limited to the dura over the left Rolandic region, and softening of the central convolutions on the same side. On the left side the tympanum was entirely destroyed by caries, and the sinuses were completely disorganized, while on the right side the sinuses were normal. Dr. Leszynsky dwelt at length on the difficulties so often met with in making a correct localization in cases such as that reported.

Dr. E. B. Angell, of Rochester, had had under his care a patient who had previously been treated for middle-ear trouble. Subsequently delirium set in, but there were no focal symptoms. The general symptoms were those of pyæmic infection. The question of opening the skull and searching for pus was considered, but recovery finally took place without operation.

Dr. G. L. Walton, of Boston, said that Macewen had shown that temporo-sphenoidal abscess extending inward affected first the leg, then the arm, and finally the face; extension upward following the inverse order. In the case under discussion the arm received the brunt of the injury, which made the diagnosis more difficult. His own experience with a case of tumor in this locality tended to confirm Macewen's rule.

Dr. Leszynsky, in closing, said that the course of the paralysis in his case would not permit exclusion of temporal abscess, as an abscess in that location might involve the arm and face more than the leg. While Macewen's views and experience might apply to his own cases, the speaker thought they could not be accepted as an absolute law.

Serous (Alcoholic) Meningitis Simulating Brain Tumor.—Dr. Theodore Diller, of Pittsburg, reported a case of this nature. The patient had been getting progressively worse for six months, presenting during this time severe headache, frequent vomiting-attacks, failing vision due to optic neuritis, weak ataxic gait, loss of knee jerks, tenderness in the legs and burning in the feet, and finally general convulsions followed by marked mental changes. It seemed quite plain that the man was suffering from multiple neuritis due to alcoholism. The ataxic gait, weakness, wasting, and tenderness of legs and burning of feet with diminished knee jerks were explained by this diagnosis. There remained, however, the headache, vomiting, optic neuritis, convulsions, and mental symptoms to be accounted for. These seemed to indicate the presence of a brain tumor, although the fact was recognized that the mental symptoms were very similar to those seen in alcoholic multiple neuritis. The autopsy failed to reveal a brain tumor, but disclosed great dilatation of the pial vessels with a large amount of clear colorless fluid beneath the pia. There was intense congestion of the pia in several spots, but only a little more than the usual amount of fluid was found in the ventricles.

Dr. W. L. Worcester, of Danvers, was in doubt whether the post-mortem findings accounted for all the symptoms. An exudation of serous fluid into the meninges did not necessarily imply an inflammatory condition, although it might have done so in this case.

Dr. Dercum, of Philadelphia, said it was a well-known fact that serous meningitis was very apt to be mistaken for brain tumor. In this form of meningitis there might be diffuse headache, a high grade of optic neuritis, and nervous manifestations which were often suggestive of tumor.

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Second Day—Friday, May 27th.

Myotonia.—Dr. George W. Jacoby, of New York, read a paper with this title. He considered Thomsen's disease (myotonia congenita) a clinical type, to which nothing could possibly be added; the term should, however, be limited to the actually congenital cases of myotonia, and should exclude all others. For the latter some other designation must be sought. It would be better to class all cases under the generic term myotonia, and then to subdivide into myotonia congenita, myotonia acquisita, and myotonia transitoria. Cases which presented only spasm upon voluntary movement, but no myotonic disorder or reaction, should be classed as intention spasm. He related the histories of three cases, two of which had previously been presented at a meeting of the New York Neurological Society. These cases illustrated the various types of myotonia. In one case, in which the patient acquired the disease at the age of eighteen, after an attack of typhoid fever, pieces of muscle were excised and subjected to microscopical examination. Transverse and longitudinal sections gave the microscopical picture of the changes hitherto considered pathognomonic of Thomsen's disease. Dr. Jacoby concluded that the proof of the myopathic nature of this affection, derived from examination of excised pieces of muscle, was insufficient, and that the changes thus found were due to the abnormal contractility of the muscles in this disease and merely corroborated the clinical fact of this hypercontractility. Whether the hypercontractility was due to a disorder of the muscular or of the central nervous system could therefore not yet be stated. The fact that one of the cases occurred after an attack of typhoid fever led Dr. Jacoby to inquire whether such an accidental cause in the form of any acute infection might not frequently be the actual productive agency of the disease, such infection acting upon inherently weak nerve cells. The knowledge of the pathogeny of myotonia must remain obscure until a careful cytological examination of the brain and spinal cord had been made.

Dr. G. M. Hammond, of New York, presented three children, all members of the same family, as cases illustrating a myotonic disorder. The disease did not manifest itself until their eighth year. Previous to that age they appeared to be like other children, excepting that they were very dull and could not get along at school. All three had a peculiar facial expression; they were depressed and subject to violent crying-spells at the slightest provocation. One of the girls had been subject to chorea, and subsequently developed the myotonic disorder. The disease in these cases was entirely confined to the hands and arms. The hand could readily grasp an object, but there was difficulty in letting go of it. The mental deficiency in these cases seemed to indicate some degenerative cerebral change, perhaps in the pyramidal cells of the cortex.

Dr. Theodore Diller, of Pittsburg, said he had examined the first patient referred to by Dr. Jacoby, and there was in addition to the other symptoms a distinct spasm of the extrinsic ocular muscles and of the orbicularis palpebrarum. The case did not impress him as being of psychical origin.

Dr. W. G. Spiller, of Philadelphia, had seen two

cases in which an intention spasm was present. One was a case of syringomyelia, and the other of brain tumor. According to present knowledge of the subject, myotonia and muscular dystrophy presented many features in common. In the only case of Thomsen's disease in which a necropsy was obtained—that of Dejerine and Sottas—the lesions in the muscles were very similar to those described by Dr. Jacoby.

Dr. Jacoby concluded that under the classification of myotonia only those cases should be included which presented certain definite symptoms. In addition to the intention spasm there should be an absence of anything pointing to gross disease in the central nervous system.

Amaurotic Idiocy.—Dr. Frederick Peterson, of New York, presented the report of a case with autopsy. The patient was a little over seven months old at the time of death, and was one of three amaurotic idiots in a family of five children. The child presented the usual symptoms of the disease, and died of bronchopneumonia following measles. There were never any symptoms of organic brain lesion. At autopsy the brain was found to show grossly the usual features of defective development. The pathological changes in the case were limited to the nerve cells of the cortex and medulla, which were found markedly deficient in number and in development in the occipial region, about the calcarine fissures, in the temporo-sphenoidal lobes, in the frontal lobes, in the motor areas, in the corpora quadrigemina and geniculate bodies, and in the third and fourth cranial nerve nuclei. The alterations of the chromatic substance of the cells must be referred largely to the general condition of the patient before death and not to the disease under discussion. The lesions in the chromatic substance in the atrophic cells could not be accurately determined. No definite changes in fibres or tracts were discovered.

The Pathological Anatomy of Amaurotic Family Idiocy.—Dr. William Hirsch, of New York, read a paper with this title, and reported the case of a child, ten months old, who had died after being under observation one year. The autopsy was made four hours after death. The microscopic examination revealed very marked changes in all the nerve cells of the entire central nervous system. Serial sections had been made through the spinal cord, the medulla oblongata, corpora quadrigemina, optic thalamus, caudate nucleus, cerebellum, and through the entire cortex of the brain, and not a single normal cell was found. All the nerve cells were enormously enlarged; the cell body was swollen, in some instances to three times its normal size. The Nissl granules were transformed into a pulverized mass. The nucleus with its nucleolus was displaced to the periphery of the body. The processes were very few in number and often broken off. There were degeneration of the pyramidal tracts in the spinal cord and medulla oblongata and atrophy of the optic nerves. The neuroglia and the blood-vessels were perfectly normal throughout the entire nervous system. The clinical evidence as well as the anatomical findings proved that the assumption that the disease consisted of an arrest of development was erroneous, and showed that the disease was an acquired one. The typical change in the nerve cells, and the fact that all the nerve cells and nothing but the nerve cells of the entire nervous system were affected, made it very probable that the condition was a toxic one, with a direct action of some poison on the nerve cells.

Dr. Ward A. Holden, of New York, then made a report on the pathological findings in Dr. Hirsch's case. The changes in the eyes were confined to the ganglion cells of the retina. In sections of a Müller's-fluid eye the ganglion cells were enlarged and globular but had central nuclei; stained with Weigert's hæmatoxylin or with hæmatein, they appeared filled with black metaplasm granules. In formol sections of the eye, cut in paraffin and stained by Nissl's method, the ganglion cells appeared to consist only of the cell reticulum (Nissl granules being absent) and a darkly stained granular nucleus. These staining-reactions were identical with those given by the cortical cells of two brains of amaurotic idiocy—one hardened in Müller's fluid, one in formol—with which the eye preparations were compared. In the normal eye the ganglion-cell layer about the fovea was but three or four cells deep, and farther away it thinned down rapidly. The gray patch seen about the fovea in this disease was one and one-half to two disc diameters in width, and faded out gradually at its periphery into the normal red of the fundus. It occupied that portion of the retina in which the ganglion-cell layer was four or more cells deep, the swollen ganglion cells rendering the retina opaque and obscuring the red color of the choroid except in the fovea, where ganglion cells were wanting. There was no actual œdema, as had been supposed, and the other layers of the retina were normal. In the optic nerve there were a breaking down of the myelin in many fibres of each bundle and an increase in neuroglia tissue—a secondary degeneration of the neuraxons of the affected ganglion cells of the retina and of the basal ganglia. The retina, which, the speaker said, arose, like the brain, from the involuted neural ectoderm, and was also histologically analogous to the cerebral cortex, here exhibited a primary pathological change in its neurons similar to that found in the cerebral neurons.

Dr. B. Sachs, of New York, said he was firmly convinced that amaurotic family idiocy was a morbid entity, which he hoped would be placed upon a firmer basis by the extensive pathological studies made by Drs. Hirsch, Holden, and others. As children so affected grew older, both the mental and the physical deterioration became more marked, and many of them died in a condition of marasmus. He did not think there was a great difference between arrest of development and degeneration. If there was an arrest of development, a degeneration necessarily followed, and for that reason there was not such a radical difference in the interpretations put upon the cases. He did not believe that a disease so widespread as this, which began at the same period of life in different individuals and which involved some members of the family and left others exempt, could be due to any toxic influence.

Dr. Carl Koller, of New York, said he had seen five cases of this affection. In his opinion the characteristic ophthalmoscopic changes in the macula were not congenital, and were not found up to between the fifth and seventh months. In two of Kingdon's cases, that were examined in the first month, they were missing, and in two of his own cases examined in the first two months of life they were also absent. One of the latter was the case reported by Dr. Peterson. Dr. Koller had examined the child five times between the eighth and sixteenth weeks of its life, the ophthalmoscopic result being negative, although other unmistakable signs made him sure that it was a case belonging to this class. In the other case the characteristic changes developed later. The atrophy of the optic nerve, he said, made its appearance a considerable time after the changes in the macula, and developed gradually. The behavior of the children with regard to their vision was not normal at a time when no ophthalmoscopic changes were visible, so that the conclusion was permissible that vision had been impaired by cerebral degeneration.

Dr. C. K. Mills, of Philadelpiha, said that these cases, along with some of the forms of diplegia and of muscular atrophy, belong to a great embryonal class. The potentiality of development in these cases was

limited, and it might be weeks or months or years before the symptoms made their appearance. Whether the pathological conditions which gave rise to the lesions were toxic or non-toxic, sooner or later the degenerative process would manifest itself.

Dr. F. X. Dercum, of Philadelphia, had one family under his observation in which out of four children three suffered from spasmodic diplegia and idiocy. The symptoms of the degenerative process manifested themselves immediately after measles, while the only child that escaped in the family did not have measles. He thought this tended to strengthen the toxic theory of amaurotic family idiocy.

Dr. Hirsch, in closing the discussion, said he could not dispense with the distinction between a congenital and an acquired condition. He did not question the fact that children who developed amaurotic family idiocy were born with a normal nervous system. He agreed with the previous speakers that the toxic origin of the disease was still an open question. He took exception to the statement that amaurotic family idiocy was in line with other hereditary diseases. He knew of no other inherited family disease in which all the nerve cells in the body became affected. The condition, so far as he knew, had no analogy in pathology.

Formation and Excretion of the Metaplasm Granules of the Neuron.—Dr. Ira Van Gieson, of New York, made some remarks on this subject, illustrated by drawings on the blackboard and numerous microscopic specimens. He first described the constituents of the ganglion cells, referring to the sap, by which the food coming to the nerve cell was elaborated, and the reticulum, which transmitted the impulses and also subserved the phenomena of retraction and extension of the neuron. When the food supply of the ganglion cell was diminished—as in alcoholism, in overfatigue, etc.—an indication of the deficiency was presented in an excretion of particles which escaped from the cell, passed out of the lymph space, and clustered about the blood-vessels. These metaplastic elements were the results of overfatigue—of a diminished food supply to the nerve cells. These nerve changes were not altogether of toxic origin. The quantitative and qualitative food supply of the cells must be taken into consideration. In amaurotic family idiocy there was an indication of a diminished food supply to the cells.

Locomotor Ataxia with Hepatic Crises.—Dr. William C. Krauss, of Buffalo, reported a case of locomotor ataxia in a woman, aged forty-three years, who for ten years had periodic paroxysmal attacks of jaundice with intense hepatalgia, which the writer designated "hepatic crises." The patient had the lancinating pains in her limbs, with myosis, Argyll-Robertson pupil, loss of tendon reflexes, marked ataxic gait, and inco-ordination. Every four or five weeks she had attacks of deep jaundice, with excruciating pain over the liver, clay-colored stools, and presence of bile pigment in the urine. These attacks would last two or three days, then disappear for a month. The hepatic area was not enlarged. No gall stones were found in the fæces. There was no rise of temperature, and the patient died in one of these attacks. The autopsy revealed the characteristic changes of locomotor ataxia in the spinal cord and spinal ganglia. The liver weighed three and one-fourth pounds, and showed no new growth of any kind. The gall bladder was filled with bile, but no gall stones were found. The ductus choledochus and accessory ducts were unobstructed. The microscopical examination showed an early stage of chronic congestion of the liver.

Dr. William Osler, of Baltimore, thought that the pain and jaundice accompanying the attacks would lead one to suspect the presence of gall stones. Although no gall stones were found post mortem, that did not exclude the possibility that they were present during life and gave rise to the hepatic symptoms.

Dr. Krauss replied that the fæces were examined almost every day, but no traces of gall stones were found.

Nosology of the So-Called Functional Diseases.—Drs. Joseph Collins and Joseph Fraenkel, of New York, presented a paper with this title. The authors endeavored to prove that the various so-called functional nervous disorders were primarily conditioned through the sympathetic system, and were the result of a trophic change.

Dr. Dercum said he did not think there was a scintilla of evidence that the sympathetic system played the extensive rôle assigned to it by the readers of the paper.

Dr. Ira Van Gieson considered the sympathetic as that part of the nervous system which covered the whole question of food supply. He thought the authors had attempted to show that in certain diseases there were changes in the higher spheres of the nervous system, produced by lesions of the sympathetic, either functional or organic, which had deprived those higher centres of their food supply.

Dr. Mills thought the authors of the paper had made the mistake so often made, of attributing to a certain portion of the nervous system diseases which largely manifested themselves through such portion. They had done little more than to assert that certain diseases were traceable to the sympathetic nervous system. To a certain extent, the paper was a step backward. There was quite as much evidence in favor of designating hysteria as a cerebral or psychic disease as for calling it a disease of the sympathetic nervous system. He felt that the authors had failed to clear up the mystery surrounding the present knowledge of the diseases of this system of nerves.

Dr. Sachs said that ignorance of the functions of the sympathetic nervous system was not entire. It was known that certain pupillary and visceral symptoms, as well as certain vasomotor and trophic symptoms, had their origin there. He did not think the writers of the paper would be able to prove that such symptoms occurred more frequently in hysteria or in neurasthenia or in acromegaly than in diseases positively known to be of cerebro-spinal origin.

Dr. Osler regarded the paper as a retrograde step, in again bringing forward an old and defunct theory. Still, he said, it only went to show that men of to-day had the same thoughts their fathers had.

Dr. J. J. Putnam said that while he did not regard the sympathetic system as an essential factor in the causation of disease, he did regard it as a very important factor in the maintenance of certain diseased conditions.

Dr. Collins, in closing the discussion, said he did not wish to maintain that any of the diseases he had mentioned were diseases of the sympathetic system. He maintained only that they were nutritional diseases, and that the sympathetic nervous system controlled nutrition from beginning to end.

Family Periodic Paralysis.—Dr. E. W. Taylor, of Boston, read a paper with this title. The condition, he said, consisted of periodic attacks, at varying intervals, of a complete flaccid paralysis of the muscles of the body and extremities. Associated with this paralysis there was an impairment of electrical excitability of the muscles and nerves, varying from temporary quantitative diminution to complete loss. There was also a loss of the reflexes. During such an attack consciousness and sensation were unaffected. The patient's condition between attacks was normal. The condition was clearly a family disease. The cases reported by Taylor occurred in a family in which in five generations there had been eleven cases. The

two persons studied were brother and sister, both of whom suffered from attacks of the above type. The brother, chiefly studied, presented a perfectly typical variety of the affection. The etiology was lacking, excepting in the one particular that the attacks generally came on after exercise followed by rest. The pathological anatomy was as yet vague.

Dr. Sinkler said he wished to place on record a case that had come under his observation. The patient was a man with facial paralysis, who gave a history of five previous attacks in the course of ten years. Each of the attacks lasted several weeks and ended in complete recovery.

Dr. Dana had seen a number of cases of periodic paralysis, none, however, of the family type. He had come to the conclusion that, while some of them were cases of recurrent poliomyelitis, the majority were purely hysterical in character. The family type of this disorder was certainly rare, and perhaps a little light might be thrown upon the subject by studying allied conditions. He had seen a number of patients who had informed him that when they first awoke in the morning they were unable to move for half an hour or even longer, suffering from paralysis and a certain amount of numbness. The ordinary types of morning paralysis seemed to be the result of some toxic condition associated with an asthenic condition of the nervous system.

Dr. Collins said he had observed three cases of periodic paralysis, none, however, of the family type.

Dr. Taylor, in closing the discussion, said he thought the cases which had been mentioned by the various speakers were not absolutely analogous to those reported in his paper.

Surgery and Pathology of the Gasserion Ganglion.—Drs. W. W. Keen and W. G. Spiller, of Philadelphia, presented a communication on this subject. Dr. Keen had operated on the ganglion in eleven cases. He believed that the removal of the ganglion was almost invariably attended with the relief of pain; that it was hardly practicable to attempt to preserve the motor root; that it was better to remove the whole rather than only a part of the ganglion; and that, as the removal of the ganglion was always a serious undertaking, it was best to do a peripheral operation first, unless the pain was widespread and involved all three branches of the nerve. He thought that peripheral operations should be done when the disease had existed for three or four months and had not been cured by drugs. The microscopical examination by Dr. Spiller of seven ganglia removed by Dr. Keen showed intense alteration of the ganglia, involving axis cylinders, myelin sheaths, blood-vessels, and the connective tissue. In one case, in which the entire ganglion with its motor and sensory roots was removed, these roots were found to be normal, although the second and third branches of the nerve near the ganglion were greatly degenerated. The writers believed that trifacial neuralgia was primarily due to disease of the peripheral branches of the nerve, and that the ganglion was probably secondarily involved. In a case in which only the supra-orbital and infra-orbital nerves were removed, these nerves were found much degenerated.

Dr. Mills said he considered the paper the most valuable that had ever been made conjointly to the surgery and pathology of this important subject. He was inclined to the opinion that tic douloureux in the typical form in which it was commonly seen was a degenerative process of the peripheral sensory neuron. He did not regard it as a neuritis, in the ordinary sense of the term.

Dr. Dana agreed with Dr. Spiller as to the pathology of this condition. He believed that the specimens and investigations confirmed the views of Dr. Putnam and himself, that in most of these cases it was a degeneration of the nerve that had to be dealt with. Tic douloureux was a disease not only of the nerve, but of the whole individual. In quite a number of cases it was a self-limited disease. He was opposed, as a rule, to surgical interference.

Dr. Van Gieson had found in these cases an obliterating endarteritis of the vessels accompanying the nerves and a proliferation of the nerve cells. He looked upon the disease of the vessels as the primary cause of the changes in the nerve fibres.

Dr. Keen, in closing, said that the question was purely a clinical one. He did not agree with Dr. Dana regarding the unsatisfactory results of operative interference in these cases. His own experience had convinced him to the contrary.

Dr. Spiller concluded that this disease was usually a peripheral one. If the lesion was primarily in the ganglion, it was difficult to understand why the peripheral branch of the nerve was so highly diseased, while the central branch was normal.

Third Day—Saturday, May 28th.

Long Remissions in Epilepsy, and their Bearing on Prognosis.—Dr. Wharton Sinkler, of Philadelphia, read a paper based on a study of twenty-four cases of idiopathic epilepsy, in which there had been remissions of the attacks of periods varying from two to twenty-nine years. In none of these cases was trephining done. In a few of these cases the freedom from attacks was attributable to the long-continued use of remedies, but in the majority of cases as soon as the attacks were arrested all medication was stopped, and therefore the relief from the seizures could not be ascribed to treatment. In his opinion the conclusion to be drawn from a study of the twenty-four cases presented was that epilepsy should be regarded as an incurable disease. It was encouraging, however, to find from the long intervals which had occurred in these cases that the disease was amenable to treatment, and that a sufferer from epilpesy might look forward to the probability of long remissions, in which he was as competent to fill his place in the world as if he had never had the disease. None of the authorities on the subject of epilepsy who had been consulted had expressed an opinion as to what should be considered a cure in epilepsy, nor had they paid any attention to the occurrence of long periods of freedom from the attacks, with the exception of Niemeyer and Gray. The former in a general way had said that "long remissions might occur" and the latter writer that "cases might be free from attacks for ten, fifteen, or even twenty years," and that he had known in his own practice "remissions of several years."

Huntington's Chorea.—Dr. Frank K. Hallock, of Cromwell, read a paper on this subject and presented the report of a case which showed clearly the course and order of development of the degenerative process, the dementia and chorea paralleling each other as the degeneration progressed. Viewed psychologically, the chorea was seen to be of secondary importance to the underlying dementia, thereby warranting the descriptive and pathologically more correct name of "dementia choreica." In discussing the applicability of the term "dementia" to Huntington's chorea, he stated that there need be no doubt as to the prognosis, course, futility of treatment, and termination of the disease. Given the heredity and the characteristic chorea appearing in middle life, the prognosis could be stated with a surety fully equal to that accorded dementia paralytica and dementia senilis. The conclusions reached were: (1) That it was a progressive degenerative disease of the brain, fundamentally different from the ordinary or Sydenham's chorea; (2) that the chief physical manifestations of the disease were the chorei-

form movements, which were of secondary importance, indicating merely the nature of the cerebral lesion; (3) that the character of the mental symptoms could best be described by the term dementia; (4) if the above assertions could be verified, then the disorder should be classed with such diseases as dementia paralytica and dementia senilis.

Regeneration of Nerve Fibres in the Central Nervous System.—Dr. W. L. Worcester, of Danvers, read a paper with this title. He said that in an old case of necrosis of the right corpora quadrigemina he found in the degenerated portion several bundles of contorted fibres, entirely dissimilar to any normal structure in this region, and resembling an amputation neuroma. They seemed to originate from the tegmentum above the red nucleus. He believed them to be an outgrowth of newly formed fibres from neurons that had been interrupted by the lesion.

Localization of the Sympathetic Nerve in the Brain and Spinal Cord.—This was the title of a paper read by Dr. B. Onuf, of New York. It consisted of a report of experimental researches, with contributions to the physiology of the sympathetic.

The discussion was participated in by Drs. Spiller, Booth, Langdon, and Collins.

The Neurological Aspect of Public-School Education.—Dr. John Punton, of Kansas City, read a paper with this title. He believed that serious defects still existed in the routine methods of public-school education and training of the young, which were attested not only by the general public but also by the teachers and officers of schools. Moreover, all recognized that marked constitutional differences and defects existed in both mind and body in children of every class of society, but the special relation which they bore to modern educational methods was not so well understood as it should be. The vital relation of these lesions of organization to the proper protection and health of the race on the one hand, and the prevailing vices and social evils on the other, together with their special relation to public-school education, presented a phase of the subject which so far had received but little attention in America, but which really constituted the neurological aspect of education. What was necessary to be done, nay, even demanded, was to fix certain definite standards of weight and measurements for every age and height; any pupil found to be above or below this standard should be treated accordingly. In almost every city in the world anthropometrical investigations had now been made, and the unanimous verdict had been reached that the mental output of the pupil was directly related to his height, weight, and physical measurements, and that there was a physical basis for precocity on the one hand and mental dulness on the other.

Election of Officers.—The following officers were elected for the ensuing year: *President*, Dr. J. Hendrie Lloyd, of Philadelphia; *Vice-Presidents*, Drs. Frank R. Fry, of St. Louis, and Henry Hun, of Albany; *Secretary and Treasurer*, Dr. G. M. Hammond, of New York; *Councillors*, Drs. F. X. Dercum, of Philadelphia, and G. L. Walton, of Boston.

Infant Feeding.—Dr. L. Emmett Holt (*Archives of Pediatrics*, November, 1897) concludes as follows: 1. That good breast milk is the best infant food. 2. That no substitute for breast milk can be trusted which does not furnish essentially the same elements—fat, sugar, proteids, etc.—as breast milk. 3. That these elements are found only in the milk of other animals, cow's milk being the only one available for general use. 4. That cow's milk requires some modification before it is fed to infants.

Therapeutic Hints.

Cold Sponging versus Cold Bath.—Dr. H. A. Hare (*Therapeutic Gazette*, March 15th) affirms that he has used cold sponging in his hospital practice and rarely the bath, with the most satisfactory results. He suggests the following rules of treatment: 1. In early typhoid, with constipation or moderate diarrhœa, give a full dose of calomel in divided doses, in order to stimulate the liver and antisepticize the bowel with bile. 2. Control the fever when it reaches 102° F. by sponging. The patient being stripped and laid on a rubber sheet or blanket over a sheet, he is to be sponged with water adapted in its temperature to his needs, and it is to be remembered that the rapid application of a low temperature is more refreshing than the prolonged application of a higher temperature (Baruch). The chief advantage of the cold sponge lies in the shock and reaction. This is better obtained by the use of ice sponging than by the bath. The patient's surface is always bright red in ice sponging, often blue in the bath, and that the fever is not the chief danger in the case renders the fact that as great a reduction from the sponge is not reached as from the bath of little importance except in hyperpyrexia. Shattuck tells us that he has found no marked or constant difference in the antipyretic value of cold sponging at 60° F. for twenty minutes, the cold pack at 60° F. for sixty minutes, or the cold bath at 70° F. for ten or fifteen minutes. Finally, if this does not bring the temperature down to 100.5° or 101° F. in twenty minutes, resort should be had to the tub. It is essential when the sponging is used that more water be applied to the back than to the trunk of the body, for at the back the great muscles and thick skin retain the heat as a reservoir, and are not cooled if only the front of the body is sponged. Further, the posterior surfaces are the ones apt to be congested and sore, from the dorsal decubitus, and therefore need the stimulating effect of the bath, as do the kidneys and other deeply situated organs. That this treatment is of value is shown by the marked redness of the skin, the improvement of the circulation and respiration, and the cleared mind. 3. It is advisable not only to use friction in a light form, but to use moderately active massage, with the same objects in view as when the rest cure is undertaken, for the proper treatment of typhoid is a modified rest cure. The writer is firmly convinced that by this means bedsores, local congestions and effusions, œdematous swellings, peripheral nerve pains, and muscular feebleness will be largely decreased, and Pospischl has shown that mechanical irritation of the skin is capable of increasing heat loss ninety-five per cent. 4. In nearly all cases give more nourishment than the average typhoid patient in the past has usually had. With the exception of broths and meats, almost any article easy of digestion should be allowed—as one or two or more lightly boiled eggs, cornstarch, arrowroot, etc. 5. Use stimulants in carefully graduated doses whenever the circulation needs them, particularly alcohol. Even the cold-bath enthusiasts give whiskey to overcome the depression they often produce.

Thrombosis and Embolism of the Mesenteric Blood-Vessels present a condition not so rare as journal articles would imply, yet nevertheless it is one seldom recognized either during life or after death. Its principal symptoms consist of intense abdominal pain, bloody diarrhœa, subnormal temperature, sometimes with vomiting, perhaps in the later stages vomiting of blood. Shock is usually also extremely marked. The consequence of this condition is almost inevitably gangrene of the intestine supplied by that particular

portion of the mesenteric vessels. The pain comes on a short time after the occurrence, and under the peculiar circumstances gangrene may be practically determined within fifteen hours. More than fifty cases of this kind are now on record in surgical literature, and the condition is one well worthy the attention of the surgeon, because only by surgical intervention—*i.e.*, by resection of the necrotic mass of intestine—can life possibly be saved. Thus Elliot (*Annals of Surgery*, January, 1895) successfully resected one and one-fourth metres of intestine for this purpose.—Dr. Roswell Park, "A Treatise on Surgery," vol. i., p. 40.

Peritonsillitis.—For several years I have treated all cases coming under my observation by thoroughly cleansing the throat and nose with a mild alkaline solution, followed by the application of spirits of turpentine and compound spirits of lavender, equal parts, disguising the taste by the addition of a few drops of the oil of anise or gaultheria. This is applied to all the inflamed tissue, as thoroughly as possible, with cotton on a fine applicator—behind the soft palate, into the crypts of the tonsil, and when possible between the tonsil and the pillars of the fauces. I order the patient to apply the above mixture every one or three hours. A mercurial followed by a saline laxative is usually indicated. Give as much nourishment as can be taken, either hot or cold, as most comforting to the patient. If an attack is seen early, this treatment will abort it; later, it will prevent the formation of pus and the involvement of the opposite side. It will in nearly all cases prevent involvement of the opposite side, even though pus be already present.—Dr. K. W. Baldwin, *Journal of the American Medical Association*, March 12th.

Pruritus Opii.—In exceptional cases both opium and morphine produce a rash accompanied by intense itching. The "pruritus opii" has been frequently noticed, and is described as an annoying and unbearable affection. The rash presents a scarlatinoid appearance, and even the mouth and throat may be attacked by erythematous inflammation.—William Murrell, "Manual of Pharmacology and Therapeutics," p. 296.

Phthisical Cough.—In the hacking, irritable cough of phthisis, unattended with much expectoration:

℞ Codeine ..... gr. iv.
Diluted hydrochloric acid..... ʒ ss.
Spirits of chloroform..... ♏ iss.
Syrup of lemon ..... ♏ i.
Water..... ad ʒ iv.
Make an emulsion. A teaspoonful frequently, when cough is troublesome.

—Murrell.

Rhagades.—

℞ Lævulose..... 10
Aquæ destillatæ 100
S. Apply twice daily.

—*Allgemeine medicinische Central-Zeitung*, March, 1898.

Treatment of Metrorrhagia during the Menopause.—Orloff (*Klinisch-therapeutische Wochenschrift*, No. 7, 1898) uses injections of alumnol and tincture of iodine in the metrorrhagia of the menopause. After a vaginal irrigation with a five-tenths-per-cent. solution of bichloride and cleansing of the orifice with a five-per-cent. carbolic tampon, he inserts a cannula into the uterus and through this injects slowly a solution of alumnol and tincture of iodine (alumnol, 2.5; tincture of iodine, 25; absolute alcohol, 25), by means of an intra-uterine syringe. At the beginning injections are undertaken daily; later every second day. After ten or twelve injections the bleeding ceased and the menstruation appeared too late rather than too early.

Hemorrhage of Trauma and Menorrhagia.—Reverdin (Geneva) recommends the sulphate of sodium internally in doses of half a gram every hour.

In the Diphtheria of Adults.—

℞ Tinct. aconiti..... ..... 20 gtt.
Tinct. belladonnæ..... 1 gm.
Glycerini..... 15 gm.
Aquæ gaultheriæ dest..... 120 gm.
M.
Or:
℞ Potassii chloratis,
Sodii bromidi,
Liq. ferri sesquichloridi..... ..... āā 1.8
Glycerini..... 15
Aquæ dest..... 120
M. S. To be given alternately every fifteen minutes in half-teaspoonful doses.

—Douglass, *Journal de Médecine de Paris*, 1897, No. 2.

For Dyspepsia with Flatulence.—

℞ Tinct. gentianæ,
Tinct. valerianæ,
Tinct. nucis vomicæ. ..... āā 4
Chloroformi..... 20–40 gtt.
M. S. Ten to twenty drops in water before meals.

—*Centralblatt fur die gesammte Therapie*, 1897.

An Antiseborrhœic Hair Wash.—

℞ Chloralis,
Ac. tartarici..... āā 1
Olei ricini..... 0.5
Spiritus vini rect..... 100
Essentiæ flor. æth..... 9.5

—Eichoff, *Deutsche medicinische Wochenschrift*, 1897.

A Painless Vesicant Plaster.—

℞ Menthol,
Chloral..... ..... āā 1
Spermaceti..... 4
Cacao butter..... 2
M. S. Spread on a piece of linen.

—*Allgemeine medicinische Central-Zeitung*, No. 20, 1898.

In Purulent Cystitis.—

℞ Acidi salicylici,
Acidi boracici..... āā 5
Aquæ fervidæ..... ad 1,000
M. S. For irrigation of the bladder.

—Rabaw *and* Bourget, *Memorabilia*, August, 1897.

An Antiseptic Vaginal Douche.—

℞ Naphthol *a*..... 3
Alcohol..... 26
Distilled water..... 1,000
M.
Or:
℞ Betanaphthol..... 5
Alcohol..... 30
Aquæ dest. calid..... ad 1,000
M.

—*Allgemeine medicinische Central-Zeitung*, No. 20, 1898.

For Hemorrhoids.—

℞ Extr. hamamelidis virgin.,
Extr. hydrastis canadensis,
Tinct. benzoini comp..... āā 16
Tinct. belladonnæ..... 4
Olei olivæ carbolisati (5 per cent.)..... 32
M. S. Local application.

—Adler, *Journal de Médecine de Paris*, No. x., 1897.

Myringitis Chronica Sicca.—

℞ Acidi sozoiod..... 0.25
Alcohol. abs..... 1
Ol. ricini..... 10
S. External use.

—Stetter.

Uric-Acid Diathesis and Nephritic Colic.—

℞ Lithii iodidi..... 75
Mucil. gum tragac..... q.s.
Ft. pil. No. 50. S. One pill three times a day.

—Ruhemann.

Hyperidrosis of the Hands.—

℞ Boracis,
Acidi salicyl.....āā 15
Acidi boracici..... 5
Glycerini,
Alcohol. dilut.....āā 60
S. Apply three times a day.

—Mode.

Bronchitis.—

℞ Terpin..... 5
Glycerini,
Spirit. rectif.,
Syr. simpl.....āā 70
S. Tablespoonful three times a day.

Or:

℞ Terpin,
Acidi benzoici pur.....āā 0.1
Opii pur..... 0.01
For one pill. Four such daily.

—Lyon.

Articular Rheumatism.—

℞ Acidi salicylici,
Olei terebinthinæ.....āā 10
Lanolin..... 30
Ung. paraffini..... 50
M. S. Apply externally.

—Ziemssen.

Croupous Conjunctivitis.—

℞ Acidi carbolici..... 1
Cocainæ muriat..... 0.3
Glycerini puri..... 30
S. Apply externally.

—Samek.

Syphilis.—

℞ Iodi..... 1
Potassii iodidi.....q.s. ad sol.
Glycerini..... 5–10
Acidi citrici..... 15
Syrupi simplicis..... 1,000
S. Begin with two tablespoonfuls daily and increase to six.

—Bonveyron, *Lyon Médical*, January, 1898.

Laxative Pills for Children.—

℞ Ext. casc. sagrad..... 2
Ext. frangulæ..... 1
Pulv. aloes,
Pulv. gentian.....āā 4
M. ft. pil. No. 80. S. 1–4 pills at night.

—Pruys.

Ozæna.—

℞ Creosoti..... 5
Alcoholis (70 per cent.)..... 10
Glycerini puri..... 40
M. S. Apply with tampon to crusts.

—Ferreri, *Archivio Italiano di Laringologia.*

Nerve Pain.—

℞ Syrup. thebaic..... 50
Tinct. camphor..... 30 gtt.
Chloral. hydrat..... 2
Aq. chloroformi saturat..... 120
S. Tablespoonful every two or three hours.

—Holz.

Scarlet Angina.—

℞ Aq. oxygen..... 30
Sodii bicarb..... 12
Aq. dest. coct..... 60
S. Irrigate the pharynx every two hours.

—Clanahan, *Journal de Médecine de Paris.*

Nervous Pruritus of the Menopause.—

℞ Zinci oxidi..... 0.3
Quin. sulphat..... 2.4
Aloin..... 0.15
Extr. et pulv. liq..... q.s.
Ft. 20 pil. S. One pill three times a day.

—Shoemaker.

Ulcus Cruris Varicosum.—

℞ Sodii chlorat. subtill. pulv..... 50
Menthol. pulv..... 5

—Simonelli, *Journal de Médecine de Paris*, No. 48.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

UTERINE FIBROMA—POST-GRADUATE CLASSES—AN EXHIBITION—IRISH COLLEGE—HOSPITAL MATRONS—LONDON HOSPITAL—BRITISH MEDICAL ASSOCIATION—"NINETEENTH CENTURY" BOOKS—APPOINTMENTS—DEATHS, HENRY LEE AND OTHERS.

London, June 17, 1898.

Considerable difference of opinion was expressed at the Obstetrical Society in reference to the treatment of uterine fibromyoma. Dr. Herbert Spencer related two cases in women under twenty-five years. In one he had amputated after laparotomy; in the other vaginal hysterectomy had been done after the peritoneum had been opened in an attempt to enucleate the tumor. He gave an abstract of forty recorded cases in women under twenty-five. In eleven of these the diagnosis was clinical, and in only four verified by the microscope. He found no satisfactory record of a case occurring before puberty, and the disease is rare under twenty-five.

Dr. Herman approved enucleation in certain cases, and in that of Dr. Spencer the patient had recovered just as well as after abdominal hysterectomy and without the scar of that operation.

Dr. Horrocks pointed out that these tumors were associated with active menstrual life.

Dr. Lewers agreed with Dr. Herman as to enucleation. He thought the risk was not great when the largest diameter of the fibroid projected free into the uterine cavity, and not more than one-third remained embedded in the thickness of the uterine wall. When the largest diameter of the tumor remained in the thickness of the wall, he thought enucleation very dangerous.

Dr. Cullingworth was quite opposed to enucleation, which he had found more dangerous than removal of the entire uterus. Though enucleation might succeed with highly skilled operators, it could not be commended for general adoption.

Dr. Spencer, however, maintained that enucleation had given him very good results and was not so dangerous as represented. He admitted, however, that in one case a large part of the wall had been removed with the tumor and he had had to suture the aperture, but the patient did well; also that enucleation would be dangerous unless complete.

These admissions seem to show that inexperienced operators might easily be landed in a very awkward position in attempting enucleation.

Post-graduate classes do not seem to have caught on with us, and our efforts in this direction have been feeble compared with yours. We have, indeed, several sets of lectures and demonstrations connected by feeble ties and pushed by a few interested persons. But it is difficult to be sure that there has been any advance since these formed a loose kind of union, the chief value of which seems to be to facilitate advertising the instruction available. The graduate who desires to extend his knowledge of any department can select the special hospital he prefers, and will be welcomed as a student there, and this was the case before any attempted union to imitate the American plan. A scheme, however, is now on foot for establishing a medical graduate college and hospital, on a plan that may vie with the States. It is supposed there will be sufficient support for such a development, but I doubt if the promoters have sufficiently weighed the cost. After the full curriculum of five years now required, the young graduate may well think he has had lecturing enough, and if he feels defective in one specialty he

can attend for a time the department at his own school or can frequent a special hospital, where he can observe the latest methods employed by the staff. If he has time and opportunity, he can attend two or more special hospitals and see the practice. It is scarcely to be expected that any new institution can be officered by a staff which all round can compete with the united teachers of all the special hospitals. It is hardly to be expected that the profession will subscribe to the necessary funds, and the cause is not likely to enlist the sympathy of the public.

Roused by the scheme for a central institution, the West London Hospital is crying out that it has for years been the nucleus of a post-graduate hospital, and requires only the money to complete its arrangements. This hospital has grown rapidly of late years, and will soon have one hundred and fifty beds open. On its staff are some able and energetic men, who would like to extend their opportunities for teaching and are ready to make it a school exclusively for graduates. A few years ago they wanted to make it a junior school, but ambition grows. They have a laboratory for pathological and bacteriological work, and other attractions. They will not find it easy to make all departments as complete as the several special hospitals do. If they do we shall see whether the newly fledged graduate will forsake his own school, where he can continue to study without further payment, to fly to the new institution and pay fresh fees. If he cares only to take out one course, he will find a special hospital more economical.

The medical, surgical, and hygienic exhibition, lately held here, was so successful that the promoters announce that they will hold one annually. London is certainly large enough to support such an institution, and it would seem that many practitioners like to take a stroll through an exhibition and notice the novelties. The annual museum of the British Medical Association is, of course, held at the varying meeting-places, and never fails to attract a large number of members, but it must be remembered these gentlemen are then on their holidays. Whether they will spare time to look in during their season of work, is another question. There is a certain sameness in these exhibitions—the same instruments, drugs, chemicals, foods, mineral waters, and so on; but every here and there something fresh appears to keep up the observer's interest. This last exhibition was particularly strong in dietetic preparations, though pharmacy was also well represented.

Three gentlemen have announced their determination to contest the next election for the vice-presidency of the Royal College of Surgeons in Ireland two years hence. It seems a long enough notice to give.

The matrons of our hospitals have held a conference, and seem to have agreed that nurses should all be trained, examined, and registered. Examination is the popular panacea for everything, and registration next. A beginning might be made by examining the matrons.

At a quarterly special court of the London Hospital, it was decided on Wednesday to adopt the system of requiring small payments from out-patients.

The arrangements for the meeting of the British Medical Association are rapidly approaching completion. Edinburgh offers innumerable advantages for such an assembly, and a successful meeting is anticipated.

The *Nineteenth Century* this month contains an article on "Death and Torture under Chloroform." One anticipates from the title a diatribe on vivisection, especially as it is written by a woman; but it is really an attempt to show that many administrators of anæsthetics do not understand their work and inflict horrible sufferings on the patients. Mrs. King calls them "stiflers," and displays so much ignorance of her subject that one can only wonder by what accident the article passed the editor. Its tone throughout should have warned him.

Dr. Macewen's "Pyogenic Diseases of the Brain and Spinal Cord" has been translated into German.

Mr. Harrison Cripps will shortly publish a volume devoted to his own experience and methods in abdominal surgery.

Dr. W. W. Ireland has in the press a work on the mental diseases of children.

Dr. Beattie Crozier has a new book nearly ready, which is to be called "My Inner Life—a Chapter in Personal Evolution."

Martindale and Westcott's "Extra Pharmacopœia" is ready, in a new issue embracing the changes of the new B. P.

Sir William Turner received on Wednesday the honorary D.Sc. of Cambridge University.

Lord Lister is to receive the corresponding honor from Victoria University in October, when he is to open new laboratories at the Liverpool College. Meantime he was, on the 6th, enrolled as an honorary fellow of the Glasgow Faculty of Physicians and Surgeons. His lordship must by this time be surfeited with the honors conferred upon him.

Dr. Bloxall has been appointed superintendent of the new laboratory for the preparation of glycerinated calf lymph.

Sir J. A. MacCullagh, M.D., Dublin, has been appointed an inspector under the Irish local government board. He was knighted at the Queen's jubilee.

Dr. Niven, M. O. H. for Manchester, has been appointed a lecturer in the Victoria University. He was already lecturer in Owens' College.

Death, ever busy in our ranks, takes one and another, young and old. Of the former I have to name two in Ireland, who have both died of typhus contracted from poor patients. One was Dr. T. D. Sullivan, son of the M.P. of the same name; the other, Dr. Paul Dillon, of Killarney. Dr. Fitzpatrick, of Dublin, was a nonagenarian, having been born in 1806, and of course had retired for a long time.

On the 11th instant died Henry Lee, consulting surgeon of St. George's Hospital, where he was originally a pupil and afterward surgeon. He was also for a number of years surgeon to the Lock Hospital, and had filled other important offices. He was an important figure among London consulting surgeons, and retained his vigor of mind to a late age. He retired only a few years ago, and was eighty-one at his death. You know much of his work as a syphilographer and operator, as well as contributor of valuable works on surgical pathology and practice. He wrote the treatise on venereal diseases in Holmes' "System of Surgery." His operation for varicose veins is familiar to most, and his success as an operator, especially in joint excision, well known. He introduced calomel fumigations and was *facile princeps* in the treatment of syphilis. Perhaps his work was mostly so good because it was founded on pathology, in which from student days he was profoundly interested. A pleasant companion, a stanch friend passes away in the genial Henry Lee, who ever held the sincere regard of his numerous pupils and colleagues. Twenty years ago, having passed his sixtieth year, he thought well to make room for younger men, but he kept in private practice for a considerable period after that.

Puerperal Eclampsia.—After morphine and chloral had failed, veratrum viride, ℥xx. every six hours, and subsequently ℥xl. every four hours, was followed by marked improvement.—J. B. SHOBER, *American Journal of Obstetrics*, June, 1897.

OUR PARIS LETTER.

(From our Special Correspondent.)

CHRISTIAN SCIENCE AND VIOLATION OF THE LAW REGULATING THE PRACTICE OF MEDICINE—BUREAUCRACY AND HOSPITAL MEDICAL SERVICE—ANENCEPHALUS—BICARBONATE OF SODIUM IN THE TREATMENT OF CHARBON—THE TREATMENT OF DIPHTHERIA, ETC.

PARIS, June 18, 1898.

THE practice of Christian science is regarded here by some of the leading members of the medical profession as an infringement upon or a violation of the law regulating the practice of medicine. The point has been made and the question is now asked: What constitutes illegal practice of medicine? The law exacts of whoever practises medicine on French territory two conditions: 1st, to be provided with a French diploma of doctor of medicine, or officier de santé; 2d, to be inscribed on the official lists. Therefore, whoever practises medicine on French territory without complying with both these conditions is liable to prosecution for the illegal practice of medicine. Doctors, regular graduates of a French faculty, who do register their diplomas at the Palais de Justice and have their names duly enrolled on the official lists, are also liable under the law. The practice of medicine *per se* is not confined merely to examining patients and writing prescriptions for them, nor to surgical manipulations or operations, strictly speaking; but extends to all kinds of medical advice — palpations, manipulations, examinations, the giving of electricity, magnetism, and whatever act or acts may pertain to healing or a method of cure. Exception is made in favor of curates, officiating priests, and sisters of charity, who, giving advice and care to their ill parishioners, neither signing prescriptions nor holding consultations, and giving their services gratuitously, are only doing acts of charity, which the law does not forbid and which the administration sanctions. If, therefore, the Christian science "dodge" is a method of cure or pretends to be such, as it certainly does, it is a violation of the French laws regulating the practice of medicine, and those practising it are liable to prosecution under them. Furthermore, it is not only habitual practice without a diploma that the law punishes; one act alone may render the offender liable to a condemnation.

This brings me to the subject of bureaucracy in the larger hospitals of Paris; that is to say, business administration and management *vis-à-vis* of medical service. The continual warfare of the man of science and learning against red-tapeism is waged with more or less vigor, according to the spirit of despotism or autocracy of the powers that be or the overexacting and cross-grained character of the individual. I am speaking generally. There has, however, been of late years a marked improvement and more harmony in this respect in Parisian hospital administration. When a patient is brought or comes to a hospital, it is the duty of the interne on service to indicate briefly the nature of the case for classification, thus: "fever," which is equivalent to saying, "This is a patient for the medical wards"; or "wound," signifying that he or she should be turned over to the surgeons. It thus happened at the "Pitié" one day that a jealous and overbearing director forbade the internes receiving urgency patients without putting on the bulletin an accurate diagnosis of the disease. The internes, chafing already under too much "bossism," complied immediately, and all the bulletins of urgency patients admitted from that day bore the diagnosis, "anencephalus," an absence of brain, of which the administration had given abundant proof. The director was at first much pleased at the punctiliousness with which his orders had been carried out. But he soon became anxious, then frightened. Anencephalus continually! It must be a terrible and unknown disease, invading the capital. He called his personnel around him and ordered the most rigorous prophylactic measures to be taken. Still the disease followed its course, and he discovered to his horror that there were one hundred and thirty cases of anencephalus on the books of his hospital alone. The explanation had to come, and the laugh was turned prodigiously on the director, who got off by withdrawing his order and leaving the internes to classify their patients as they had been doing previously.

Bicarbonate of sodium seems to be good for almost everything; it corrects acidity, promotes nutrition, is an excellent remedy for colds, and efficacious externally in the treatment of burns and other surgical diseases. Dr. Camescasse, at a recent meeting of the Therapeutical Society in Paris, stated that he had obtained a very rapid cure in two cases of charbon (or pustule maligne) by keeping applied to the tumor, after having incised and painted it with tincture of iodine, cloths wet with a solution containing twenty grams of bicarbonate of sodium in a litre of lukewarm water. This solution had already been employed with success by Dr. Gueorguievsky in the treatment of phlegmons, panaris, and, in general, all suppurative wounds.

Dr. Barbier considers that in the treatment of diphtheria special indications are furnished by the degree of intoxication of the organism, as well as by certain infections associating their action to that of the bacillus of Loeffler. Thus microbial associations render the subject more sensitive to diphtheritic poisons, and the bacillus itself is more active. In cases of diphtheria with multiple agents of infection, recourse must be had to antiseptic irrigations of the nose and throat. Diphtheritic intoxication will not only benefit by anti-diphtheritic orrhotherapy, but also by exhibiting therapeutic agents not less special (I do not say specific), such as artificial serum, caffeine, and digitalis. Certain nervous phenomena are best combated by preparations of strychnine. In a word, symptomatic treatment is indicated in most accidents or complications in the course of diphtheria. This is a return to the good old doctrine of treating symptoms. It goes without saying that diphtheritic cases ought to be isolated, whether with associated infections or not; and as regards all diphtheria the most strict hygiene and prophylaxis must be exercised in private practice, and with all the more reason in the hospital.

THE SEAT OF INFECTION IN THE EXANTHEMATA.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: In an interesting article on antitoxin rashes, by Dr. Berg, in the MEDICAL RECORD of June 18th, I notice in the last paragraph, first column, page 870, the following statements:

"It would appear possible that in these diseases [measles, varicella, variola, and scarlet fever] the characteristic germs, having gained access to the blood, develop there their toxic products; every effort is made by the excretory functions of the body to get rid of these toxic agents. The excretory power of the skin, kidneys, and mucous membranes is brought into play; hence the characteristic manifestation in all of these organs in the course of these diseases; thus the eruption and catarrhal inflammation of the mucous membranes characteristic of measles, the eruption and characteristic inflammation of the throat, and later on of the kidneys in scarlet fever."

Now this paragraph being somewhat in the nature of a *capitulo a parte*, any remarks upon it will not affect the value of the main part of Dr. Berg's article, and, while the statements found in this paragraph are the

general belief, they are nevertheless unfounded and incapable of demonstration. In the first place, it has never been shown that the germs characteristic of measles, varicella, variola, and scarlet fever gain access to the blood and develop there their toxic products. On the contrary, the living blood is recognized either as a bactericidal fluid or as one capable of inhibiting the growth of germs. It is true that the plasmodium malariæ is at times found in the blood in great numbers, but the exact nature of this parasite has yet to be determined, and the theory that the blood and not some lymphatic tissue is its breeding-ground is not yet proven. It is almost a self-evident truth that the blood has and must have an inhibitive influence on germ life. If it were not so, general sepsis would be the result of every local infection.

In the second place, I wish to criticise that part of his paragraph which intimates that the catarrhal inflammation of the mucous membranes in measles is the result of the excretion of toxin. I believe that the mucous membrane of the respiratory tract is the seat of infection in measles, and that beyond this membrane the germs never go. I furthermore believe that the inflammatory condition of this membrane is due to the exciting presence of the germ, and, as the mucous membrane of the throat is primarily an absorbing membrane, it is reasonable to suppose that the toxin is not eliminated here, but by the skin and kidneys, which are the two great excretory tissues of the body.

In the third place, the same criticism is extended to the remark on "the eruption and characteristic inflammation of the throat, and later on of the kidneys in scarlet fever." The eruption in the throat and the inflammation of the kidneys in scarlet fever are the result of entirely different causes. The eruption in the throat is due to the germ; the inflammation of the skin and kidneys is due to the toxin. In the MEDICAL RECORD of January 15th I presented the view that scarlet fever is a local disease of the throat, and since then I have learned that I am not alone in my belief.

LUKE FLEMING, M.D.

TARRYTOWN, N. Y.

Medical Items.

Casualities of a Small Boy for One Week.—S. M. Worthington, M.D., of Versailles, Ky., writes: "My legacy to posterity, S. M. W., Jr., aged one and one-half years, swallowed a pin on Sunday; passed it on Monday. Swallowed three pins and five buttons on Tuesday; passed them all in one action on Wednesday. On Thursday, procuring my hypodermic syringe case, he took an unknown quantity of tablets of morphine, gr. $\frac{1}{4}$, and atropine, gr. $\frac{1}{150}$. By constant attention through that day and night he sufficiently revived to be taken riding on Friday. The horse shied. The hub shot through, throwing all out of the cart, and, catching in the felloe, dragged the wheel flatwise. When I regained my feet the horse was running furiously up the rocky road, the boy lying on the wheel. Some sixty yards away he slid off on the roadside grass, without injury of any kind. On Saturday he rested from his labors in casuality. Sunday returning, he went with me to church and proved the promise, 'He giveth his beloved sleep.'"

Jubilee of Modern Spiritualism.—The jubilee of modern spiritualism was celebrated at the beginning of April in Manchester. Mrs. E. H. Britten, of Manchester, described as a "notable apostle of spiritualism," opened a four-days' jubilee bazaar and international fancy fair, the object of which was to raise £2,000—a very material agent—toward a propaganda fund to promote the spread of spiritual knowledge and enable those who sit in the valley of shadow, in fear of death and the hereafter, to realize that man is a spirit, naturally immortal, progressive, and responsible; that there are no dead—all live; and under favorable conditions can communicate with their friends and loved ones and help, guide, comfort, and bless them. On the platform there was a reproduction of the frame house at Hydesville, N. Y., where, on March 31, 1848, it is stated, "the spirit by raps responded to questions, and established a method of intercourse which has been adopted in all parts of the world." It is remarkable that the spirits in America—that ingenious and labor-saving land—should invent so clumsy a mode of sending messages from another world. Mrs. Britten declared, "after nearly forty years' experience, . . . that it was the first scientific religion that the world had ever known, and came from the source of all light—God, our heavenly Father, and from none other." She told how Victor Hugo had said to her again and again: "There is no more death; that which is called so is a splendid success"—a remark characteristically French. During the afternoon a great tea meeting was held, and this was followed by a mass meeting in the evening, at which three thousand people were present. The chairman, a Mr. Wallis, said that while fifty years since there were no spiritualists in their sense of the word, to-day there were millions all over the world. According to another speaker, much has been done by the movement, for it "had had to educate the church and men of science and the general population as well." But most of all, as he said, "they had had to educate their own party and to develop their spiritualists out of the spiritualism that the angels brought to them from the spirit world." This was a task, and it is wonderful how Mr. Moore and his friends did it, even with the help of the angels. Many of these people are no doubt sincere and belong to the so-called educated classes, but education does not necessarily confer wisdom and judgment in the sifting and weighing of evidence. It would be impolite to speak of "cranks," and yet there is an old saying—"there's nothing so queer as folks."—*The Lancet.*

A New Disease to the magistrate was that advanced by a prisoner last week as an excuse for intoxication. Magistrate Kudlich is well up in medicine and fully appreciates the necessity of taking a little spirits with a dose of quinine to break up a chill or ward off a cold. When, however, caisson disease was pleaded as an excuse for falling into the hands of the police, the justice was for a moment in doubt. So good a clinical account of the effects of working in compressed air was given by the man, however, that he was released and a note was made by the judge to look the matter up in the books.—*The Sun.*

Winkler's Reaction: A New Test for Free Hydrochloric Acid in the Stomach Contents.—A small quantity of the normal filtered stomach contents, to which a few grains of dextrose has been added, is poured out on a clean porcelain plate; add a few drops of a solution of alphanaphthol, and heat gently. A violet-blue color is developed, which rapidly changes to inkish black. Or a standard test solution may be kept on hand, made by adding to a five-per-cent. alcoholic solution of naphthol α one-half to one per cent. solution of grape sugar. As in the Günzburg and the Boas tests, so also in this one there is a negative reaction if, instead of free hydrochloric acid, sulphuric or phosphoric acid is present.—*Centralblatt für innere Medicin.*

Mud Baths were common among the ancients, the mud on the seashore and the slime of the rivers being especially prized for this purpose. The Egyptians still use them for certain complaints, such as gout and sciatica.

Navy Full-Diet Table.—After much study the medical officers of the navy have adopted a new full-diet table, in which every care has been taken to provide for a proper quantity of proximate principles in a variety of food suitable for a liberal diet, says the *Army and Navy Journal*. For each meal in the table running through a week the precise amounts of albuminoids, carbohydrates, and fats were arranged, bearing well in mind the preferences developed by a seaman's life. The bills of fare represent not only the ideal poor man's food, but food that cannot be surpassed by royalty as well. It is found in practice from the returns of all hospitals that these meals cost an average of thirty cents per day per person, or about ten cents per meal. The tables are thought to constitute the best possible fare, and represent a most excellent foundation for carrying other gastronomic luxuries. The naval full-diet table is as follows for one day in the week, the number after each article relating to ounces: Breakfast—coffee, 1; bread, 4; butter, 1; milk, 6; sugar, 1; oatmeal, 1; beefsteak, 6. Dinner—rice soup, 8; bread, 4; roast beef or roast or boiled fowl, 8; potaoes, 8; other vegetables, 6; pickles, 1; bread pudding with sauce, 6; or custard frozen, 8; fresh fruit, 6. Supper—tea, ¼; bread, 6; butter, 1; milk, 2; sugar, 1; cold roast mutton or cold roast beef, 4; stewed dried fruit or baked fresh fruit or apple sauce, 4. The staples—coffee, bread, butter, milk, sugar, and fresh and dried fruit, are the same for each meal, but there is a daily variety in meats and other articles for breakfast, dinner, and supper. The proportions are about the same, however, especially in the matter of meats, as in the specimen diet table given above. In addition to its use for convalescents, the table is now observed for all naval-hospital employees, and is gradually becoming the standard aboard ship and in the marine corps. Its adoption was the result of most patient and thorough investigation by Surgeon I. D. Gatewood, who consulted all the leading authorities on the subject.

A Would-be Suicide.—The following story well illustrates one cause of the prejudice against European physicians that prevails in China. The case was included in Dr. C. C. de Burgh Daly's report on the health of Newchwang. "A most determined attempt at suicide took place on board a British ship. A pantry boy, a native of Ningpo, aged twenty-three years, had a dispute with the steward, and, seizing a small table knife which was well worn down by frequent polishing on a knife board, he entered it on the left side of his throat, and, cutting backward and across, severed the trachea and œsophagus. When I saw him he was not much collapsed; very little bleeding had taken place. The wound was over two inches from side to side, and was very deep in the central line; the trachea, completely severed, was tilted and in a faulty position with relation to the entrance to the larynx. On attempts at drinking, the fluid came out through the wound or passed into the trachea, causing violent fits of coughing. For over sixty hours the patient absolutely refused to allow us to do anything for him, struggling violently and with great strength whenever I attempted to feed him. His one wish was to die quickly, and he implored me to bring about that result by cutting his throat to a greater extent. However, starvation reduced him to a better state of mind, and he expressed a desire to live and be cured. A soft-rubber tube was passed by the mouth every four hours and guided into the lower opening of the œsophagus by a finger in the wound. In spite of a sharp attack of bronchitis he made rapid progress toward recovery, and left here some weeks later on the advent of cold weather, with only a small opening into the trachea and œsophagus. He was given a tube and taught how to pass it for himself. In accounting for the wild and blood-curdling legends about the doings of foreign surgeons and others, which are so prevalent among the natives, it may be of interest to add that this youth, in order to 'save his face' in regard to mutilation of his body by his own hands, gave the following explanation of the occurrence to the comprador and other natives on board the steamer he travelled home in: 'When I arrived in Newchwang I was very ill, and the captain sent me to the foreign doctor, who was unable to cure me, and consequently he [the foreign doctor] cut my throat in order to let out the hot air.'"

Liquid Air in Medicine and Surgery.—The discovery of how to produce liquid air is due to an Englishman, but it is said that an American has gone further than this and has succeeded in putting the discovery to practical use. He also claims that in medicine and surgery its possibilities are numerous. According to the *Cosmopolitan:* "By means of this process, air absolutely free from germs could be furnished in any amount; and if the stimulating effect of an excess of oxygen was desired, it could be had without trouble, quite free from the impurities which now often make this gas objectionable. The temperature of hospital wards, even in the tropics, could readily be cooled to any degree prescribed by the physicians in charge; and by keeping the air about yellow-fever patients down to the frost point, the nurses would be perfectly protected against contagion and the recovery of the patients themselves facilitated. Again, the cauterizing cold which liquid air is capable of producing might be used in cases of cancer with great advantage, as compared with nitrate of silver, since, while it absolutely destroys the flesh to which it is applied, its action is perfectly under control and can be stopped in an instant. It is probable also that hay fever, asthma, and even consumption could be greatly relieved without change of climate by this pure, cool, germless air."

Health Reports.—The following statistics concerning small-pox, cholera, yellow fever, and plague have been received in the office of the supervising surgeon-general of the Marine Hospital service during the week ending July 2, 1898.

SMALL-POX—UNITED STATES.

		Cases.	Deaths.
Florida, Bartow	June 25th	1	
New York, Fredonia	June 23d	16	
North Carolina, Reidsville	June 28th	3	
Pennsylvania, Johnsonburg	April 28th to June 23d	1	
Tioga	April 28th to June 23d	1	

SMALL-POX—FOREIGN.

Belgium, Antwerp	May 28th to June 4th	..	2
England, Newcastle-on-Tyne	June 4th to 11th	1	
India, Bombay	May 15th to 24th	..	1
Calcutta	May 7th to 14th	..	4
Japan, Aichi Ken	May 19th to June 5th	1	
Akita Ken	May 19th to June 5th	1	
Awomori Ken	May 19th to June 5th	26	4
Fukuoka Ken	May 19th to June 5th	2	
Fukushima Ken	May 19th to June 5th	6	2
Hiogo Ken	May 19th to June 5th	2	
Iwate Ken	May 19th to June 5th	5	1
Miyagi Ken	May 19th to June 5th	2	
Shiga Ken	May 19th to June 5th	1	
Tokushima Ken	May 19th to June 5th	1	
Yamagata Ken	May 19th to June 5th	7	
The Hokkaido Ken	May 19th to June 5th	32	6

CHOLERA.

India, Bombay	May 14th to 22d	..	10
Calcutta	May 7th to 14th	..	24
Japan, Hiogo	May 19th to June 5th	1	1
Tokyo	May 19th to June 5th	2	1

YELLOW FEVER—UNITED STATES.

Mississippi, McHenry	June 25th	1	
	Country four miles from McHenry		
	June 25th	1	

YELLOW FEVER—FOREIGN.

Brazil, Rio de Janeiro	May 6th to 13th	76	43

PLAGUE.

Japan, Hiogo	May 19th to June 5th	1	1
Taiwan, Formosa	May 19th to June 5th	144	84

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Original Articles.

THE LODGE DOCTOR: HIS ADVENT, HIS METHODS, AND HIS INFLUENCE ON THE PRACTICE OF MEDICINE.

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NEW YORK.

Chapter I. Describing an Attempt on His Own Life by a Weary Physician.—A splash in the water and a muffled sound as of a human being in distress reached her ear as she sat at the open door of the cabin at dusk one even in the fall. "Father! father! some one overboard! Quick! quick! I saw the body shoot up! Quick, or you are too late to rescue!" The speaker was the captain's daughter; their bark was in the West India trade, but now riding at anchor near the shore of an unfrequented street in an outlying part of the city. The captain and his daughter were the only occupants now on board, save a Newfoundland dog and a parrot.

The drowning man, for such he proved to be, refused help, waiving the captain off with the words, "Let me die, let me die! and hide my sorrows in these placid waters!" When the unfortunate man, however, was about to sink for the last time, he was seized by the collar of his coat by the Newfoundland dog and fished on board with the grappling-hook of the captain. He was rolled on the deck and the water expressed from his lungs by the continuous efforts of his heroic rescuers, while the faithful Newfoundland remained a silent but intensely interested witness of the scene. At last the vital spark rekindled and the unconscious man began to show signs of life.

There was no police officer a witness of this scene to shout with great officiousness, "Somebody to the rescue while I ring for an ambulance!"—no interference with the humane and intelligent hands which were straining every nerve to bring the unconscious form back to life.

On opening his eyes the stranger found himself in a cozy room, surrounded by a man, a woman, a dog, and a parrot. He was at first disposed to upbraid his rescuers for not permitting him to die, but the kindly faces he saw around him and reassuring words he heard banished all semblance of crimination, and his heart grew full of gratitude and his eyes spoke words of thanks to the noble rescuers of his life. His thanks were more profuse when pressed to accept the hospitality of his hosts and spend the night on shipboard, that he might recuperate from his fatigue and strengthen his resolution to give himself in care of that kind Providence who made them the instrument of His will and the rescuers of a life.

After partaking of a sparing repast and a change of habiliment, the captain and the stranger began a short but earnest conversation. "Stranger, since you have passed the meridian of life and the passions have subsided, love, the greatest incentive to suicide, could not have played an important part in your effort at self-destruction." The stranger, though past middle life, was sinewy and active as a leopard, for youth lingered with him still. Youth often clings with pertinacity to some, and love often finds a citadel in the heart of old age. "Stranger, pray relate the circumstances that drove you to take your own life," said the young hostess with eager interest and a kindly feeling for the old man in the expression of her voice. "The mental condition incidental to suicide must be agonizing, for life is sweet, and the outlook must be dark and portentous before a human being will lay violent hands on himself. Have no fear; you are free from legal interference here, and can with safety unburden your mind. In the morning you can go your way. I am sure my father and I will wish prosperity and happiness to be the companions of your journey. If you have dipped your hands in human blood, or in a moment of passion committed a crime from which your nature revolted, I believe you have paid the penalty already, for the remorse that goads one to suicide is the atonement for the crime." "If you have wronged a woman because she was confiding and weak," said the captain, "the balm for your conscience was to have made reparation and lived, that the world might know there's other than depravity the habitant of the human heart when fired by passion and impelled by opportunity." "Kind host," said the stranger, "I am not a murderer in haste to hide from my crime at the bottom of these turbid waters, nor am I a betrayer or traducer flying from justice to the door of fate; on the contrary, I am the victim of circumstances and the subject of cupidity and malevolence. I trusted a brother implicitly, only to have that trust betrayed. I am by profession a physician. My nature was kind; a tale of woe harrowed my feelings and spurred my heart to generous impulses. I gave to my professional brother, and what I did not give he took without asking, until there was nothing left. He afterward by collusion, subterfuge, and trickery stole my patients until none remained. Impoverished and hungry, I was ashamed to beg; to steal, I could not stoop; to die was my only refuge to stifle my imperious longings and I would have drowned my sorrows, as have other subjects of misfortune, in a watery grave. I was not afraid to die; I am not now. Death is a sanctuary to the weary traveller, a condition of complete repose, a return to mother earth. Of cowards I am not one

> 'Who dreads to the dust returning,
> Who shrinks from the fatal shore.'

"Now, kind hosts, I have answered your questions, but the story of my wrongs is a long one and would wear out your patience were I disposed or permitted to relate it to you."

"From the little you have told," said Miss Post, "your story must be an interesting one. What better way to while away an idle hour than listen to its recital from the victim of such presecution and suffering? My father and I will only be too happy to hear your story; our interest will be keen and our sympathy spontaneous in the misfortunes that seem to have marked you as their own. Proceed, then; the light is bright, the hearth cheerful, and the night young. Ours will be a pleasure mingled with pain."

Chapter II. The Physician Tells why He Determined to Take his Own Life.—The author of

my poverty and predicament, as I have already told you, is none other than a professional brother whom I trusted most implicitly, but he basely betrayed that trust and lost no opportunity to undermine my reputation and cover me with scorn. While he was hanging to the coattails of respectability he assumed a fraternal tenderness that was touching, and begged me to introduce him among my friends, that he might be a beneficiary of the good things they had at their disposal. He called to me while rotating with great velocity at the periphery of the social wheel of fortune to take him to a place of safety near myself at the centre of motion, as he was in peril of falling from the outer rim and being precipitated into space. After being pulled to a place of safety and at great risk to myself, his gratitude took the form of an endeavor to pitch me out into the unknown, that he might navigate the aerial car for his pleasure and benefit.

After this dastardly act he somehow managed to ingratiate himself again in my favor, and subsequently he was taken on board of my yacht as a guest, when immediately he hatched a conspiracy to murder me and scuttle the ship. I left my practice in his care, to take a few days of much needed rest in the country. On my return I found chaos at home, and every step I took to ascertain the cause developed the fact that he was ceaseless in his efforts to supplant me in the esteem and affection of my patients. Previous to this, as a cure for my dyspepsia I went to the continent, sightseeing for two months. While abroad he was anxious about my health, and particular that I should visit Switzerland. He wrote:

"Dear Dr. Gee: It gave me inexpressible pleasure to read your letter just received. I feel now assured that your recovery will be only a matter of a few weeks. Since your dyspepsia has already disappeared, the other symptoms will vanish, too, in the rarefied atmosphere of beautiful Switzerland—a country you must be sure to visit; explore the glaciers and climb the mountains of that picturesque land. Climb high; you have an opportunity now to inscribe your name on the roll of fame. Opportunity seldom comes twice in a lifetime. Catch the tide at the flood."

While writing in this most friendly tone, the wish undoubtedly was near his heart that I should perish in that foolhardy attempt, be precipitated from an overhanging peak or surprised by some yawning gulch, lie deep in a mountain ravine forever buried in a mantle of snow, and this inscription on my tomb—the mountain desert:

"Went tumbling down the torrent of his fate."

With what diabolical glee he would rub his hands and what hypocritical cant he would display in relating with tears the tragedy of my death to those stricken with sorrow at my untimely end!

"Dr. Gee, beg pardon for interrupting you at the outset of your story," said Captain Post; "but might I ask you for the name of this monster who so basely betrayed his benefactor? He can hardly be human." "No, no, papa, he is a fiend!" exclaimed Miss Post, with spirit in her manner, and defiance and hate for the author of the old man's misfortunes glaring in her blue eyes. "He is a man, a physician; by name Dr. Quick, the medical director of the Knights of the Golden Rod," said the stranger. "A man, a knight, and a director," said the captain with amazement. "He is out of place here. He should be a director below." "Yes, papa, that region is the most appropriate place for his peculiar talent." "There he would find boundless opportunities for hatching conspiracies and an able coadjutor in his master, the devil," added the irate captain. "Describe him, describe him," said the captain and his daughter with one voice; "we will not interrupt you again, Dr. Gee, so proceed with your story."

This man is not a medical outcast nor is he a quack in the ordinary acceptation of that term, said Dr. Gee. However, he is more dangerous on that account. If a leper is branded as such, the community will have an opportunity to shun him; but if that leper touches up his scarred and sodden face and decorates himself in fashion, he will for a time escape detection until the effluvia from his hidden sores begin to penetrate the olfactories. Then there are an inquiry, a surprise, and a stampede, and a relegation of the offender to the companionship of his kind or to a lonely solitude. The other leper sometimes wears his disguise for an indefinite time. As a rule, he dresses well, even if he has to procure his clothing on the instalment plan, which he often does to the sorrow and disgust of the confiding tradesman; as his (the leper's) pachydermis is thick, he can stand an extraordinary amount of dunning and he ultimately succeeds in wearing out the patience of the unfortunate tailor. At the outset of his career this lodge doctor is seized with an inordinate and atrocious ambition, namely, to be successful, even if disaster and ruin to his brother practitioner be the price of that success. I by long and arduous labor in the field of honest endeavor succeeded in surrounding myself with an appreciative and remunerative *clientèle*. The purpose of this man was to pull down the structure I built, that benefit might the more speedily accrue to himself from the destruction and spoliation of me, his benefactor. He aimed to reach the land of promise, a land flowing with milk and honey, by the back door. By the legitimate practitioner this land is reached only by a long and straight road, where censors to examine his passport and judge of his fitness are stationed at intervals.

This lodge doctor has a horror of this road. He will not enter on it; it is too long; the task imposed there is too arduous. He might break down on the journey or be turned back by a censor as one unfitted to proceed; besides, his passport might prove a counterfeit. In such dire contingency he would incur the displeasure of the censor and be in danger of deportation or death. To avoid such formalities he has resolved to enter by a back door and through a bypath leading through a swamp. The sign, "No admittance here," has no meaning for him, and under cover of darkness he undertakes the journey. The distance to be traversed is short but abounds in underbrush and stinkweed, with numerous marshes giving out malodors and reeking with germs of nameless diseases. He emerges from this swamp covered with slime, and with the temerity and demureness of a burglar who has successfully blown open a safe and escaped with the money drawer. On his belly he crawls; he finds an avenue to the door, through which he stealthily creeps into the ranks of the worthy, who have presented their passports and won their spurs by honest endeavor.

This Dr. Quick, a knight of the Golden Rod, is a soldier of fortune who accomplishes deeds of daring with his tongue and who fights best when there are rations in sight. He attaches himself to the commissary train, and can always be found in the storeroom or larder, a position in which he fortifies himself so strongly that only a bayonet can drive him to the open. His eyes are on booty; he will carry it away if he can, having no scruple to see the rank and file of the army go hungry or die of exhaustion from lack of that food he has pilfered and sold to the enemy.

Chapter III. The Reign of the Lodge and the Sand-Lots Orator. His Advent.—Before the civil war little was known of the lodge doctor. True, he had a vicarious existence, but was seldom heard of

by the general public; now, however, he is very much in evidence and lodge doctors are as plentiful as mosquitoes on the Hackensack meadows in sultry August weather. During the last few years societies have organized and increased with great rapidity. Workingmen and mechanics, believing that their interests lay in a closer union, banded themselves together into clubs, courts, and circles—various names to designate the same thing, but under whatever name their purpose is always the same. These bodies of laborers, artisans, and mechanics have full lists of officers from president down to the negro camp follower. Obscure among these officers is the lodge doctor, who in a number of instances must be a member of the circle over which he has the honor to preside as medical director. Some of these lodges are close corporations, and often are run as much in the interest of the presiding officers as in that of the rank and file of the order.

The tendency of the hour to form combines and trusts is not by any means confined to the bloated bondholder and capitalist. Those various lodges are simply little trusts scattered over every city and town in the United States, and are about as plentiful as polling-booths throughout election districts. A large proportion of those societies have medical officers; sometimes two or three societies club their interests and have one between them. Seldom, however, is this necessary, as doctors are so plentiful, especially poor ones, that their services can be had for a pittance—yes, the merest pittance. It will be shown later when I come to consider the methods of the lodge doctor, that he accepts this pittance in the hope of making acquaintances among the lodge members and their families, which will recompense him for the small stipend he receives from the lodge. These lodges, while very careful that their own interest be protected, that all comprising their unions have the full benefit of their advantages, are ever ready to take advantage of a weak spot in other industries, and offer the smallest possible remuneration for the greatest possible amount of labor. They are ever ready to denounce one of their own members who steps into a breach to work for smaller wages than he who was previously employed, while they are always on the watch to procure cheap labor themselves in the way of a medical adviser at a disgracefully low price—as a fee a few cents per visit. It is the habit of these lodges to denounce capitalists and regard them as their arch enemies; but every member of a lodge has an ambition to be himself a capitalist. This ambition once satisfied, he often domineers over the less fortunate, whom he distanced in the race. They make incursions into the higher intellectual pursuits to tempt the medical weakling and persuade him to be a scab, though that name is despised, proscribed, and covered with opprobrium by every mother's son of themselves. Their bylaws denounce him as a traitor, as do their orators inside and outside their halls.

These lodges need councillors to keep them from illegal transactions, physicians to keep up their standard of health, and clergymen to remind them of a hereafter, to prepare them for the exordium by pointing the way. They, however, secure the services of only the inexperienced and raw recruits, old soldiers refusing to enlist under their banner or serve in their ranks, as the equivalent for such services is on promissory note rather than cash on delivery. It will be noted that these champions of labor are not willing to grant to others the rights and privileges they claim for themselves, and enjoy undisturbed. They procure the services of a lodge doctor at the lowest possible figure, and often barter for months and close the sale by knocking the medical directorship down to the lowest bidder, regardless of qualification or other attribute. They secure the cheapest talent in the market; they get just what they paid for.

A man wants a cheap coat. He will not go to a Fifth Avenue clothier to obtain it, but will find his way to the Bowery or Chatham Street; there he will get just what he wants—a cheap coat. He is not willing to pay for a trustworthy, reliable garment, so he has to take shoddy, and no man who sees him wear it is deceived in the quality of the goods. The lodge was dickering and bartering for months, playing one unfortunate physician against another, when finally they took the cheapest, and after some formalities installed him as medical director and guardian of their lodge. They wanted a cheap man and they got him. As in the case of the clothing, judges will not be deceived by the feel and cut of his professional efforts.

The crucible of the social alchemist is bubbling; the heterogeneous mass is breaking up and entering into new combinations; these combinations are crystallizing into courts, circles, lodges, and clubs.

The transition period is not quite complete, for they are still hot and vapory, and it will not be before the perfect arrangement of their atomic equivalence, which in workingmen's lodges should mean fair dealings with others as well as between themselves. As I speak, the orators of their social propaganda are shouting from the sand lots and declaiming from work benches to their auditors, the people, the advantages to be derived from the workingman's lodge and the special blessing it bestows on him by associating himself with them. "Only be one of us," say they, "and you will have all of the necessaries and many of the luxuries of life at retail for wholesale price. Your family physician charges you from $1 to $2 a visit for professional services. We can give you these services by contract at from 5 cents to 25 cents a visit. The doctor on your block charges $3 for a night call; we can send you our lodge doctor, who will do the same work for 25 cents, and who will get out of bed at the tap of the bell to answer your summons. We have ways and means for doing things cheaply, since we retail at wholesale prices. This is only one of the many advantages we offer to you, as, for instance, $5 per week as a sick benefit, free drugs, and free burial, and if you are conspicuous among us—that is, if your talent soars above by making revolutionary speeches and denouncing capital—we will fill the papers with a glowing obituary of your worth and our sorrow, and erect a monument to perpetuate your memory." So determined and persistent have been the apostles of this gospel of socialism in private and public, in season and out of season, that their converts are as numerous as the sands of the sea, and workingmen's lodges as plentiful as strawberries in June. The whole union is one vast camp of workingmen's orders, known by hundreds of names, as suits the taste or fancy of the organizers. The lodge doctor has a place in this great army; it is not an honorary but a numerical one, and he has often to dance to poor music and bite the dust to please the hardest of all task masters, the laboring man suddenly thrust into power. The old adage, "Put a beggar on horseback," etc., has its exemplification here in the abuse of opportunity and the vindictive and cowardly spirit shown to the helpless and dependent under his control.

The mania for the formation of societies and lodges has had a steady growth for thirty years. From the national guard of the State to the chowder club in the ward, the same spirit is manifest, namely, a hankering after martial glory and a kind of independent, self-sustaining spirit. The habit for combination has become so popular that wherever a workingman is found there is a lodge or society man of some sort or description; if he is not, he was approached

and refused to be one for some conscientious or other reason Even women and children are deemed fit material for their designs, and are being drummed into the lodges of these socialists to be beneficiaries in common with the male members. The ladies' honorary lodges of this or that order and the children's lodges are common phrases nowadays. The whole fabric of society is honeycombed with these lodges and circles, and if the excavations continue the end cannot be far off; that end will be chaos and social anarchy and finally ultimate ruin to the workingman himself, since he cannot logically expect better treatment from the capitalist whom he denounces than he is willing to mete out to his own subordinates and others over whom he has a temporary control. It is the fear of a cataclysm like this overtaking the masses that has led certain ecclesiastical authorities to view with alarm and watch with suspicion and apprehension the rapid progress made by these cabals or courts in welding the masses into one socialistic co-operative union, that may be at any time wielded as a power for evil by an unscrupulous and ambitious leader. Whether the leading spirits of these societies are animated by selfish, ulterior, and sinister motives, or inspired by humane and enlightened impulses, is a proposition presented for solution to him who comes later on the scene. In passing, however, a question may be asked: How much benefit does the workingman derive from his club or society? Is the rapid spread of the lodge and the court a harbinger of better times for the masses? Will the good accruing to them outweigh the personal freedom surrendered and the tearing asunder of social ties incidental and inevitable to the slavish obedience imposed by their order? This question, I repeat, with its many sides and various aspects, is respectfully submitted to the sociologist and student at work in the field of human endeavor.

Chapter IV. The Weapons the Lodge Doctor Uses to Accomplish his Purpose. His Methods.—It is in his methods that the lodge doctor stands out conspicuously and excels all others. In the lodge he has a field suitable for his peculiar talent, and he works this field with an ardor and vigilance that command attention if not respect. As his reflexes do not respond rapidly and his circulation is torpid, he does not mind the snubs and kicks he occasionally receives when forcing his professional attentions in unappreciative quarters. He is, however, not unconscious of these marks of esteem, but considers it neither wise nor expedient to war on conditions which may enhance his financial status at some future period, though confessedly detracting from his personal and professional estimate by the impartial observer of all the circumstances involved in the curious case. This physician bows with seeming alacrity to circumstances he is powerless to avert or control, and stoops to conquer.

It is really amusing to watch one of these fellows courting popularity and the devices adopted to make his presence known to the denizens of his bailiwick on a pleasant summer morning or afternoon, while taking his casual but well-considered stroll as he mechanically glides along the flagged walk. With eyes turning at once to all points of the compass, and with the rapidity of thought rotating around his cranium, he sees friends, real or imaginary, craning their necks to meet his smile half-way. It may, perchance be in a doorway, at a window, or by a basement gate. His sight is keen and discerning, and at the slightest sign of recognition his face is aglow with a radiant smile, and pleasurable sensations, like forked lightning, shoot up and down from his head to his heels through his spinal arch and through space to greet his appreciative and new-found friends. Then commence the hat evolutions and the good-natured grimaces, the obsequious bowing and nodding and swaying of the body, like a dervish at prayer. No circus clown, contortionist, or Hindoo juggler could begin to be in it with this acrobatic artist of the sidewalk and Knight of the Golden Rod. So rapid are his motions and so continuous his efforts that he is in peril of his life from sudden disarticulation of the atlas or fracture of the odontoid process of the axis. This gentleman aims to catch the public eye by expertness in bowing, nodding, and dodging with limitless area of smile and the hat trick developed to a fine art. His method in this respect differs widely from that of his advertising brother, commonly known as quack; his manner of operating is in marked contrast to the latter's. The quack appeals to his constituency through the press: outside of it he is as impersonal as the hospital doctor or a Parsee deity; he wraps himself in a mantle of mystery and prefers the people to know him as one who works miracles through his communion with nature; that he seeks her in the solitude of the wilderness, follows her through the shadow of darkness and into the bowels of the earth, and there importunes, implores, beseeches her to impart to him the power so potent with her over health and disease and the lives and destinies of men, that he may go back in triumph to his forum, and from the rostrum of its columns shout aloud to the maimed and the sick to come and be healed.

Now, through the instrumentality and judicious use of the lodge Dr. Quick is about to accomplish a remarkable feat, and that in an incredibly short space of time too. He knows that other physicians in his neighborhood have worked for years with a tireless industry to establish themselves in practice, and often without success. He wants to be wholly successful, and quickly at that, as he is anxious to show these laggard physicians what a hustler can do; and herewith he accepts the honor of being medical adviser to the order of the Knights of the Golden Rod. This honor, by the way, was up at auction for six months waiting for the lowest bidder; so it was knocked down to Dr. Quick, since he underbid all competitors. As the remuneration was small and the terms incidental to its acceptance were so contemptible and humiliating that none of his neighbor physicians cared to be in any way identified with it, Dr. Quick jumped at this opportunity; in the lodge he saw a weapon with which to strike his professional brothers and further a means to emancipate himself from the clutches of the bailiff who had him in the toils for numerous board bills he was careless about paying, and tailoring on the instalment plan, the contract obligation for which he refused to comply with, though he loved to exhibit himself in the latest style and put himself on exhibition at an hour when beauty and fashion were wont to patronize the thoroughfare.

After thirty years of active practice I surrounded myself with a remunerative *clientèle;* now Dr. Quick has pulled me down and built on my ruined reputation a fortune in five years. It will now, my dear friends, be my task to tell you of the methods by which Dr. Quick accomplished this remarkable work.

In the beginning Dr. Quick was careful as to the means to be employed in laying the foundation of his fortune. He did not advertise in the papers or pay a thing in fantastic regalia to distribute hand bills on the avenue; that sort of thing had too much the odor of the quack. He has no objection, however, when the lodge members extol him, and sound aloud his praise, and give a wide publicity to his feats in surgery and his skill in the art of healing. It pleased him immensely, when some enthusiastic lodge brother whispered in the ear of the enterprising reporter, that he might be able next morning to read with rapture of himself. There it could be seen by all, not as a vul-

gar advertisement but as a thing accomplished—a fact, a triumph, a successful operation on a town councillor at midnight. It was a difficult and dangerous operation, but the skill and nerve of Dr. Daniel Webster Quick, medical director of the Knights of the Golden Rod and consulting surgeon to the sister lodge of the Magic Circle, were equal to the occasion. His skill and pluck at that supreme moment snatched victory from defeat. Other physicians tried this operation before and failed, but it was reserved for Dr. Quick to be the pioneer and for the lucky councilman to be the subject of his success. In the manner of his methods, as was before touched on, Dr. Quick differs widely from the symptom-blank man, who generally works in the light and above board. Dr. Quick toils with ingenuity in the night when the members are mellow after the hop, when the fluids in the refreshment cabinet run dry. At this happy period there are a thawing and a melting away of formalities and an interchange of confidences worthy of the physician and his voluble and versatile constituency of the lodge.

The First Step toward the Accomplishment of his Purpose.—Dr. Quick makes it a point to appear radiant and resplendent at the oft-repeated reunions of the lodge, and always by one means or another manages to make himself conspicuous and to be the centre of attraction, sometimes by the singing of a song, at other times by the recitation of some patriotic exploit. If the American element is dominant in the crowd, it will love to hear the "Star Spangled Banner" or the "Sword of Bunker Hill," and the valor of Old Put will fire the martial heart. If the majority be of Teutonic origin, the "Watch on the Rhine" is very apt to rouse the fire dormant in their sluggish blood. If the Celt is the major element, "The Wearing of the Green" or "The Harp that Once through Tara's Halls the Soul of Music Shed" will cover Dr. Quick with glory and transform him into their household idol for many moons. If some member is absent from one of those reunions, Dr. Quick is thoughtful. Next day he will make it convenient, but in an easy and indifferent manner, to call on the member. He is not fearful of an accident, though all may not be well; however, he only dropped in casually as he was passing by. He looks affectionately on the children, asks if Santa Claus was around at Christmas; and if so, what he brought to the twins, who, he is certain, look wonderfully like their father, the worthy vice-president of the lodge, though he sees the eyes and nose of their mother, Mrs. Tubbs. "Strange blending of two in one," quoth the doctor in an undertone of reflection. "Are they vaccinated, Mrs. Tubbs?" She declared they were, three months previously, by Dr. Butts, her family physician. "Mrs. Tubbs, would it be too much to ask you, have you a yearly contract with Dr. Butts the same as I have with the knights of the lodge of the Golden Rod, or perhaps you pay him by the visit? In that case medical attendance comes high, as those old-fashioned physicians attach great value to their services. It is often my duty, Mrs. Tubbs, a disagreeable one, I assure you, madam, to point out their faults and remedy the blunders they are continually making in sick-rooms. It is not an uncommon thing for them to mistake one disease for another, but, Mrs. Tubbs, those fellows never mistake a five for a ten-dollar bill when being paid for services they but poorly rendered."

"As you asked I will tell you. Dr. Butts was my mother's doctor and he has been in our family since my marriage to Joshua Tubbs, now nearly ten years since." "Yes, Mrs. Tubbs, I nearly forgot. Vice-President Tubbs has asked me to be his guest and recite a piece at your wooden wedding next Monday night. I am sure the invitation has your indorsement." "Indeed, it has; we will be only too happy to have the pleasure of your company on that occasion, my dear doctor," said Mrs. Tubbs. "My husband has repeatedly told me you were excellent company and the soul and life of a party. Why, we will be delighted with your presence. Why not bring a nice young lady of your acquaintance, or, Dr. Quick, if you don't mind, I will introduce you to my niece. She came out last spring and was received with enthusiasm by the society folks of this town. Yes, Dr. Quick, Eveline Tubbs was an immediate and unqualified success—stately in presence and of unusual accomplishments. She is sought after and admired by all." Dr. Quick: "It will give me great pleasure to meet Miss Tubbs on Monday night, and allow me, Mrs. Tubbs, to express my sense of gratitude for your thoughtfulness and concern about me."

Just as Dr. Quick was about to take leave, Mrs. Yep, wife of the sergeant-at-arms, entered. She was a mutual friend and well known to Dr. Quick and Mrs. Tubbs. She was excited; she came to tell of a calamity that had happened in the Quigg family. Poor Mrs. Quigg had expired only an hour ago! The announcement of her death fell like a thunderbolt on her numerous friends. It was too bad that such misfortune should visit the household of the janitor of the lodge. Dreadful! Just think, only two months ago he lost his only boy, George Washington Quigg, and now his good wife! Yes, awful to contemplate! Four little girls, too, are left to mourn their loss by the premature taking off of a devoted and affectionate mother. "Mrs. Yep, what could have caused the sad event?" said Mrs. Tubbs; "why, I saw her at church last Sunday." "You took the word out of my mouth, Mrs. Tubbs. I was just going to tell you all about the unfortunate affair—blood poisoning; yes, blood poisoning, that was what it was, Mrs. Tubbs." As the words "blood poisoning" died away on the lips of Mrs. Yep, Mrs. Tubbs raised her eyes heavenward imploringly, while a chill crept over her body. Had not a lady, a dear friend of hers, died of that dreadful disease? "Oh, Mrs. Yep, the thought of that tragedy makes me shiver! It was Dr. Fly, Dr. Quick's assistant, we first blamed for it. I was there when Dr. Butts was sent for, to ascertain, if possible, the cause of the delirium and high fever, by her brother, my husband, Mr. Tubbs, vice-president of the Knights of the Golden Rod, who, as you know, places the most implicit confidence in you, Dr. Quick." "Ladies, Mrs. Tubbs and Mrs. Yep, it was my duty to ascertain the cause and place the blame where it belonged, just on the shoulders of Dr. Butts; yes, I had to do my duty, regardless of whom the lightning struck. My assistant was blameless, and had the family been wise enough to continue his services in place of calling in old Dr. Butts the result would have been different. Dr. Fly telephoned me that the family on the third day after the miscarriage substituted some one else for him, and that he was dismissed from the case. In such a contingency and a question of professional honor affecting my worthy assistant, Dr. Fly, there was no alternative left for me but hurry from the mountains, where I left the president of the Union Trust Company, who was suffering from angina pectoris, in care of my assistants, to investigate and ascertain the facts in this case, and relieve if possible Mrs. Topsy, the sister of my worthy brother, the vice-president of the Order of the Golden Rod. Poor woman, though I travelled by express, she expired twelve hours before I reached her bedside. I will admit Dr. Butts saw her only once, three hours before she died, but on that occasion he injected something under her skin. Now the question is, what was that something? There was only one way to find out, and that was a coroner, an inquest, and a rigid investigation. I shudder myself from the consequences that would befall Dr. Butts if such an in-

vestigation were permitted to proceed. I advised my worthy brother, Vice-President Tubbs, to let the matter drop, as investigations were powerless to bring back the dead, but they could harrow feelings already lacerated and make a lot of trouble for Dr. Butts. I advised that the matter should be dropped, and Dr. Butts left to settle the affair with his own conscience. I feel now, as I felt then, that the sting of remorse is the greatest punishment to inflict on a human being. Poor Butts, how he must have suffered."

Chapter V. Dr. Quick is Repulsed, it Being a Setback to the Conspirators.—When Dr. Quick entered the door he felt rather sorry for coming, but since he had made an engagement with Mrs. Muggy to meet her at the house of Mrs. Lutts, he then had no option in the matter. The ladies were talking in an animated and bellicose tone. It was on the subject of the relative merits of their respective physicians. Mrs. Muggy had promised Dr. Quick the day before that she would win Mrs. Lutts over to him, and that at her next lying-in he would be substituted for that crusty and haughty old chap, Dr. Gee, whom she hated. Dr. Quick had only a speaking-acquaintance with Mrs. Lutts, as her husband, Trustee Lutts, was only a recent recruit and brother lodge member of the worthy Knights of the Golden Rod. In Mrs. Muggy, however, he had a powerful and influential friend; she could sway all and manipulate at her sweet will, and often had she turned defeat to victory. She was, however, rather astonished to meet such opposition in Mrs. Lutts, who fought like a fury for her old physician, Dr. Gee, who she admitted was proud and old fashioned; though he had been her physician for eight years he had called only once without a professional summons, and on that occasion it was while attending her neighbor next door, a lady suffering from melancholia. "Don't you know, Mrs. Muggy," said Mrs. Lutts, "that over-familiarity detracts from a physician's respect and otherwise impairs his usefulness?" "Oh, yes," said Dr. Quick, taking up the remark dryly; "there is an old saying that 'familiarity breeds contempt,' but I presume, Mrs. Lutts, I know when and where to be familiar, and believe I have not overstepped the bounds of gentlemanly reserve and good breeding in making a passing unconventional call on the wife of a member of the knights of our ancient order. It is the doxology of our creed to cultivate a spirit of kindly relation and mutual good fellowship between each other and between our families; to a knight of our order the family circle of his brother knight is a retreat from care and a home of relaxation and repose. We respect social obligations, and the family relation to us is supposed to be as the apple of one's eye, a relation to be guarded with a jealous care."

"Dr. Quick, I fear you have misunderstood me and misconstrued my words; I had no intention to be personal when I mentioned some of the characteristics of Dr. Gee," said Mrs. Lutts, who continued: "I may cause you some disappointment and very possibly may make an enemy of Mrs. Muggy when I say that I am perfectly satisfied with my old physician, Dr. Gee. The arguments by which Mrs. Muggy endeavored to prove his incapacity were offensive and distasteful to me, and only raised him higher in my estimation." Mrs. Muggy chafed under the setback she received from Mrs. Lutts, not so much for herself, she said, as for that college-bred gentleman, Dr. Quick, whom everybody but that Lutts woman loved to honor. It was outrageous to offend him to his face—the kind, good, dear man. She would go and see her other friend, Mrs. Tripp, who expected to be confined in a few weeks. She would have no trouble there; that case would be a sure thing for Dr. Quick, and it would be rather a surprise for him to know that she had interested herself again, for she had said, after the insult Mrs. Lutts had given her, that she would quit further introductions and canvassing; in short, that she would leave off prospecting altogether, but would continue her kindly relations with and good will for Dr. Quick.

Mrs. Muggy was not any more surprised than was Dr. Quick, when she entered Mrs. Tripp's parlor, to find Dr. Quick playing with old Gip, Mrs. Tripp's pet dog. He had understood that Mrs. Tripp was about to be confined, from a hint dropped by ex-President Tripp of a kindred lodge, the Knights of the Magic Circle, and had only dropped in just as he was passing the door. He inquired what fee she had paid Dr. Gee for his services in her previous cases and whether she intended to have him in this, her approaching accouchement. "I have had him engaged for the last two months," said Mrs. Tripp. "You know Dr. Gee is a stickler for etiquette, and would not attend even me, whom he knows so well, without that necessary formality." "Pity about the old chap," broke in Mrs. Muggy, who was an intensely interested listener to the conversation. "Dr. Quick, won't you tell Mrs. Tripp about that dreadful Mt. Carmel case; it makes beads of perspiration stand out upon my forehead when I think of it. Indeed, it is the most horrible case I ever heard of." "No, you tell it, Mrs. Muggy," said the doctor, "as you are better acquainted with its early history than I. You are perfectly right though, Mrs. Muggy, it was a most sad case. Kindly make the recital as brief as you can, as I have an operation to perform on Bishop Soule at four o'clock. My four assistants will be waiting; it is now three." "Well, she lived in Mt. Carmel," began Mrs. Muggy. "She was Vice-President Call's sister of the Circle of the Harvest Moon; she was a near relative of Vice-President Tubbs' wife. Just on the ninth day after her confinement, and three hours after Dr. Gee left with his fat fee of $25 in his pocket, averring as he went that all was well and that Mrs. Rocks could sit up next day, poor woman! she was seized with a chill and a dreadful spasm convulsed her frame. She frothed at the mouth and kicked and bit like a person afflicted with hydrophobia. Poor woman; I feel overcome. It almost makes my heart stop. I had to run at midnight for Dr. Quick, as her good husband, the major-domo of the Golden Rod, was ill upstairs. It is surmised that he ruptured a blood-vessel in an effort to throw a heavy hammer sixty yards. Poor man, it fell on his toes. Since then he has been a cripple. At this crisis in the affair, of course we naturally lost confidence in Dr. Gee, who lives near by. I ran quite a distance to summon Dr. Quick, and by good luck he was at home and immediately accompanied me to the sick-room. Poor Mrs. Rocks, it was pitiable to see her, but noble to witness the effort poor Rocks made to limp downstairs when apprised of her danger, and to see him wipe the beads of perspiration from his good wife's brow and kiss her florid cheeks. Mrs. Tripp, I am growing faint with the realization of this horrid drama; won't you finish the dreadful story for me, Dr. Quick, as I am overcome with emotion and feel dizzy in the head." Dr. Quick: "Anything to oblige you, Mrs. Muggy. To begin, between spasms she had strange delusions and weird fancies; she thought Dr. Gee was a goblin and about to devour her child; again, she thought he was a child snatcher, and made desperate efforts to prevent him from laying violent hands on her boy, who was reposing quietly in his crib. The frenzied woman—it was very trying to be a witness of her despair, but beautiful to see the effort she put forth to save her child from the designs of Dr. Gee. After this episode Dr. Gee's name grew hateful, and I thought it expedient to caution those about to abstain from using that name at all, as every time the patient heard it uttered it was only to bring on another attack, more dreadful than the previous one. As the ladies

in the sick-room were showering on Dr. Gee epithets not of a complimentary nature, because of the condition in which he left the sister of the most worthy vice-president of the Harvest Moon Lodge, I told them not to blame him too much; that perhaps Dr. Gee did all in his power for Mrs. Rocks; but that there was a probability that he did not understand or recognize the symptoms of the coming nerve storm when he left her house three hours before. In that case, I did not think it fair to blame him for a condition of which he had no knowledge; against him, however, was the fact that he undertook to accomplish a something that was beyond his ability, with almost disastrous results to the accomplished wife of the major-domo of the Golden Rod, who himself unhappily was ill at this particular juncture, suffering from the bursting of a blood-vessel and fracture of a tarsus from the accidental falling of a heavy hammer. Yes, good ladies, I said that Dr. Gee, in the spirit of a selfish pigheadedness that is born of ignorance and arrogance, undertook a task for which he was by nature and training wholly unfitted; as before said, to the detriment and injury of that interesting and once happy little family about whom we were so alarmed just then. My advice was to move cautiously in the matter and leave him severely alone, as Dr. Gee was operating at great risk to his own reputation, as well as to the life of Mrs. Rocks. I told them that there was a retribution for him, from which he would be as unable to escape as was Dr. Butts from the dreadful blunder he made in taking the life of Master of Ceremonies Janitor Quigg's wife of the Order of the Golden Rod. Yes, there is a retribution, a reckoning for all, and when that day comes it will be a dreadful one for Dr. Gee as well as Dr. Butts. I said that by following this advice Dr. Gee would escape the shame of being dragged into a police court, and I the mortification of having to appear as a witness against a brother physician."

Dr. Quick neglected to add, as he was in a hurry to operate on the bishop, that it was hinted by some cruel gossips that Mrs. Rocks was running the beer can pretty lively that evening for the accommodation of the numerous lady friends who called on her after Dr. Gee left, to see who the baby looked like and if he had a dimple in his chin; poor Rocks upstairs, unconscious of the revelry below, was nursing injuries sustained by a foolhardy attempt to exploit himself with athletes of high muscular development, while he was only a mass of adipose tissue.

There might have been a grain of truth in these cruel rumors concerning Mrs. Rocks' doings on that memorable night, since it was certain that she had had some previous attacks of a like character and under convivial but not parturient conditions.

Chapter VI. A Confab between Lodge Chums.—"I declare, you are on foot early, Dr. Quick; you caught the spirit of the old proverb, that 'the early bird catches the worm.'" "Yes, Brother Sparks, I sat up all night to catch the bird, not the worm, and the little chap weighed ten pounds and fifteen grains. Mrs. Tripp was delivered of a boy just two hours ago, and, Sparks, I am going to surprise you. Don't say a word, but it was baptized immediately and called after you—yes, after you—Jeremiah Sparks Tripp. You know, your uncle was Mrs. Tripp's godfather, and one good turn deserves another. Sparks, old boy, they paid you a high compliment, but not one too high for the luminary and leading spirit of the good knights of the Golden Rod." "Come, come, Dr. Quick, none of your flattery," said Mr. Sparks. "I cannot stand it on an empty stomach and so early in the morning. Indeed, I did not wet my whistle yet—I mean I did not have a drink to take the cobwebs off my heart yet, as you know I am doing the mission at the Holy Cross." "Yes, Brother Sparks, I was pleased to hear it from Mr. Jung, the armor bearer of our lodge, yesterday. It will be an excellent example for all of us to follow; don't you know I intend to do the mission myself next week?" said Dr. Quick. "Look here, tell me, doctor, why they hurried up that christening," said Mr. Sparks, with a look of curiosity and merriment in his eye. "Well, it was in this way, Brother Sparks; it was a long labor and a short cord; as the infant was in peril of being asphyxiated, I thought it expedient to give him private baptism." "Did you drink his health, Dr. Quick?" said Mr. Sparks again, with a twinkle in his eye; "I infer so, as you are so jocund and happy." "Quit your fooling, Sparks; you know I am a temperance man for the last two weeks, since I fell down that three flights of stairs at McCarthy's christening. You know he is a worthy knight of the Magic Circle. Good morning, Brother Sparks; you will be at the lodge meeting to-night for the election of a trustee to fill the place of our late lamented Brother Muldowney." "I'll be there, Dr. Quick." "Good-by, Brother Sparks. Just wait a minute, Sparks; I have a favor to ask of you this evening, and I hope you will grant it." "I'll grant you anything, doctor."

Dr. Quick was the picture of happiness as he tripped lightly over the flagged walk, while the creaking of his new russet shoes made music in his ears. Why shouldn't he be happy—his life a series of triumphs and his heart overflowing with happy anticipations?

The Confab Continued after Midnight.—After the meeting to fill the place left vacant by the defunct Muldowney, President Sparks and Dr. Quick retired to the refreshment rooms downstairs—the café of the Golden Rod. Mr. Sparks and Dr. Quick sat at a small table in the distance, out of earshot of the crowd. After doing justice to the goodly spread, in which pickled pigs' feet played an important part, and washing down the repast with generous mugs of new ale, the two gentlemen grew confidential; as more ale was absorbed, they grew still more confidential, until finally the molecular particles of the finer ether filling the interstices of their cerebral spaces began to vibrate and bring them into still closer communion; now their lives mingle, and the lodge brothers, as if free from the encumbrances of physical environments, fly into each other's confidences—two lives as one—a brotherhood of mutual love.

"Jerry, you recollect I said this morning I had a favor to ask of you after the lodge meeting this evening." "I remember it well, Dan; what is it?" "It is this, Jerry. Your good wife Sarah could do me a good turn if she felt so inclined; indeed, she could fill my office with patients and my ledger with influential names. Could you not bring some influence to bear on her in my behalf? She seems not to take kindly to me, and that of no fault of mine, Jerry, as I left no stone unturned to win her from her idol. I pointed out the stupidity of old Dr. Gee, told her of the advantages she would derive if I was her family physician, mentioned the saving to you, Jerry, of at least $100 a year—yes, every year—and that is an item, I tell you, these hard times, don't you think so, Jerry?" "Dan, I explained all this over and over again to Sarah, but it seems to me that old Dr. Gee has hypnotized the poor woman. I don't like his eyes, Dan; there is a strange light in them, and he often makes passes with his hands, just as if he was giving the sign of his order—no doubt a diabolical one—to some elf or goblin unseen by our eyes, Dan, but perfectly visible to his." "Jerry, won't you speak again to Sarah?" "I will, Dan." "You know, Jerry, I never went back on you yet. Recollect last winter when you had the pneumonia, and in the spring when you had that terrible attack of peritonitis, and this fall that frightful attack of typhoid; Jerry, during all that time I stood right by you, always making it a point that your sick benefit

came to the house every Tuesday. If the treasurer did not bring it, I brought it myself, to make sure that you got it." "Dan, I am not unmindful of your many kindnesses; you know it was my vote saved you in committee, or else you would be courtmartialed for attending the picnic without displaying the emblem of our order at our reunion with the Magic Circle." "Jerry, I never forgot that act. How you waited until the other fellows tired themselves out shouting for my resignation, my impeachment—in fact, for my blood. You turned the tide, Jerry, by a master stroke, one worthy the hand of a Richelieu—yes, Jerry, you saved my skin that time; now, Jerry, I want you to be as successful in winning over Sarah as you were in defeating the designs of my enemies." "Dan, rest easy; me you have always, but the names of Sarah and Evangeline will be on your books before the robins nest again; further, I will make it a point that you will be the medical adviser of the whole Sparks family before six months from this night, and every friend of theirs they can influence. Dan, why have you grown sad? Have you got a sting from that old neuralgia again, or is it a toothache?" "No, Jerry; it is a heartache. Thoughts of other days crowd upon me and envelope me in an atmosphere of gloom. Jerry, when I am overtaken with these strange fancies I am afraid of myself. I want to take refuge somewhere out of my own existence." "What other refuge for you, Dan, than the bosom of your tried and true friend, Jeremiah Sparks, of Sparksville." "Jerry, my confidence is well placed and my refuge sure." "Dan, cheer up and tell me what made you sad." "Jerry, don't ask me. I am overwhelmed." "Overwhelmed with what, Dan?" "With conflicting emotions, Jerry. They are chasing each other like clouds over the moon on a clear, windy night." "Dan, you are a riddle." "No, Jerry, but I am unfortunate." "Why unfortunate, Dan?" "Because, Jerry, I was born with too sensitive a nature; as fine cloth with a soft nap attracts the particles flying in the air, so does my delicate nature invite attack." "Oh, yes, Dan, I see now; you were born with a thin skin." "That's it, Jerry." "Cheer up, Dan, cheer up, my boy; you are better off than the other fellows born with the bark on; they cannot feel the play of the emotions, and are impervious to both joy and sorrow. Cheer up, Dan, my boy; it's all in a lifetime. Remember the lines of Gerald Griffin:

"'Joy has its measure,
We live but to die.'

"Jerry, the sky is clearing, I feel myself bracing up; your cheering words, Jerry, have inspired me with new hope and infused into me a new energy; I feel now refreshed and able again to renew the fight against gloomy thoughts. I have now completely mastered my emotions." "Dan, the emotions are like a spirited but unruly steed, best controlled by whip and spur. Coaxing won't do, Dan; it is adding fuel to flame—the whip and spur, Dan, the whip and spur, and ride him into submission. As the saying goes, 'You must fight the devil with fire.' Dan, you have heard, 'Like cures like,' or, as old Dr. Gee used to say, '*Similia similibus curantur.*' Indeed, he said it so often that all the babies on the block have it pat and know it by heart." "Jerry, please don't mention that old homœopathic fake; his name sends a chill through me. I have no use for him. If his skin was mounted, I have no doubt that the directors of the Museum of Natural History would find a corner for it. Yes, Jerry, my emotions almost choked me, but I finally choked them; yes, Jerry, I gave them the whip and spur, the whip and spur, Jerry. You asked me, Jerry, why I grew sad. It was at the mention of the name Evangeline. That was my mother's name, a name and memory dear to me. I had a sister also of that name, who retired into a convent early and died young. Jerry, it was these sweet and sad memories that overwhelmed me, but you are a tower of strength to me now, and I feel comforted in the shadow of your presence, buffeted about, as I was, by the winds of fortune, and sailing aimlessly on the sea of destiny. It was a kind fate that listed me to this port and a providential hand that gathered me under the wings and made me the medical guardian of the physical welfare of our noble circle, the worthy knights of the Order of the Golden Rod, of which you, kind friend and brother, have the honor to be presiding officer. Don't you know, Jerry, you should be a happy man?" "Why so, Dan?" "Because you are in the midst of such kindness, tenderness, and loveliness, surrounded by an affectionate and confiding family, and drinking deep draughts of domestic joy—a joy I don't begrudge you, but one too great for me to hope for. Jerry, might I dare to hope?" "Yes, my boy, hope and wait. They say all things come to him who hopes and waits, Dan." "Notwithstanding this proverb, Jerry, I might hope and wait until the crack of doom before a thing—did I say a thing?—no, I meant an angel like Evangeline would come in my way." "Why, Dan, I declare you are in love." "I am, Jerry."

Dr. Quick tapped his bell for an attendant to fill up the mugs again, when suddenly Mr. Sparks was called to a distant table to settle a quarrel between worthy brothers of the Golden Rod over a card game. Dr. Quick, being in a hilarious mood, grew affectionate toward the waitress, a winsome barmaid, of whom the café of the Golden Rod was proud. She resented his familiarity with spirit, and it was only by the coolness and tact of the sergeant-at-arms and the master of ceremonies that a row was averted, as the vice-president, a noble knight of the Harvest Moon Lodge, was head and ears in love with the buxom lass.

The president, Mr. Sparks, a man with great common sense, took in the situation at a glance, and, with the aid of a trustee and two censors of the lodge, hustled Dr. Quick into a cab, where he persisted, in spite of the jeers of the driver and the protests of his brother knights, in singing "Sweet Evangeline" until he reached the door of his lodgings.

Chapter VII. An After-Supper Chat between Husband and Wife.—"I have bulked it, I have bulked it, Sarah!" exclaimed Mr. Sparks to his wife, as they sat for their usual after-supper chat in their cozy sitting-room over a busy laundry, owned and operated by Trustee O'Rourke, of the worthy knights. "What do you mean, Jeremiah, by 'bulked it'?" said Mrs. Sparks. "Well, Sarah, it is this. You see, times are hard and money is tight; to me just now silver dollars are as big as cart wheels and as scarce as hen's teeth. So you see, Sarah, I have to take in sail." "Jeremiah, you have been sailing already under close canvas; if you take in any more sail, your bark will look like a plucked buzzard, and you will be scudding under bare poles. Now, Jeremiah, come to the point. What do you mean by 'bulked it'?" "Oh, nothing, Sarah, but that I lumped it with Dr. Quick." "Jeremiah, I feel that you have been carousing with Dr. Quick again. I hate that man, because he made it a point to run down Dr. Gee every time he came to see you last winter and spring. On one occasion he told me you had typhoid fever, but Dr. Gee said it was only an attack of diarrhœa. You recollect the morning I had the hemorrhage from the nose, when, after he ministered to my wants, I sent him in to see you, much against his will and yours. He told me on that occasion, a thing I knew beforehand, that you treated him with scant courtesy, refusing to give him a history of the case; but enough was learned, nevertheless, to enable him to make a positive diagnosis. You also recollect, Jeremiah, just this time a year ago, when according to Dr. Quick you had your first attack

of tuberculous meningitis. Dr. Gee laughed heartily when I told him of your symptoms, and said you had only hemicrania, that tuberculous meningitis was a fatal disease, that if the diagnosis was correct treatment was useless. To my pleasure and surprise, Jeremiah, you and I danced at the hop of the Golden Rod after Dr. Quick made the fatal diagnosis. After that incident I had no faith in your lodge doctor, but was drawn closer to Dr. Gee, who I felt was a thorough physician, besides being a true friend of the Sparks family. Dr. Quick knew then I did not regard him with a kindly feeling, as I took no pains to conceal that fact; it seems to me, a mutual dislike sprung up between us." "Now, Sarah, I want to tell you something. Kindly listen to me. This is how it is. I can be sick when I feel like it; I have only to touch a button—Dr. Quick does the rest. I just say 'Hello!' to my lodge doctor; he comes at my call like Rover (Rover jumped from the hearth at the sound of his name from his master's lips); and, Sarah, I only pay him $1 a year. Just think, Sarah, $1 a year! What a cinch, Sarah! So much talent, and so cheap! You see, Sarah, there are about one hundred of us noble knights, just a hundred; we will not take another member. That means $100 for Dr. Quick. Of course, deducting his carfare, it means a little less; but, Sarah, as his legs are very long and his understanding is great, he really does not spend much carfare. He has a knack, Sarah, of standing in with us boys, being one of ourselves; of course we leave no stone unturned to put him through, by throwing every nickel possible in his way. Yes, Sarah, we do what we can for the poor young fellow, as he is very obliging to the knights and handy around the lodge; he is a knight himself, too, Sarah, otherwise he could not be our doctor. Our druggist also, Sarah, is a knight, and we get our prescriptions compounded for little or nothing, because our knightly brother gives us the benefit of a copartnership. Sarah, the framers of our constitution were great and good men; they anticipated our every want and supplied our every need. They inserted a sick-benefit clause to provide for our families, and there is a burial fund too, as I told you on a previous occasion. Thoughtful knights these—legislators great and good. Their motto is ours, 'One for all and all for one.'

"By the way, Sarah, I have a bill for $50 from that fossilized antiquarian, Dr. Gee, for six months' professional services rendered to you and Evangeline." "I think it is a very reasonable bill, Jeremiah. I thought it would be twice that." "It was, Sarah. He took fifty per cent. off." "Well, that is very reasonable, Jeremiah, and exceedingly generous on the part of Dr. Gee—noble old gentleman that he is. Only about $1.50 a visit, including two night calls." "Sarah, how can you call that reasonable? You remember, I counted the calls Dr. Quick made on me last year—two hundred and seventy at this house, and I made two hundred calls at his office—and for all this, just think, Sarah, I paid Dr. Quick but $1. How does that compare with your Dr. Gee? Put that in your pipe and smoke it, Sarah, and you and Evangeline compare notes and see who is cheaper—Dr. Gee or Dr. Quick; and further, allow me to tell you, Sarah, I don't have to wait twenty-four hours for my doctor as you have sometimes for yours, as often he is busy with other patients, sometimes he has rheumatism, and other times he is under the weather; with Dr. Quick things are different—he is as sound as a young colt and quick as his name implies, and, as I told you a minute ago, he comes at the tap of my bell. Sarah, you recollect my pneumonia last winter, my gastritis in the spring, my appendicitis in the summer, and this fall my terrible attack of tuberculous meningitis, not counting the frightful attack of typhoid last Christmas. Sarah, it's awful, what I went through; my constitution must be as tough as hickory wood, to stand the strain of so much sickness. I must have my horoscope cast, Sarah, as I think I was born under a lucky star; if I were not, the daisies would now be growing over me, and I would probably be forgotten by all—not all, Sarah; I am sure you and Evangeline would make pilgrimages to my tomb and scatter wild flowers there to mingle with the daisies." "Jeremiah, darling, stop—I shudder! It will be only too soon if ever I should be forced to contemplate a disaster so overwhelming to myself and Evangeline as that would be." "Yes, Sarah, I am fortunate in my numerous sicknesses. You know how the Rev. Mr. Black died from pneumonia in four days' illness, and how he was cremated, to the horror of his congregation, to whom he preached in humility and hope for thirty years, and always emphasized the resurrection of the body, never forgetting the tomb and the grave clothes, how, to their pain and surprise, his last words were emphatic and explicit, that his body be cremated and his ashes scattered to the four winds of heaven. It was only last night, Sarah, that I was told confidentially that Dr. Black's life was a sacrifice offered up by a bungling physician on the altar of his stupidity, who at the last moment consented to see Dr. Quick in consultation, though asked and requested by the family to take in a consultant at the outset. Yes, Sarah, Dr. Gee has many sins to answer for; they are piling up every day. His judgment and his reckoning must be terrible; I shudder to contemplate that unfortunate man's future. Yes, Sarah, I heard that the Rev. Dr. Black could have been saved but for the stupidity of your old physician, Dr. Gee. My informant said there was nothing to him but a name, only a name, Sarah. Doubtless you have heard the old saying, Sarah, 'Get the name of being an early riser, and you can sleep until dinner time.' The name, Sarah, only the name." "I think I can guess your informant, Jeremiah. Was he not Dr. Quick? I heard him whispering to you in the parlor about Dr. Black's death. Evangeline overheard him abusing Dr. Gee." "Sarah, I won't enlighten you on this matter now. I will only say I told Mrs. Black, the clergyman's wife, to get Dr. Quick at the early stage of the disease; I told her he was a brilliant and accomplished physician, and very reasonable in charges. Had she taken my advice, Sarah, her husband, that good clergyman, would be alive and well to-day and in his pulpit, preaching the glad tidings of salvation to his people." "Jeremiah, talk is cheap; others have not such a big opinion of your lodge doctor as you have." "What do you mean, Sarah? Whom have you reference to? Who are the others? I presume that old razorback, Dr. Gee, has been telling you something detrimental to Dr. Quick's character. If Dr. Quick heard of this he would pulverize that queer specimen of the genus homo for his insolence, as he is very quick—acts on the spur of the moment and thinks later. Sarah, don't you know Dr. Quick came from good stock. On his mother's side he is related to the Websters of Massachusetts, and on his father's side to the Boones of Kentucky. Yes, Sarah, he brought his fiery temper from Kentucky, and his profound learning is an inheritance from his immediate progenitor, Noah Webster, of world-wide fame." "Jeremiah, I believe Dr. Quick has been fooling you about his distinguished relatives, as he has about your numerous diseases. I have heard he is of very humble origin." "Who told you, Sarah?" "Dr. Lee, whom Dr. Butts left in his practice last summer while on his vacation, told my sister, Mrs. Low, in my presence, that as a rule lodge doctors did not amount to much; he said they went into the lodge for what they could get out of it; that they simply used it as a means of locomotion to push themselves along—in fact, Jeremiah, to make stepping-stones of their brother knights, in order to

reach a place of security and emolument for themselves. Dr. Lee said no self-respecting physician would touch the average lodge with a forty-foot pole; there was a fishy odor about it, he said, that savored of the costermonger, mingled with the dance hall. These lodge doctors, he said, delighted to boast of the number of their daily calls, the dangerous nature of the diseases they treated, and the miraculous cures they made. With these fellows, a common cold was the first stage of pneumonia, and a pain in the belly a symptom pointing very strongly to peritonitis. This was a trick they played to catch the unwary, and was inspired by ignorance, ambition, and cupidity. Of the knights themselves, the doctor remarked, they were mostly lubbers of the bread-and-butter brigade, who delighted to strut and masquerade in the armorial trappings and regalia of Richard Cœur de Lion and Henry of Navarre, heroes of a chivalrous age. He said the only fight the paper knights of the noble order of the Golden Rod could make was to overpower the quartermaster and storm the commissary."

Mr. Sparks was visibly affected by Dr. Lee's arraignment of Dr. Quick and the noble order over which he had the honor to be presiding officer. The storm was rising and his blood began to boil, when his good wife kissed him on the cheek and said: "Jeremiah, dear, you know I only repeated what Dr. Lee said." Mr. Sparks, choking his anger, asked casually: "Who is this Lee? Where does he live? Has he an office? If so, when is he likely to be found in?" Mrs. Sparks referred her husband to her sister, Mrs. Low, wife of the armor bearer of the Harvest Moon Lodge, who might furnish the desired information.

Where the Chat becomes Interesting, Showing the Weakness and Vanity of the One and Subtility of the Other.—"Sarah, I had a friendly chat with Dr. Quick last evening, after the lodge meeting in the ballroom over the main hall. He has agreed to attend our family for $5 a year," said Mr. Sparks. "That is what I meant by 'lumping it,' Sarah. It means that I made a contract with Dr. Quick to attend you and Evangeline—myself, of course, included in the lodge contract—for the sum of $5 yearly. Now you know what I meant by 'bulking it,' but of course you know there must be pickings thrown in. We must introduce him around, get him acquainted, and push him along. The only thing he has against him is his youth, as he is not yet quite forty, and, Sarah, you know it's no crime to be young." "Not at all, Jeremiah. I would like to be young again myself, but you know we can't be young always." "You are young yet, Sarah." "Jeremiah, dear, you flatter me." "I mean it, Sarah." "Really?" "Most certainly." "Evangeline, don't take me up that neuralgia medicine from the dining-room to-night—my headache is gone," said Mrs. Sparks to her daughter, in a tone of pleasure and with a satisfied air. Mr. Sparks saw an opportunity in the good humor of Mrs. Sparks to renew the battle for Dr. Quick, whom he knew Mrs. Sparks despised. "Sarah, shall I tell you something?" "Yes, Jeremiah, tell." "Don't you know Dr. Quick has a very high opinion of you—a very high opinion, I assure you?" "A high opinion of me, Jeremiah? Why, I declare I did not think Dr. Quick knew enough of me to form an opinion other than an unfavorable one," said Mrs. Sparks. "Sarah, Dr. Quick is bright, the genius of his family, the Websters and the Boones—a magnificent combination. Courage and ability are stamped on him with the letters patent of nature. He is brilliant, Sarah, and reaches conclusions rapidly, and they are as correct as the sun dial in our garden, and as certain as that Deacon Parr goes to sleep when our good minister, Mr. Snow, is just in the middle of his sermon. I tell you, Sarah, Dr. Quick is a reader of character; he certainly has read and interpreted yours, and in a most favorable light to you, my dear. He said you ought to be decorated with the order of the Red Cross Society for the excellent care you took of me when I had that last attack of cerebro-spinal meningitis four weeks ago." "Jeremiah, dear, you say Dr. Quick interprets me. If so, how can it be otherwise than to my detriment, for I cut him dead at the picnic of the lodge last summer in McNooney's woods when he asked me to lead the dance with him in the cotillion. I gave him a cold stare and immediately afterward danced with Dr. Felix McFadden, sergeant-at-arms of our sister lodge of the Magic Circle. Jeremiah, you fill me with astonishment by imparting the information that Dr. Quick has a high opinion of me." "He has, Sarah." "Jeremiah, dear, what more did he say about me?" "Dearest, if I were to tell you all the good things Dr. Quick said of you, they would fill a book." "Go on, Jeremiah, and tell me all." "I will to-morrow, Sarah. I am tired and the hour is late." "Go on, Jeremiah, go on and tell me all. You can sleep late to-morrow morning. I am willing to go to church alone." "Sarah, I prefer you would excuse me to-night." "Jeremiah, dearest, you know I am kind of sorry I cut the poor fellow so in dancing with Felix McFadden of the Magic Circle, and that cold stare—O Jeremiah, that cold stare!" "Sarah, I see you are a woman." "Why, Jeremiah?" "Because you are inquisitive." "Jeremiah, you know that it is a woman's privilege to be inquisitive." "It is, Sarah: and a man's to be the repository of secrets." "O Jeremiah, has Dr. Quick told you something you will not tell me?" "Sarah, if I tell you all, it will make you too proud." "Jeremiah, dearest, don't you wish to make me happy?" "I do, Sarah." "Then tell me all. Go on, Jeremiah, go on." "Well, Sarah, since I must, I must. You know Dr. Quick calls me by my first name, Jeremiah or Jerry, and I call him Dan: we are bound by an oath of brotherly love. Further I cannot go, as it would be revealing the secrets of a sacred brotherhood. He said: 'You are a happy man, Jerry.' I answered: 'True, Dan, I am. How do you know, Dan?' 'Because I saw your happiness reflected in your good wife's face as you both walked up the aisle of the church yesterday, while I was on my knees at prayer in St. Rutherford's. Jerry, your manly bearing, like a knight of old, erect and stately, commanded the attention of all; but, let me add, admiration and respect were centred in your good wife, who walked by your side, and whose queenly presence overtopped and eclipsed that of any woman there. Indeed, her youthfulness and beauty almost rivalled that of her daughter, Evangeline, who later knelt at her side in prayer.'" "Jeremiah, he talked of Evangeline too, did he?" "He did, Sarah." "Why, I thought he was very sweet on Miss Tubbs, Vice-President Tubbs' niece." "Oh, that was only a passing fancy, dearest." "Then he did talk of Evangeline, Jeremiah?" "You ought to have heard him the other night, Sarah." "Was he as full as when at Mulcahy's wake, Jeremiah?" "Yes, he was full and happy, Sarah." "My dearest, you say he talked of me and Evangeline?" "He talked of Evangeline continually, Sarah." "Jeremiah, I am awfully sorry now I cut him so at McNooney's woods. My darling, when is the next picnic?" "No picnic, this fall," said Mr. Sparks, with regret in his manner, "as the season is far spent: but when the moon is full we will have a husking-party at Gilhooley's, the chamberlain of the Forest Rangers." "Jeremiah, give me the almanac. Oh, it's so long, it's so long. The moon should be full four times a month." "Sarah, you want to accomplish the impossible and subvert the order of nature." "Jeremiah, I want to accomplish my purpose. I do now really feel ashamed." "Ashamed of what?" said Mr. Sparks. "Of how I treated that dear, good man, poor, kind Dr. Quick. I

hope he has forgiven me." "He has, Sarah; he said so last night." "Jeremiah, I knew I was good, because you so often said so, but it was left for Dr. Quick to discover it in a new light and impress that discovery on you, as I hope he has on all. Oh, my, my! I can hardly forgive myself for dancing with McFadden of the Magic Circle, and the cold stare I gave the poor, good, thoughtful Dr. Quick! Jeremiah, dearest, you were right, as you always are. I do now myself think Dr. Gee rather superannuated. However, he is going to move up town the 1st of May; it will furnish us with a respectable pretext for dropping him. If he makes any inquiry afterward, we can say we are never sick—that the neighborhood has got very healthy since he moved away. Jeremiah, darling, I have a favor to ask of you. Will you grant it?" "If I can." "You can, Jeremiah." "All right, then, I will. What is it?" "It is this. I want you to take a chill and shake as hard as you can, just as you used to do before when you wanted to be put on the sick list, for a rest and a week's benefit, and went fishing on the quiet." "Sarah, you are giving me away." "Jeremiah, it is only between ourselves. You know we are the guardians of each other's confidences. Get into bed now. I will cover you up with blankets, put hot bottles to your feet, and rub your face with my vermilion powder; it will make you look feverish. We will tell Dr. Quick you had a spasm, then a chill, after which followed a high fever and a profuse sweat. Get into bed quickly, dearest, until I make my arrangements and put the room in order. Everything is ready. I will now run to Mr. Brown's, the lodge druggist, down the street, and ring up Dr. Quick." "Sarah, you know Mr. Brown is in bed, as it is quite late." "Jeremiah, I will find a means of awaking him. You know it is only half-past twelve. I want the telephone. I will run quickly. I anticipate no mishap—the moon is half full and shining brightly. I will call my mother into the room to comfort you while I am gone; but, dearest, don't attack her again on that mortgage transfer question, as she might have another of those fainting-spells. Good-by, darling, for a few minutes."

"Sarah, you were not long." "Oh, Jeremiah, I had a dreadful time to wake up Mr. Brown. He could easily take rank with the seven sleepers. I heard him snoring outside the door; I had to ring, ring, ring!" "Sarah, come here. I have not kissed you since our silver wedding last week, but twice." "Let me go, Jeremiah, let me go. You are too profuse. Let me go—I see Dr. Quick running up the road; he has entered the lawn. Evangeline, bring me my curling-tongs, quick! quick! Evangeline, the curling-tongs, the curling-tongs, and the Jockey Club—it has the most delicate odor. The peach-blossom powder, the peach-blossom powder, mother. I see him coming, I see him coming. He is at the door. Quick! quick! Evangeline, or you are late!"

Chapter VIII. When Occurs the Accidental Meeting of Friends. Its Influence on the Practice of Medicine.—Immediately as Dr. Gee was about to finish his story, all with one voice exclaimed, "Come in," in response to a knock at the cabin door. It was the steward come on board; he remarked that he was rather late, being detained half an hour in watching the antics of a curious old man who was sitting on the stringpiece of the quay in the immediate vicinity of their sloop. "What does he look like?" said the captain, "and why did he attract your attention?" "Because he was talking to himself and opening and closing a satchel at intervals," said the steward. "He took from the satchel a shining steel; it looked in my excitement like a pistol, and I was afraid he would shoot me before I reached cover behind an old anchor on the dock. As I peered from my place of safety, I saw it was a long and peculiar instrument, having a handle and blade not unlike a small oar." "You said he was talking to himself; what did he say?" asked Captain Post of the steward. "He said, 'He has robbed me of my patients, vilified my character, and set me adrift on a cold and uncharitable world, that he might drive me to the poorhouse or the insane asylum.'" Dr. Gee, becoming interested, remarked: "You say he is an old man, steward. Won't you describe him more minutely?" "Well, he is tall and thin, with shaggy eyebrows and a keen, searching eye, in bearing erect and dignified, with flowing beard frosted by the winters of many years: wearing a long military coat, Kossuth hat, and buckle shoes." "It is Dr. Butts," said Dr. Gee; "the instrument he was handling was a forceps. How did you come to observe him so minutely, the night being so dark?" "It was in the glare of the electric light up there. Look through the window; it is as bright as noonday," said the steward. Dr. Gee continued: "He was doubtless practising on imaginary patients, having none other since the advent of the lodge doctor. He has one of his moods on; he gets them occasionally with the blues." "Who is the subject of his soliloquy?" asked the hostess, Miss Post. "Oh, that scoundrel, Dr. Quick, of lodge notoriety, of course," said Dr. Gee. "Dr. Butts is an equal sufferer with myself from the tricks and machinations of this man." "Invite the stranger aboard," said the captain; "he may refresh your memory on facts that doubtless have escaped your mind and cast further light on Dr. Quick's motives in bankrupting brother physicians, gentlemen of his cloth."

Dr. Gee whispered to Captain Post, as they descended the gangplank in quest of Dr. Butts, not on any consideration to mention the fact of his attempt at suicide. "Rest easy on that matter, my friend; your secret is safe in the keeping of my daughter and myself. We have been the repository of secrets before. Yes, I repeat, rest easy; we will extend the same courtesy to you as to others who have gone before you."

"Dr. Gee, you must be fatigued from the recital of this story; it being personal and so vitally affecting yourself, can only increase that fatigue." "I am fatigued, and feel hardly able to do justice to the concluding chapter in the history of this iniquitous scoundrel," said Dr. Gee to Miss Post. He continued: "Since Dr. Butts has suffered equally with myself, he is acquainted with all the facts in the case and can take up the burden where I laid it down, thus bringing the sad story to a conclusion. It is now eleven o'clock; the moon will be up at midnight, to light Dr. Butts and me to our humble lodgings." "The moon has little significance in the vicinity of great cities," said the captain. "The street lamps rob her of her glory. In the tropics and near the equator, where night falls suddenly, the moon is a special favorite. The sloops in the harbors and the ships in the bays look anxiously for this moon, and there on people's lips are the lines:

> "'Waiting for the rising of the moon,
> And for the evening gale.'"

"It was a piece of good fortune that sent you this way to-night, Dr. Butts. You will entertain and instruct us by sharing the labors of a friend; the interpolation will add zest to the story, while making its truth more apparent and impressive," said the captain. "A task has been imposed on me to-night," said Dr. Butts, "which I am afraid I am not equal to, especially in coming after a master so skilled in the art of weaving facts into story, and telling that story in a manner unique and impressive and with a gracious good will that adds to its power and virility. Since, however, it is the pleasure of the company that it should be brought to a conclusion by me, I will endeavor to be fair to the parties concerned, while point-

ing out the manner in which the lodge doctor affects the practice of a profession so dear to my colleague and me. I repeat, a task has been imposed on me to-night, but it is a pleasant one; it relieves one's feelings to ventilate them on an old and arch enemy, and Dr. Quick has demonstrated by the recital of his methods that he is such. This lodge doctor has from the beginning of his career been opposed to honest practices, and from this fact is hostile to the interests of every painstaking, conscientious physician. He is secretly at outs with the whole army of practitioners, not so much for personal or individual reasons or dislikes, as because they interfere with his schemes and designs to climb to the top in his profession by ways that are dark and by tricks that are transparent. We have seen him leave the highway to cross lots where no trespassing is permitted and creep stealthily through the back door, that he might be accounted in the ranks of the worthy. He dared not face the censor, for fear of being rejected as unworthy and turned back. He was well aware, when he entered into a humiliating and disgraceful contract with a confederacy of men designating themselves a lodge, to be their body servant and pound keeper, or, as they called it, their medical director for the paltry sum of $1 a year from each member, that he was dishonoring the profession of which he claimed to be a part. These hundred men, banding themselves together and constituting a court, imposed conditions on him which still further degraded him and reflected on his profession; it was stipulated that he must qualify to be one of them before he could be eligible to this office they had up at auction—in short, he must be a knight of their order; and further, he must be the lowest bidder. Their contract with this lodge doctor is ironclad and on a strictly legal basis, the wording unmistakable and explicit. This physician, really only a vassal and body servant, has to do the bidding of his masters; as a rule, he tries to please by always obeying his lodge brothers. To the familiar greeting, 'How do you do, doc, old boy?' from his knightly brother, he responds, 'I feel bully, Jimmie; how do you think you feel yourself?' To this good-natured banter may be added a smile or a glass, as circumstances may permit, but his lodge brother reserves to himself the right to be critical, severe, and aggressive, and often the vassal doctor dares not approach his master until his wrath is spent and the clouds of his displeasure have rolled away. His hauteur being dissipated, he may condescend an interview or appoint a time for one, or perhaps might be disposed to be convivial. This lodge doctor, by his contract with his lodge, must be ever ready to run to the bedside of a brother member, night or day, late or early; that member has the precedence and right of way over all others for his vassal's services; he, the brother, has letters patent to that effect locked up in the safe at the rooms of his lodge, or perhaps has the resolution framed and hung up in his bedroom, that it may be read by his physician, better to remind him of his duty; at least, it is certain the original resolution is reposing in an iron box, and the keys of that box in the hands of the armor bearer and keeper of the scroll; those letters of marque, the magna charta of his manhood, are guarded well, resting in iron coffers, and hang like the sword of Damocles over the poor vassal's head. If he is tardy, or if he talks back to the insolent demands of his erstwhile brother because he did not run quicker or because he waited to dress before obeying his master's summons, he is sure to be disciplined, fined, or deposed at the next meeting of the lodge. This poor wretch has attended the famous hundred for the fiscal year just passed for the munificent sum of $1 a head. During this year he made six hundred calls on his family of brothers, and they returned his visits by making about nine hundred at his office; this would make them more appreciative than he, for they go him one better; they visit their servant's office on the slightest pretext, and often they persuade the poor man that they are sick, for reasons well understood by both and told by Dr. Lee to Mrs. Bly in the presence of Mrs. Low and her sister, Mrs. Sparks, wife of President Sparks of the noble order of the Knights of the Golden Rod. On examination, we find twelve hundred calls on Dr. Quick's ledger for the calendar year just closed as medical director of the Knights of the Golden Rod. According to Dr. Lee, a careful observer, Dr. Fly, of the Harvest Moon Lodge, made sixteen hundred calls on his constituency of brothers, numbering one hundred and ten souls, for which he received $105 for his year of service just ended now and for good, as he was not re-elected beca .se of inefficiency. Some of the members brought charges that he made only two calls a day on a brother suffering from grippe, when the bylaws demanded three or even four; they said this disease needed constant watching, lest it should develop into pneumonia. It appears that Dr. Fly received seventy cents a head, or one and one-half cents a week, as medical director for his yearly guardianship of the one hundred and ten knights of the Harvest Moon Lodge. Dr. Lee further told me that Dr. Fox came near being defeated at the polls for re-election by the Magic Circle, an exclusive and aristocratic lodge of ancient knights; he received sixty-five cents a year, or about one and one-quarter cents a week, from each individual comprising the lodge, the membership being two hundred. Dr. Brass, a knight himself, underbid Dr. Fox at the auction before the election, and undertook to treat the members for sixty cents apiece as yearly dues; but, as Dr. Fox had powerful and diplomatic friends in the lodge, he triumphed over his almost successful rival. It was further enjoined on Dr. Fox that during his official year, if he was unfortunate enough to break down, as he did the previous year from overwork, he should not have as his assistant Dr. Steel, who had the temerity to talk back to the armor bearer when chided about some lodge matter, but that Dr. Brass should take his place during his inability; further, serious consequences ensued to the members of the Harvest Moon Lodge when Dr. Fly was in Europe, from the inefficiency and incompetency of the aforesaid Dr. Steel, who shamefully neglected his duty and violated a most important amendment to the constitution when he failed to give the sign of the order at a chowder party of the knightly Sons of Rest. It might here be added that Dr. Quick himself had a narrow escape at his re-election, for unsatisfactory treatment given to a brother who contracted a severe cold while attending a picnic in McNooney's woods. It can, my friends, be seen that these lodge doctors receive but the veriest pittance for services which in a perfunctory routine manner must be laborious; they do not average seven cents a visit as compensation from their knightly brothers. These brothers copy very closely the methods of State-prison contractors, who give about one-tenth the value of services rendered. The time of those physicians is almost wholly occupied with their lodges, yet the income each receives from his lodge is less than the earnings of a third-rate office boy. Where, then, does the lodge doctor get his living from? It is on record that he eats well and, thanks to the instalment system, dresses fairly well too. He cannot do this on his office-boy salary; he will collide with the police if he has recourse to the commoner methods adopted by those who don't know how or are too lazy to work; the fellow is too proud to beg. What, then, must he do? A flood of light is cast on his methods as we see him in the person of Dr. Quick, invading households with the members of which he has only the slightest acquaintance, on the

pretext of making inquiry about a brother member who failed to attend the meeting at the rooms of the Golden Rod. We see him operating with the assistance of female confederates. These confederates he equips with a repertoire of slander, and launches them on the households of those he thinks they can most readily influence.

"At about the time the virus from the tongue of his confederate begins to be active, Dr. Quick, the lodge physician, finds it convenient to be on hand to clinch the falsehoods of his female friend, who is as eloquent in his praise as she is loud in denunciations of Dr. Gee, who has been the physician of the family for years. In the opinion of this female confederate of Dr. Quick, Dr. Gee is losing ground every day, misfortune seems to be his companion in his daily rounds, and death marks his patients as its own. She tells artfully how Dr. Gee lost forty patients last year from blood poisoning, and about forty more from his surgical bungling, and numerous others from neglect and general incapacity; she adds: 'Her friends all say they are through with him; she would advise others to wash their hands of him before it be too late, as was the case with Vice-President Tubbs' sister, of the order of the Golden Rod, who lived at Mt. Carmel, and poor Mrs. Yep, the wife of the sergeant-at-arms of the same knightly circle.' These conspirators, Dr. Quick and his female confederates, usually janitresses, busybodies, and silly women, generally pile up falsehood upon falsehood on the character of Dr. Gee, the family physician, as they have so often upon my own; indeed, they have declared holy war against us and assert that we are dangerous as advisors, treacherous as friends, feeble and inconsequential as enemies. 'Let them retire,' say they, 'to the obscurity from which they never should have emerged — anywhere, any place—to the poorhouse, a sanatorium, or a lazaretto; for the sins they have committed of omission and commission inside and outside the sick-room cannot go unpunished. After all, perhaps the fittest recompense they could make is to rid the world of themselves after making full confession and some reparation for their crimes before their tragic but deserved death.'"

At this hint of suicide Dr. Gee grew deadly pale, a thing that was observed by the captain and his daughter, but not noticed by Dr. Butts, who was absorbed in his story, or the steward, who was absorbed in Miss Post. The story was interrupted for a moment until Dr. Gee, who had fainted, regained his composure, a thing which he did after the windows of the cabin were opened and a volatile salt was applied to his olfactories by the kind hostess. Dr. Gee, being extremely sensitive, was fearful that his effort at self-destruction would become known to his friends, before whom he wished to appear, not as a saint or one holier than thou, but as a man who was able to bear up against adversity and wait patiently for the hour of his justification, which he was sure would come, and when it came make that justification complete by confusing and confounding his enemies and driving them from remorse to confession.

Chapter IX. The Horizon Darkened and the Outlook Not Inviting for the Medical Fraternity.—To-day the shadow of the lodge doctor hangs like a black cloud over the practice of medicine. At first this cloud was no bigger than a man's hand; now it has assumed gigantic proportions and threatens to be precipitated in a social deluge that will sweep away all semblance of the etiquette and traditions that have hung with pertinacity for ages to the toga of the doctor. Three thousand years ago we found him at the bedside of his patient, counting the cardiac impulses, formulating a treatment, and making a prognosis to attentive and appreciative ears. Down through the ages we see dynasties rise and fall, republics come and go, empires laid waste and nations devastated by the sword and pestilence; innovations and experiments appear only to perish on the altar of expediency or be dashed against the rocks of popular disapproval, while old ones again emerge from musty tombs for further test of efficiency and value. Through the mutations of time and fortune the lustre of the doctor was never dimmed, his armor was bright and radiant, shining through the reflected light of a popular approbation and love. Now a change has come over the spirit of this picture; the physician, who was high from time immemorial in popular regard and rested securely in the confidence of the people, is thrown from his pedestal, stripped of his dignity, and pointed at with the finger of scorn by the consorts of this mendacious and insolent usurper, the lodge doctor of the worthy Knights of the Golden Rod. The physician, who was cherished and loved, is to be from this time forward a hewer of wood and a drawer of water to a commonalty which at one time was wont to respect his wish and anticipate his pleasure. The divinity which hedged him in has evaporated, and he stands revealed a creature subject to his environments and the necessities of the hour, fighting in the ranks for his bread and butter like other poor mortals. The tidal wave of slander and mendacity directed against him by the creatures of the lodge has landed him high and dry on the shore of commonplace, to be the companion of the licensed vender and dealer in old bottles; not a semblance of respect left for him now, only that he is handy to have around in time of sickness, just as a chimney sweep is welcome when a flue is stuffed or a plumber when a waterpipe has burst.

"Jupiter, son of the morning, who is the author of our humiliation? Echo answers, 'The lodge doctor,' and we have still lower depths to reach," continued Dr. Butts, "because of our vacillation and pusillanimity and his cunning and cupidity, which will make us the laughing-stock of the world, while it will place him in position more exalted. To increase his influence and dollars, he can be observed after midnight sitting at a table with his crony and bosom friend, the worthy president of the Knights of the Golden Rod, Brother Sparks, talking in a low and earnest tone of voice about his claim to recognition at the hands of the families of the noble knights; he pours slander after slander into the ear of his midnight chum about the character and professional ability of a brother physician. At that table the lodge doctor made dishonorable proposals to his knightly chum, and bid for the family practice as he did for the guardianship of the order of the Golden Rod, by offering his professional services for a song as an entering wedge to the household of his lodge friends.

"Before the advent of this lodge doctor, the family physician had a hearty welcome and an open door through every avenue of society, from the lower to the higher walks of life; his professional fee was established by custom and circumstances incidental to the individual case, cast in the crucible of popular traditions and sealed by the usages of ages. This man, like a disgruntled Malay of the archipelago, runs amuck with professional etiquette, tramples under foot its cherished traditions, and plays hari-kari with its laws and customs; he fraternizes at lodge reunions with every Tom, Dick, and Harry, and for patronage fishes in cheap cafés after midnight with riotous laborers, accounting them as his friends who have labelled themselves as ostensible knights, claiming kindred with chivalrous heroes of legendary renown. This conduct on his part must be fatal to the interests of a profession whose claim to public confidence has heretofore rested on courtesy, intelligence, and self-sacrifice, before the advent of this lodge doctor and now his numerous imitators outside of lodge circles."

When we consider that there are hundreds of Dr.

Quicks attached to lodges in every great city of the Union, and that they are falling over each other in their indecent haste to be first in the race for popular favor, we must recognize that the influence they exercise over the practice of medicine is potent for evil. They are opposed to the existing order of things in the old medical camp, and rebel against its peace and prosperity. It is plain, with those thousands of lodge doctors scattered everywhere, and the lodges themselves at work scooping in everything in sight, from a bank president to a hotel runner, that the days of the old-fashioned family practitioner are numbered and that he will be in time to come as rare as an ethnological specimen of a prehistoric age. This lodge doctor has impregnated the people with the leaven of discontent, and sown the seeds of disrespect for the medical cloth, that must be apparent to the most casual observer of the manners and customs of to-day, compared with those of a generation ago. The cry has gone up long and loud from the medical jackals of the lodge, and it is, "Away with him, away with him! crucify him, crucify him!" Since he has been set adrift on stormy waters, let us—

"Nail to the mast each holy relic,
Set every threadbare sail,
And give him to the god of storms,
To winter and the gale."

51 Charlton Street.

GENERAL EVOLUTION AND NATURAL SELECTION AS EXEMPLIFIED BY MAN.[1]

By LAWRENCE IRWELL, M.A., B.C.L.,
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The evolution of man from a lower form is, of course, a necessary consequence of the general theory of evolution. It was, no doubt, the realization of this fact that caused the attacks upon Darwin and Huxley as soon as "The Origin of Species" reached the reading public.

I must, once more, tell you that the theory of evolution does not entail the descent of man from any existing ape or monkey, and Darwin specifically pointed this out. I am sorry to say, however, that popular opinion still insists that man is a sort of *édition de luxe* of the gorilla or the chimpanzee.

The truth is that man and the anthropoid apes have descended from some common ancestor, and that in the course of time and as a result of natural and sexual selection the branches have diverged, the termination of one branch being man and of others the various tailless, manlike apes. While this common origin does make the tailless apes man's nearest relatives, it does not make them his ancestors. The relationship, however, is about as remote as a fiftieth cousinship, but it is not so far removed as is the relationship between, for example, the chimpanzee and the lemur.

I am anxious to point out that, whatever views you may hold upon religious questions, the admission that man has been derived from apelike ancestors by the process of evolution cannot influence those views, provided you admit—as every sane man must—that the human animal grows up by a process of development from a fertilized ovum in exactly the same manner as every other mammal.

You will remember that I gave the life history of the frog in a previous lecture. I now wish to draw your attention to the life history of man. In this case, as in the case of the frog, there exist the same sequence and the same conditions which the theory of evolution demands. A few coincidences might be explained as mere accidents, but the evidence, taken as a whole, is so overwhelming that one is fully warranted in asserting that each organism in the course of its embryological history repeats in a short period the entire history of the race.

In the embryonic history of man—and of all other mammals—there are peculiarities which, upon the hypothesis of special creation, are not explainable; in the light of evolution they are exactly what one ought to expect.

The ova of all mammals in their earlier phases pass through stages which are capable of exact comparison with those of the frog, of which I gave a detailed account a few weeks since. The ovum divides, forms the germ layers, the nervous system, the notochord, and the muscle plates in the same way. Then comes the same formation of heart and blood-vessels. In man, as in the fish, the heart is at first two chambered; then it becomes three chambered, as in the lower reptiles; and later it developes the four-chambered condition which it retains through life. In the blood-vessels are the same gill arteries as in the frog or shark, running in the same direction and uniting to form the same dorsal aorta. There is the same tendency to form gill slits upon the sides of the neck, and in exactly the same manner, as outgrowths from the throat toward the external skin. Later the blood-vessels change, the gill slits close up, except the first, which persists as the Eustachian tube, connecting the throat with the middle ear.

After a time the distinctly mammalian features become more prominent, and there comes a time when no one can determine between two embryos which is that of a man and which that of a dog. Later the two can be distinguished; but still there is no apparent distinction between the embryo of man and that of one of the anthropoid apes.

Permit me now to draw your attention to a few of the monkey-like characteristics of the human embryo. The great toe, instead of being longer than and parallel to the others, is shorter and extends at right angles to the axis of the foot, just as it does in the foot of the ape. At the seventh month the convolutions of the brain are very close to those of the baboon. According to some authorities, there is at one period a true tail extending considerably below the coccyx of the adult. At the seventh month the entire body, except the palms of the hands and the soles of the feet, is, like that of the apes, covered with hair, the technical name of which is lanugo, and which is usually shed before birth. Even after birth the monkey-like characteristics do not disappear. The young orang-outang clings with its hands to the hair of its mother's breast, and the newly born infant, so weak in other respects, will cling to any surface with sufficient grip to support its weight. Again, if you will watch a full-grown man, who cannot swim, in deep water, you will notice that he moves first one arm and then the other—the very thing he ought not to do—just as the apes move their limbs when climbing a tree.

In structure the differences between man and the anthropoid apes are, of course, very great, but they are differences of degree rather than of kind.

None of the anthropoid apes walks erect with ease, and their arms are longer than are those of man. The apes possess an apposable great toe, which enables them to hold on to almost anything with their feet. Between some of their teeth of both jaws there are spaces, known by the word diastema, and into them the teeth of the opposite jaw fit.

I hesitate to say much concerning man's brain weight, because my views upon this subject were persistently misrepresented two years ago. It is not probable that any normal adult, man or woman, has ever possessed a brain weighing less than thirty ounces; upon the other hand, it is improbable that any anthro-

[1] The substance of the final lecture of a series upon elementary biology, delivered before the Buffalo Society of Natural Sciences, during November and December, 1897.

poid ape has ever been dissected whose brain weight exceeded twenty-five ounces. Please oblige me by refraining from applying any logic to this evidence; my brain may weigh but thirty-three ounces and yours may weigh sixty-four, without your capacity being equal to mine. The extent of the so-called "gray" matter as indicated by the number and complexity of the convolutions is the chief index to the mental capacity of any individual. In considering brain weight, the body weight should always be taken into account.

The process by which man has attained his position in the zoölogical scale has not been due to physical strength, for he has conquered animals possessing far greater strength. His supremacy in the struggle for existence has been due to the superiority of his brain development.

Man possesses many structures of no possible present use, which cannot be explained upon any basis except that of descent from lower forms of life, where they were of value. I have mentioned in a previous lecture the rudimentary muscles for moving the ears; the muscles in the skin which in the lower animals serve to erect the hair, but which in man have no other function than to cause the "goose flesh" of fear or cold. The pineal gland is, I feel convinced, the remnant of a third eye, still distinguishable, though not operative, in the New Zealand reptile, the sphenodon. This gland was formerly regarded by orthodox people as the seat of the soul. The vermiform appendix, which all surgeons, except those present this evening, so dearly love to remove, is a remnant of an herbivorous ancestor which required a large-sized cæcum for the necessary retardation of a too rapid process of digestion. The use of the pituitary body, which is at the base of the nose, is still a mystery.

It is true, of course, that we cannot produce the complete palæontological history of the human animal, as we can the history of the crocodiles, the rhinoceroses, and the horses, partly because palæontology is a comparatively new science, partly because no thorough search has been systematically made—perhaps because the land of man's ancestors is now under the sea. We have, however, such evidence as the Neanderthal man, found in a cave in Prussia, about 1857, and Pithecanthropus Erretus, found in Java about five years ago. The former appears to have been a cave dweller, and his skull differs from that of any known man. The latter ought to satisfy the imagination of those who speculate concerning a "missing link." Some interesting pictures of the skull have appeared in a popular magazine.

One may assert that all the evidence of palæontology, of zoölogy, of comparative anatomy and embryology is unimportant, because the true distinction between mankind and the other animals is to be found in the region of mind and morals.

Now as to the absence of language among the lower forms of life. Of course Darwin saw this difficulty. What is language, I ask? It is the communication of thought, feeling, ideas generally, to others by means of articulate sounds. Can we be sure that the lower animals are not possessed of language in this sense? I trow not. Upon the other hand, a very little observation will convince anybody that many animals not only can but do convey to their comrades their feelings and desires. And he, indeed, will be a bold man who is prepared to deny that the numerous sounds emitted by animals play no part in this conveyance. Is there, I ask, a greater gap between the language used by such animals and the few harsh sounds employed by the lowest savages, than between the language of the lowest human beings and the elaborate speech of a highly educated American or European? The sounds emitted by dogs or horses may seem few, but it is well to remember that, instead of trying to learn what these animals know, we use all our energy in trying to teach them what we know. The natural question is, Where does sound end and speech begin? Who is prepared to draw the line? I venture to assert that the differences are a mere matter of degree. In the face of our ignorance upon this subject and the small amount of attention that has been paid to it, it is well to be very circumspect.

That organs anatomically similar, such as the vocal organs of men and apes, should be functionally different, is to my mind most improbable. The action of our vocal apparatus is dependent upon our organ of breathing, and the manipulation of respiration is partially dependent upon the position of the body. The development of our particular mode of speech is probably a correlative of the erect position so characteristic of man.

The development of language is merely one phase of the much larger question of the mental distinctions between man and the rest of the animal world, and I venture to assert that the law of the survival of the fittest is an abundant explanation of mental evolution. Do not allow any dust to be thrown in your eyes. This question does not involve the mental condition of highly civilized human beings; it is merely a question of the mental differences between the highest animals, below man, and the least civilized human beings.

Everybody knows that the lowest animals are not destitute of intelligence. In Darwin's "Descent of Man," which I urge you very strongly to read, are to be found many well-authenticated facts, showing that the same emotions and characteristics, such as curiosity, imitation, memory, attention, and even reason, are observed in some animals besides man. The love of a dog for his owner is proverbial; maternal affection is strikingly developed in many animals. Monkeys are successful as performers in consequence of their powers of attention and imitation. Ants unquestionably possess memory; and if dogs and cats do not dream, my observation must be very much at fault. Darwin has recounted some extraordinary cases of the reasoning of retriever dogs; and my own experience convinces me that the dogma that man is the only reasoner cannot be supported by any scientific evidence.

There is but one way in which all these facts can be interpreted, viz., by concluding that in all the so-called "higher" mental attributes, the true difference between man and the lower animals is, to quote from that prince of observers, Sir John Lubbock, "one of degree and not of kind."

Darwin's explanation of the psychological side of evolution essentially consists of the application of his principle of natural selection. Let me remind you that, prior to his time, psychology was a mere mass of verbosity and metaphysical pedantry; it was not a science at all, and apart from physiology it is not now and never can be a science. Darwin's discussion of instinct in the "Origin of Species," and the light he was able to throw upon obscure cases by the aid of natural selection, formed a suitable commencement to true psychological science. In the "Descent of Man" he deals with the mental characteristics of man and of other animals in a masterly manner. Congenital mental variation favorable to its possessor is very often transmitted to the next generation; and the continued survival of the fittest from a mental point of view must in time cause a gradual development of the mental faculties. All you need to do is to satisfy yourself that the process of natural selection is the truth, and then the solution of the problem is comparatively simple. The origin of language and of all the higher faculties, including reason, is the result of congenital mental variation, the survival of those best suited to the environment, and the transmission of such congen-

ital characteristics as are of benefit to the individual in the struggle for life. "I cannot doubt," writes Darwin, "that language owes its origin to the imitation and modification of various natural sounds, the voices of the animals and man's own instinctive cries, aided by signs and gestures."

In concluding this very brief sketch, I wish to read Darwin's answer to those who are shocked at the idea of having been descended from ape-like ancestors: "The astonishment which I felt on first seeing a party of Fuegians on a wild and broken shore will never be forgotten by me, for the reflection at once rushed into my mind—such were our ancestors. These men were absolutely naked and bedaubed with paint, their long hair was entangled, their mouths frothed with excitement, and their expression was wild, startled, and distrustful. They possessed hardly any arts, and, like wild animals, lived on what they could catch. They had no government and were merciless to every one not of their own small tribe. He who has seen a savage in his native land will not feel much shame if forced to acknowledge that the blood of some more humble creature flows in his veins. For my own part, I would as soon be descended from the heroic little monkey who braved his dreaded enemy in order to save the life of his keeper, or from that old baboon who, descending from the mountains, carried away in triumph his young comrade from a crowd of astonished dogs—as from a savage who delights to torture his enemies, offers up bloody sacrifices, practises infanticide without remorse, treats his wives like slaves, knows no decency, and is haunted by the grossest superstition. Man may be excused for feeling some pride at having risen, though not through his own exertions, to the very summit of the organic scale; and the fact of his having arisen, instead of having been aboriginally placed there, may give him hope of a still higher destiny in the distant future."

76 West Tupper Street.

ANOMALOUS LOBULATIONS OF THE LIVER.

By W. MOSER, M.D.,

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The liver generally consists of five lobes, viz., 1, right; 2, left; 3, lobus quadratus; 4, lobus Spigelii; 5, lobus caudatus. The three quadratus, Spigelii, and caudatus are simply small subdivisions of the large right lobe. The left lobe is smaller than the right, and is separated from it by the longitudinal fissure. The falciform peritoneal attachment of the liver, known as the longitudinal (suspensory) ligament, practically divides the right and left lobes on the upper surface. The lobus quadratus, as its name implies, is a quadrate (square) lobe, being bounded by two fissures, viz., longitudinal and transverse, and also by the gall bladder (Heath). The lobus Spigelii is the projecting portion on the back part and under surface of the right lobe. It is bounded in front by the transverse fissure, on the right by the fissure for the vena cava, and on the left by the fissure for the ductus venosus (Gray). The lobus caudatus, so called owing to the tailed mass of hepatic tissue, extends from the base of the lobus Spigelii to the under surface of the right lobe. It separates the right extremity of the transverse fissure from the commencement of the fissure for the inferior vena cava (Gray). The right lobe is about six times as large as the left. I can confirm the statement of Gegenbaur that the lobus Spigelii is very varied in shape, and also that the breadth of the lobus quadratus varies. The five fissures on the under surface of the liver serve to divide the organ into five lobes. These fissures are: 1, longitudinal; 2, fissure of the ductus venosus; 3, transverse; 4, fissure for the gall bladder; 5, fissure for the vena cava. The longitudinal fissure extends from the anterior margin to the posterior border of the organ. The so-called umbilical fissure is simply the anterior half of the longitudinal fissure, and is deeper than the posterior part. The groove made by the longitudinal fissure is a deep one. The posterior portion of the longitudinal fissure is shorter than the anterior, and constitutes the fissure of the ductus venosus. The transverse (portal) fissure is only about two inches long, but it is deep, and extends transversely along the under surface of the right lobe. This is the fissure where the portal vein, hepatic artery, duct, and nerves enter. It also transmits lymphatic vessels.

The fissure for the gall bladder (fossa cystidis felleæ) is an oblong fossa on the under surface of the right lobe, running parallel with the longitudinal fissure. "It extends from the anterior free margin of the liver, which is occasionally notched for its reception, to near the right extremity of the transverse fissure" (Gray).

The fissure for the vena cava is a deep short fissure behind the gall bladder. It is separated from the longitudinal fissure by the lobus Spigelii, and from the transverse fissure by the lobus caudatus. The right lobe has two depressions on its under surface, viz., anterior and posterior. The anterior depression corresponds to the contact of the liver with the ascending colon; the posterior depression is at the point where the anterior surface of the right kidney comes in contact with the organ. These depressions are not fissures, and are more analogous to the effects of constant pressure. The depressions sometimes seen on the upper surface of the liver (Liebermeister's furrows) are due to the constant pressure of the ribs, as in tight lacing, etc., causing atrophy of the corresponding areas of hepatic tissue. They could be mistaken for anomalous fissures of the upper surface of the liver. But any one who has seen several specimens of both can usually distinguish them. Anomalous fissures on the upper surface of the liver have not that distribution; that is, they do not correspond to the region of the individual ribs. Furthermore, I have usually found anomalous fissures of the anterior or upper surface of the liver associated with anomalous fissures of the under surface. Now and then an accessory fissure or fissures may be seen, especially on the under surface, but they are not always very deep. In the few cases of anomalous lobulations of the liver under my observation, I have found the fissures in most instances deeper than, for instance, the fissures of the lobulated kidney of adults. The lobulated kidney of adults is simply the remains of fœtal life, the kidney in the fœtus being normally lobulated. In some lower animals the fissures of the kidney are deep, and so symmetrically arranged as to make each lobe appear like a square.

I have noted in the anomalous fissures of the liver, which of course serve to divide the organ into anomalous lobes, intralobar adhesions. They are not coarse adhesions, such as occur between the parietal and costal pleuræ in disease, or an intralobar pulmonary adhesion, the product of inflammation; but they are fine and admit of being broken up so that the fissure becomes deep, and consequently each lobe becomes more prominent—more individualized. These fine intralobar bands are not the product of disease.

In the mammalia the liver is divided, like the human liver, into two principal lobes, and retains pretty much the same shape. The liver of the orang-outang is like that of man (R. Wagner). The dog and cat are much-lobed animals, having from six to eight lobes. Now, aside from anomalous fissures, which may penetrate the organ in the human being and serve to divide it into anomalous lobes, I have encountered in two in-

stances a small accessory lobe. I use the word "accessory" here in the sense that I would speak of an accessory finger, *i.e.*, another lobe is added to the normal five lobes, in the same manner that a fully developed supernumerary digit is added to the usual five digits; it is not merely a subdivision of any of the five. In addition to the usual five lobes we may find on the under surface of the organ a small mass of hepatic tissue, or a lobe, somewhat loosely attached, movable, as if hanging on a pedicle. These small accessory lobes could be mistaken for an accessory liver. They occur on the under surface of the liver, however, while an accessory liver is usually found on the upper surface, attached to the suspensory ligament.

ANGINA PECTORIS AND CARDIAC PALPITATION—THEIR SPEEDY RELIEF.

By BEVERLEY OLIVER KINNEAR, M.D.,
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Angina pectoris is usually, in fact, I may say invariably, a progressive disease, almost always terminating fatally; and up to the present the profession has discovered no remedy or remedies which will permanently arrest its course. Tonics, such as iron, arsenic, and strychnine, have thus far given the best results in extending the time between the terrible paroxysms of the disease.

It may be associated with certain forms of organic heart trouble or there may be no serious lesion of the heart itself, and yet the attacks will progress for several years, increasing in frequency and severity, and then terminate fatally.

The pain and distress caused by paroxsyms of the disease are simply indescribable; the intense pain and the sense of suffocation and impending death form a combination of distressing symptoms, greatly to be dreaded.

Have the real causes of angina pectoris yet been discovered, and, if so, are there remedies or any system of treatment which will subdue the seizures and arrest and cure the disease?

Trousseau finds a resemblance between this disorder and epilepsy, and it may also be mistaken for asthma, certain hysterical attacks, myalgia, and intercostal neuralgia, and the early stage of acute pleurisy.

The late Dr. Flint, in his "Practice of Medicine," gives such a graphic description of an attack of this complaint, that I insert it in order to analyze the symptoms, and by so doing suggest some of the leading causes of the seizure. He says: "The patient is suddenly attacked with an intense agonizing pain in the precordial region (usually commencing on a level with the xyphoid cartilage), extending through the back and along the left arm. This pain is of a stabbing character, and produces a sensation of impending suffocation—a feeling as if death was near at hand. There may be true laryngeal pain. At the commencement of this pain the countenance becomes deadly pale and is expressive of extreme suffering and anxiety; the surface is covered with a cold perspiration; the pulse falters and may be almost imperceptible; the respiration is short and hurried; the face is livid, and the patient is unable to lie down or even to move, for the least motion aggravates his sufferings. His consciousness is undisturbed, and his spinal as well as cerebral functions are unaffected; but there may be slight wandering as the attack passes off. Not infrequently the rhythm of the heart's action is undisturbed, and the patient does not even experience palpitation. Sometimes the action of the heart is so deranged that syncope or even sudden death occurs. The pulse may be slow and feeble or markedly irregular. Usually after the paroxysm has continued for a few moments, or at longest for an hour, it gradually subsides. The attacks may come on during sleep. At first there are long intervals between them, but after a time they become frequent. Between the attacks the health may be unimpaired."

What, then, are the most prominent and noticeable features of such seizures? It seems to me the most important symptoms are the pain, the cold surface of the body, and the feebleness or irregularity of the pulse, this latter symptom denoting either great weakness of the heart muscle or abnormal central nerve action controlling its function. This weakness and irregularity are especially dangerous because the patient fears to inspire deeply, believing that the pain will thereby be increased; therefore proper oxygenation of the blood during the attack fails to take place. In a person subject to these attacks they may be induced by physical exertion, mental anxiety, indigestion, and other causes; but, whatever the cause, the features of the seizures are always similar. It is of course well understood by the profession that the nervous system is involved in this disorder; but I have never yet seen any writings which attempt to explain the described symptoms as due to disease of the nerve centres, or upon such a hypothesis to set forth a treatment which, by acting upon central nerve cells, would abolish the attacks of pain and respiratory distress, thus changing the progress from a downward to an upward course, ending in complete recovery.

It is now my endeavor to present such a hypothesis and to demonstrate such a plan of treatment. Pain as a factor may be induced by two chief causes within the body: it may be the result of local pressure, as from tumors or inflammatory enlargements, or it may be a manifestation of abnormal or increased function in the sensory centres of the cerebro-spinal system, evidenced by pain at the nerve terminals connected with the affected centre.

In angina pectoris there is no local swelling at the seat of pain; rather there are a lack of circulation in the painful parts and a contracted condition of the arterioles of the whole surface of the body, demonstrated by the cold body with cold perspiration; therefore it would seem that the pain in the majority of these cases is induced by trouble at the centres of the nerves affected.

In what does that trouble consist? My own belief is that it consists in simple hyperæmia of spinal sensory centres, and my reason for this conviction is twofold. First, because the function of a sensory centre is to induce sensation; and this it cannot do unless supplied with its normal amount of blood, for the reason that the blood is the agent which carries to all organs and tissues their proper nutrition in the form of food and oxygen, and without which neither organ nor tissue can normally perform its function. This being true—and it is—then if an organ or tissue receives an excessive supply of blood in active circulation, the nutrition and function of the part will be increased. Therefore, if there is active hyperæmia in a sensory centre, there must result increase of function, which is increased sensation, which is pain. Secondly, because in a very large number of cases of neuralgia—and in one of angina pectoris—I have cured the attacks by applying cold over the sympathetic ganglia and the spinal cord, the cold expelling the excess of circulation from the hyperæmic centre or centres, with a resulting speedy cessation from pain; and in the case of angina pectoris a glow of warmth follows over the whole body, evidencing an expansion of the arterioles in active circulation in the body and extremities, resulting in a dry surface and the restoration of the normal temperature. The pain ceases at the same time. The case of angina pectoris wholly cured was a severe one in regard to pain, the patient being apparently gripped over the

region of the heart with an icy-cold iron hand, the sensation being that of great pain induced by the pressure such a hand would cause when forcibly closed over the parts held within its grasp. A spinal ice bag, worn once a day for an hour and extending from the fourth dorsal to the third lumbar vertebra, entirely relieved the patient, and now after five years he has had no return of the disease.

The cold surface of the body during the seizures denotes hyperæmia of the sympathetic ganglia, therefore constriction of the general circulation; and the treatment must be such that the blood will be expelled from these centres, and immediately this is effected it will be distributed normally throughout the body and withdrawn also from the hyperæmic spinal sensory centres, rapidly abolishing the pain. This treatment will, I believe, act at once, and give relief in the majority of cases of this dreaded disorder. It meets the indications, overcomes the attacks, and, if used wisely for a time, eradicates the central nerve trouble. Any treatment which will universally dilate the arterioles will subdue the attacks of angina; and the success which has attended the use of nitrite of amyl is, I believe, undoubtedly due to its dilating or expanding action upon the capillaries of the whole body, expanding also the contracted coronary vessels of the heart, and thus restoring strength to the organ by supplying the normal circulation to its muscles.

There is another remedy which I believe will be found most valuable in relieving the attacks of angina, and that is oxygen by inhalation. Oxygen when properly diluted with another gas of lighter specific gravity is readily absorbed by the pulmonary capillaries; and after it enters the circulation its first effect is to dilate the coronary arteries, and a normal amount of blood—saturated with oxygen—being thus added to the enfeebled organ the heart muscle is stimulated and strengthened, and its weakened action immediately overcome in the attacks of angina pectoris. The secondary action of the gas, which I have frequently tested, is to dilate every arteriole throughout the body and extremities, thus universally distributing the circulation in normal amount to the whole organism, and thereby warming the body, exciting renewed and active metabolic changes, and withdrawing the excess of the blood from the hyperæmic sympathetic ganglia and cerebro-spinal nerve centres. My belief is that oxygen alone will speedily relieve the attacks of this disorder; but in combination with cold over the spine and heat to the extremities I have no doubt that it will be found to be the speediest method of relief in such attacks. I am also convinced that if this combined treatment without the heat to the extremities be continued daily for some months, and in many instances for a much shorter time, in the majority of cases so afflicted a cure will result.

It must always be borne in mind that only pure oxygen properly diluted and prepared solely for therapeutic purposes is of any value in the treatment of disease.

The most efficient formula now in use is that of the London Oxygen Hospital, and consists of two parts of pure oxygen, one part of nitrous monoxide, and one per cent. of ozone, to keep the mixture fresh when in the cylinder.

Injurious and not beneficial results will follow the use of oxygen gas, unless it be wholly freed from chlorine and other deleterious gases always present in commercial oxygen.

It may be noted from what has been written in this paper that pure and properly diluted oxygen gas when inhaled induces the same effects upon the pulse, respiration, temperature, and nutrition, as those following the application of cold over the spine; but whether by its action through the blood upon the nerve centres or by its local stimulating effect upon every tissue cell within the body, it is hard to say.

I am inclined to the belief that, being speedily carried by the blood to all parts of the organism, its action is local upon all tissue cells, stimulating them, and thereby causing a universal dilatation of the arterioles and an active nutrition throughout the body.

Cardiac palpitation is, in my experience, very easily controlled in the majority of cases by cold over the spine, applied from the fourth cervical to the third lumbar vertebra in anæmic people or in those run down from overwork, anxiety, or the abuse of tea, coffee, tobacco, or alcohol. In cases of palpitation in those who evidence a tendency to blood to the head, or upper body, with cool or cold feet, or lower extremities, it is my practice to apply the spinal ice bag from the fourth dorsal or the third lumbar vertebra, once or twice a day for forty minutes, taking care to move the bowels regularly and fully but not excessively.

Oxygen inhalation will act in these cases speedily and curatively for the same reasons as those given when speaking of angina pectoris. Oxygen by cylinder is easily administered, as you have only to turn a stopcock, compress the nostrils, place the tube in the mouth, and after complete expiration inhale as deeply as possible, hold the inspired gas as long as you comfortably can, and then exhale slowly through the nasal passages. Two inhalations three times a day, taken standing and before meals, with an interval of two minutes between the inhalations, are sufficient for the daily treatment of cases of angina pectoris and cardiac palpitation; but in a seizure of angina the tube should be placed in one of the nostrils, the gas turned on from the cylinder, and the patient allowed to inspire the gas with the respiratory movements, and thus continue until the attack is quite relieved.

107 East Twenty-Third Street.

Progress of Medical Science.

Nosology of Syphilis.—At the meeting of the Academy of Medicine held in Paris on May 17th, M. Dieulafoy discussed the nosology of syphilitic affections of the stomach. His conclusions may be summed up as follows: Syphilitic lesions of the stomach can and do take various forms from hemorrhagic erosion to a gummatous ulceration. Probably the action of the gastric juice is a factor in continuing the ulcerative process set up by the syphilis. The symptoms of a syphilitic ulceration differ in no way from those of simple ulceration, so that the practitioner should always be on his guard and carefully interrogate any patient suffering from gastric ulcer as to the presence or the reverse of a syphilitic history. Treatment should be begun at once, for in this way a patient may often be relieved by measures in whom otherwise it would appear necessary to perform a surgical operation.—*Lancet.*

The Measurement of Smells.—According to an English journal, Eugene Mesnard, a French botanist, is reputed to have discovered a simple and easy method of measuring the intensity of an odor. He takes advantage of the delicate qualitative power of the sense of smell—that is, of its ability to discriminate between odors, although they differ only by a very little. He finds that if some very characteristic odor be mingled with the one to be measured, there is a certain point where they balance and form what he calls a "neutral odor." In this state the addition of a minute quantity of either scent causes that one to predominate, and thus a very "small smell can be detected and measured."

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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THE DECADENCE OF THE LATIN RACE.

THE opinion appears to be universal that the Latin race as a whole is on the down grade. That such is the case with the Spanish branch is a fact too palpable to be denied. Italians, too, are becoming themselves conscious that they are unable successfully to compete with the Anglo-Saxons. Even in France there exists an uneasy feeling to the same effect, and some of their writers have recently been bewailing their position and inquiring into the causes thereof. Indeed, the subject has of late been made the theme of much discussion in France and Italy, and a number of ingenious theories have been put forth in explanation of this—to inhabitants of those lands—disquieting state of affairs. *The Lancet*, commenting on this in a leading article, says: "The subject so started has evoked many interesting contributions to its discussion, but of all yet given to the world the most temperate, the most scientific, and the most conclusive is that of the professor of physiology in the University of Turin, Dr. Angelo Mosso. He takes his text from the brilliant book of Signor Guglielmo Ferrero, 'L'Amore nella Civiltà Latina e Germanica,' and cites one of its most pregnant passages on which to hang his discourse. 'The Englishman and Scandinavian,' says Ferrero, 'are sexually less precocious and cooler blooded than the Frenchman or Spaniard, and in this organic difference lies the root of nearly all the other psychical differences of the two races, northern and southern.' Not accepting this thesis absolutely, Dr. Mosso interprets it with considerable modifications, which seem to us scientifically well founded. 'Life,' he admits, 'develops more intensely, more rapidly in southern latitudes. In India the female becomes a mother at thirteen, in Italy she may become so at fifteen, in the people of the north at eighteen. As nothing happens in one sex which has not a 'harmonic correspondence' in the other, so we may say that the youth of the Latin race are made men two or three years before the youth of the north." But Professor Mosso, while conceding that in the organic differences of the two races is to be found to a certain extent the cause of the inferiority of the Latin to the Anglo-Saxon, yet does not allow that this by any means covers the whole question. He thinks, and probably rightly, that it is in the physical and mental training of the races that the cause of much of the success of the Anglo-Saxon must be sought. Dr. Mosso declares that to the American and English system of education, of instilling into the minds of the young a love of healthy out-of-doors exercise, is largely due the greater physical and mental robustness of the Anglo-Saxons.

So far as the Spanish race is concerned, their deterioration, like that of the Turkish race, must be almost wholly ascribed to the gross ignorance of the masses and to the corruption of the upper and governing classes. Indeed, there would appear to be many points of similarity between the inhabitants of Spain and those of Turkey. The Spaniards undoubtedly possess much of the Mohammedan pride and fatalism, owing perhaps to the infusion of Moorish blood in their veins. *The Spectator*, in a recent issue, gives an interesting estimate of the Spanish temperament. "Two qualities, and only two," says this journal, "certainly differentiate Spaniards from the other southern races of Europe, but they are qualities displayed in such excess that they appear to constitute an entirely separate national character, which in hundreds of years has never changed either in fact or in the impression which it makes upon the remainder of mankind. One of these qualities is a peculiar kind of pride, and the other is a steely callousness. . . . It is a quality of pride which distinguishes the Spaniard alike from the Italian and the Frenchman. A personal dignity quite apart from mere vanity appears to be as essential to him as freedom to the Anglo-Saxon or order to the German. He must, however, be callous as well as proud, or he could not let women and children die of want, or exult in the risk to human life, which, after all apologies have been made, is the true cause of excitement in the bull-fight."

SERUM TREATMENT FOR FOWLS.

ANIMALS have played a prominent part both in the discovery of diseases and of their antitoxins. If it had not been for experiments on animals, it may be said with assurance that bacteriology would not be in the advanced state that it is at the present time. Thus it appears only just that they should participate in the benefits that have been brought about chiefly through their agency. We are therefore pleased to announce that the discovery has recently been made that certain diseases peculiar to fowls have been shown to be amenable to the serum treatment. Dr. Stevenson, of London, Ontario, who is a large fowl rearer, has been making investigations into the disease known as roup, and which is stated to be the cause of death in about eighty per cent. of chickens. This disease also affects many others of the feathered tribe. The results of these investigations has been clearly to prove that roup is of an infectious nature. The normal temperature of a fowl is about 105° F., but when it is suffering from roup the temperature generally runs up to 107° F. In some cases paralysis supervenes. That the disease is communicable by means of drinking-dishes and drinking-troughs was definitely demonstrated by experiments and the bacillus was isolated. From the symptoms of the complaint and from careful examina-

tion of the bacillus, Dr. Stevenson came to the conclusion that roup in chickens was similar to diphtheria in man, and also that it was caused by a specific germ identical with bacillus of Klebs-Loeffler. It was then determined to try the effects of hypodermic injections of diphtheria antitoxin serum. This was accordingly done, and it is declared with the most satisfactory results. If this account be true, and there seems no reason to doubt its genuineness, although Dr. Stevenson can hardly expect that his name will be handed down to posterity linked with those of Behring, Pasteur, or, maybe, Sanarelli, still he deserves his meed of praise as a benefactor, both to the rearer of fowls and the consumer.

COLD TEA AS A BEVERAGE FOR OUR SOLDIERS IN CUBA.

THE perfect portable filter has yet to be invented. Those in use now, although in many respects satisfactory, have drawbacks that to a large extent nullify their efficacy. As has been recently pointed out by Dr. Sajous, a filter, thoroughly to answer the purpose required by a soldier in the field, should be strong, portable, capable of turning out a large quantity of water in a short time, and so constructed that it can be easily taken apart and cleansed. No filter at present in the market fulfils all these conditions. Undoubtedly the most certain way of sterilizing water is by boiling, and it is the best method of combating the diseases incidental to a tropical climate. Nevertheless this mode of sterilization is open to objections, not the least of which is that unless the water so treated is subsequently oxygenated it is a very tasteless fluid. The late Mr. Ernest Hart was a strong advocate of what he termed "the doctrine of the tea kettle," and many distinguished Indian commanders have testified in favor of tea as a means of quenching soldiers' thirst when on a long march in equatorial lands. The men under the leadership of Sir Herbert Kitchener during the recent campaign in the Soudan, were allowed no alcoholic stimulants whatever, but performed their long journey through the desert, ending with the victory at Albara, on cold tea.

The *Scientific American* of July 2d has an article lauding the refreshing qualities of cold tea, in which it says that "one of the most efficacious ways of quenching thirst, when there is a strong pressure for uninterrupted action on the part of the soldier, is to fill his canteen with tea. Of course this would be made from boiled water; and the addition of a few drops of lemon juice would increase its power of exciting the salivary glands to greater activity, and it is an expedient often resorted to when it is desirable that the least possible amount of liquid should be ingested. The use of tea is still further approved by the testimony of experience. Sir John Hall says: 'In the Kaffir war (1882) a march was made by two hundred men in which one thousand miles were covered in seventy-one days, or at the rate of fifteen miles a day, without wines, spirits, or beer.' Officers in India, when marches were made through malarious regions, had an opportunity to test the virtues of tea. Lord Wolseley urges its use, and the experience of the Canada lumbermen confirms its value. They spend the winter in the backwoods in the hardest sort of labor and are exposed to a freezing temperature, and while no spirits are allowed they have an unlimited supply of tea."

The fact has been conclusively proven that, when men are undergoing severe exertion in extremes of temperature, alcohol in any form is not only unnecessary but is absolutely injurious. Tea infused in boiling water is certainly much more palatable than insipid boiled water, as well as being practically harmless. Therefore there would seem to be no reason why our army in Cuba should not follow the example of their British brothers in arms in India and Egypt, and march and fight refreshed and invigorated by cold tea.

NEEDLESS NOISINESS.

SINCE we first began to advocate in the interest of the sick and nervous a diminution of unnecessary noise in the metropolis, little change can be said to have taken place. Still, in spite of the increased number of boys yelling out their "extras," and in spite of a seeming general lack of interest in the whole matter, there are signs of encouragement which we are glad to note. A correspondent writes to point out what may be done by personal effort.

Encouraged by an editorial in the MEDICAL RECORD, in which some such suggestion was made, he states that a house-to-house canvass was made "in the interest of a quiet afternoon," and all owners or occupants of houses on two adjacent blocks were asked to refrain from patronizing or financially encouraging any street musicians, venders, or would-be purchasers after one o'clock each day, and to discriminate in general against the unnecessarily noisy ones. By this means, and with a little pains taken in interviewing noisy fruit and flower sellers and bottle buyers, giving them to understand that they will meet with little success in the neighborhood if they persist in causing annoyance, the particular streets in question are reported to have become much more habitable, especially in the part of the day when invalids need their quieting nap and ladies and babies rest.

One of the most encouraging facts to be noted is the establishment of an anti-noise society in this city. It has not yet been incorporated, but hopes soon to be. A physician, Dr. Gairdner, is at the head of the project, and we wish him all success. Through the society's efforts a law was passed forbidding the hauling of heavy iron through the city's streets, unless it is packed so as not to cause the deafening din so well known to all who have heard it pass over the cobbles. A petition, signed by a number of prominent bankers, has just been presented to the Council of the city praying for the passage of an ordinance forbidding the shouts of fakirs and the "extra" cries of newsboys.

If society effort and individual effort go hand-in-hand, and every physician speaks to the alderman of his district concerning the matter and the people's desires, the day may come when will be added to New York's other attractions that of comparative peace and quiet.

News of the Week.

Dr. Nelson H. Henry, of this city, has been appointed by the President division surgeon of volunteers, with the rank of major.

The British Medical Association.—The names of those selected to deliver the annual orations at the Edinburgh meeting of the British Medical Association during the last week in July have been published. Dr. T. R. Fraser will deliver the address in medicine, Dr. Thomas Annandale that in surgery, and Sir John Batty Tuke that in psychological medicine. All the orators as well as the president, Sir Thomas Grainger Stewart, are residents of Edinburgh.

Dr. Frederick Holme Wiggin has recently been appointed by the commissioner of public charities assistant visiting surgeon to Bellevue Hospital.

A New Line of Goods at the Health Department.—The daily papers announce that the board of health has decided to put on public sale its brand of antistreptococcic serum. The serum has been made for a year past and has been furnished to some of the city hospitals, but has not before been in the market. By way of inducement the board has decided to send out a circular stating that it will make free bacteriological examinations of any cases which have been treated or are to be treated with the serum.

Dr. B. Sachs, of New York, has been elected a foreign member of the Moscow Society of Neurology and Mental Sciences.

A Yellow-Fever Syndicate.—It is reported that Sanarelli, the discoverer of the alleged bacillus of yellow fever and originator of an antitoxin serum for the cure of the disease, has sold the rights of manufacture of the latter to a firm in Montevideo for $30,000 and a royalty on all sales.

Medical College Consolidation.—The era of mushroom medical schools seems to be drawing to a close, and that of consolidation of existing schools to have begun. We have noted the union of the University and Bellevue in New York and of two colleges in Atlanta, and now it is announced that the medical department of Niagara University has been consolidated with the medical department of the University of Buffalo. This is a healthy movement, which we hope, in the interests of sound medical education, will not be checked until it has spread over the entire land.

A Medical Duel.—We learn from the *British Medical Journal* that one of the absurd French duels was recently fought between two doctors in Paris. Dr. Jean Charcot, son of the famous physician to the Salpêtrière, considering the memory of his father insulted by an article written by Dr. Lagelouze, in the *Opinion Médicale*, challenged the writer. The duel came off on June 9th, the weapon used being the sword. M. Charcot "received on the upper part of the thenar eminence a buttonhole wound four centimetres long, making it impossible for him to go on." Honor was declared to be satisfied, and all ended happily A formal protocol was drawn up in which the circumstances of this terrific combat were set forth in detail with a solemnity worthy of the occasion.

Infantile Scurvy.—Dr. Augustus Caillé, of this city, writes that the report of a collective investigation on infantile scurvy in North America, sent us by the recorder of the Pediatric Society and published on July 2d, should, according to a vote of the society, have contained the minority as well as the majority report. The former was as follows: "1. From a study of three hundred and seventy-nine cases of scurvy collected, and taking into consideration certain well-known facts regarding the disease, scurvy appears to be a chronic ptomain poisoning due to the absorption of toxins. 2. It follows the prolonged use of improper food, and abnormal intestinal fermentation is a predisposing factor. 3. Sterilizing, pasteurizing, or cooking of milk food is not *per se* responsible for the scurvy condition. 4. A change of food and the administration of fruit juice and treatment of any underlying cause is the rational therapeutic procedure in scurvy.

[Signed] "Augustus Caillé, M.D.,
"*Member of Scurvy Investigation Committee.*"

Section Officers of the American Medical Association.—The following are the officers of sections, elected at the Denver meeting in June last: *Practice of Medicine*, Frank Billings, president, Chicago; Carroll E. Edson, secretary, Denver. *Surgery and Anatomy*, W. J. Mayo, president, Rochester, Minn.; M. L. Harris, secretary, Chicago. *Diseases of Children*, Henry E. Tuley, president, Louisville; J. L. Booker, secretary, St. Louis. *Obstetrics and Gynæcology*, A. H. Cordier, president, Kansas City; W. D. Haggard, Jr., secretary, Nashville. *Materia Medica and Therapeutics*, Hunt Stuckey, president, Louisville; Leon Solomon, secretary, Louisville. *Cutaneous Medicine and Surgery*, W. T. Corlett, president, Cleveland; J. M. Blaine, secretary, Denver. *Physiology and Dietetics*, J. Weir, Jr., president, Owensboro; Lee Kahn, secretary, Leadville. *Ophthalmology*, Casey A. Wood, president, Chicago; A. H. Williams, secretary, Boston. *Laryngology and Otology*, B. A. Randall, president, Philadelphia; Emanuel Mayer, secretary, New York. *Stomatology*, George V. I. Brown, president, Milwaukee; Eugene S. Talbot, secretary, Chicago. *State Medicine*, Arthur R. Reynolds, president, Chicago; William P. Munn, secretary, Denver.

The Health of the Pope.—A dispatch to *The Sun* from London says that the European governments have been advised that the Pope's health is now so precarious that a fatal termination may come at any moment; this despite the fact that his Holiness continues to transact business and receive important visitors. His recent trouble has been weakness of the heart and poor circulation. It is now complicated by a peculiarly obstinate intestinal catarrh. Dr. Lapponi, the Pope's private physician, recently called in consultation Professor Marchiafava, and it was agreed that the condition of the illustrious patient was most critical.

Hebrew Students in Moscow.—The minister of public instruction in Russia has ordered that the number of Jewish students admitted to the University of Moscow shall not exceed three per cent. of the entire number of students in any one faculty. The Moscow *News* states that only thirty Jewish students will be admitted to the university in the autumn, of which number there will be room for but seven in the medical department.

A Plague Congress.—The Bombay Medical and Physical Society, at a recent meeting, discussed a proposal, originating with Dr. Thomas Blaney, to hold a congress at Bombay in the early part of the coming cold weather for the full consideration of all matters connected with plague. The *Indian Medical Gazette* says that in the records of the society are many old papers of the highest interest bearing on the plague epidemics in India in the early years of the century, and it is, therefore, most fitting that those records should now include an accurate exposition of modern knowledge of the disease, and the experiences of those whose task it has been to deal with it in the last two years.

Poison Ivy in the Parks.—Several cases of rhus poisoning have occurred among children frequenting the parks of this city, and inquiry reveals the fact that poison ivy grows in profusion in many of the less frequented parts of Riverside, Central, and others of the larger parks. The park gardeners say that it is almost an impossibility to eradicate the vine and that the most they can do is to cut down to the ground any plants discovered.

Dr. Friedrich v. Zenker died recently at Erlangen at the age of seventy-three years. Since 1862 he had occupied the chair of State medicine at Erlangen. In 1860 he discovered the presence of trichinæ in the muscles in trichinosis in man, thus demonstrating the nature of the disease.

The Plague in Africa.—In a lecture on the plague, delivered in Berlin on July 7th, Dr. Koch said that he had discovered a hitherto unrecognized endemic centre of the disease in West Africa. During his recent visit he learned of a very fatal disease prevailing in the Hinterland of German West Africa, and on bacteriological investigation satisfied himself that it was the bubonic plague. The mortality attending the outbreak studied by him was ninety per cent. Monkeys and rats also suffered from the disease. Koch believed that there was greater danger of the plague invading Europe than was generally supposed. There are now four recognized endemic centres of the disease, namely, Thibet, Hunan in China, the west coast of Arabia, and Kissiba in West Africa.

An Irish Hospital in Brooklyn.—Steps have been taken by the Ancient Order of Hibernians of Brooklyn to raise a fund of $100,000 with which to build an Irish hospital in that borough. The members of all the Irish societies in Brooklyn are to be invited to contribute, and a number of entertainments will be given, from the proceeds of which it is hoped the fund will be enriched.

St. John's Guild.—The floating hospital of St. John's Guild made its first excursion of the season on July 6th. About four hundred and fifty mothers and babies were taken to the seaside hospital of the guild on Staten Island, and returned in the evening.

Individual Communion Cups.—It is stated that over one thousand sets of individual communion cups were sold to about three hundred churches in this country during 1897. Each service consists of a tray and forty small cups or glasses, holding each about half an ounce.

The Portuguese Red Cross.—The vice-president of the American National Red Cross Society has received a generous contribution from Lisbon, sent by the Portuguese branch of the organization for use in Cuba.

Yellow Fever Checked.—The threatening epidemic of yellow fever at McHenry, Miss., has been arrested by prompt action of the sanitary authorities. Official advices state that the disease there has been stamped out and there is believed to be not one case in the entire country.

A Hospital Train in Collision.—The hospital train bearing two hundred and twenty-three wounded from Tampa to Fort McPherson, in Georgia, met with an accident on the night of July 10th. It was in a rear-end collision with another train, but, while one of the cars was badly broken, fortunately no one was injured.

Typhoid Fever in Camp.—There were forty-one cases of typhoid fever at Camp Alger between May 29th and July 10th, but most of them were imported and there is no fear of an epidemic. The water in the wells of the camp has been tested and found free from any contamination.

The Losses at Santiago.—A report sent to the war department on July 6th by General Shafter states that twenty-three officers and two hundred and eight men were killed and eighty officers and twelve hundred and three privates wounded during the fighting before Santiago on July 1st and 2d. The missing numbered eighty-one. The wounds are said to be of a less dangerous character than usual, only ten or twelve amputations having been needed among the large number of wounded. The rainy season has set in with full force, and our men are constantly wet. There have been some cases of tropical fever, and also a few of yellow fever at Juraguacito, or Siboney.

Red Cross in Hawaii.—The call of the first Manila expedition at Honolulu suggested to some of the residents of that city the advisability of establishing there a branch of the Red Cross Society. Accordingly a meeting was called and a society formed, with Mrs. Sewall, the wife of the American minister, as president; Mrs. Dole, the wife of the president of Hawaii, as vice-president; and Mrs. Emily Foster Day as secretary. Permission was asked and has been granted to use the emblem of the Red Cross, and the society has received official recognition as an auxiliary of the American National Association.

Statistics of the Antitoxin Treatment of Diphtheria.—From a recently published statement of the London metropolitan asylums board we learn that since the introduction of antitoxin in the treatment of diphtheria the mortality in the hospitals under this board's jurisdiction had fallen from 29.3 per cent. during 1894 to 17.7 per cent. during 1897, and there had also been a notable decrease in the mortality among cases of postscarlatinal diphtheria in the convalescent hospitals.

Ice Water on Ferryboats.—The board of health has received many complaints of late about the lack of drinking-water on ferryboats which ply between this borough, Long Island City, and Brooklyn, and it has accordingly passed a resolution that all ferryboats must be provided with ice water for passengers.

The Association of Life-Insurance Medical Directors was in session during the past week in Montreal, under the presidency of Dr. Pabb, of Richmond, Va.

Additional Red Cross Nurses for Cuba.—On July 8th, a party consisting of two surgeons, twenty-four trained nurses, four female and six male assistants, left this city for Tampa. They were sent by the Red Cross Society, and will be forwarded to Santiago as soon as possible after their arrival. The party which left New York a week earlier is already at work among the wounded in Cuba.

Aid to Dispensaries in Baltimore.—The city authorities in Baltimore have cut off appropriations to all dispensaries connected with medical schools, and have increased the appropriations to all independent dispensaries.

Maryland Medical Examinations.—About seventy young physicians presented themselves for examination before the board of medical examiners of Maryland during the semiannual examinations held in May. Out of this number about fifty passed.

A Study of Heatstroke.—A collective investigation into the nature and causes of insolation has been undertaken by the National Academy of Medicine of Brazil. The following are the points concerning which inquiry is being made: 1. Have you observed attacks of insolation, and, if so, do you attribute them exclusively to the atmospheric temperature independently of all malarial influence? If the answer is yes, in what countries and with what summer temperature? 2. Do you know the frequency of such attacks among the engineers and stokers on board steamers? 3. Do the cases of heatstroke which you have observed manifest themselves by the same symptoms as sunstroke? 4. Do cases of direct insolation usually take the hyperpyretic form?

Sandow, the strong man, whose face and muscles have been made familiar to us by advertisements of tonics, strengtheners, and "blood medicines," has opened a school of physical culture in an English provincial town, and advertises to cure dyspepsia and indigestion, while guaranteeing an increase of three inches in the chest measure and a corresponding reduction in the size of the waist.

An English Quack, who has offered a large stock of his alleged specifics to the army medical department, is accused by the music-hall jokers of being a Spanish agent sworn to compass the death of our troopers.

Wholesale Ice-Cream Poisoning.—Forty persons, most of them children, died two weeks ago in Antwerp after eating ice cream at a street stand. The symptoms were those of an irritant poison rather than of ptomain poisoning, and an investigation is to be made.

Twelfth French Surgical Congress.—The twelfth annual meeting of the Association Française de Chirurgie will be held in Paris, in the hall of the Faculté de Médecine, on October 17–22, 1898, under the presidency of Professor LeDentu. Two subjects are announced for set discussion, namely, "Nephrotomy," to be opened by Drs. Guyon and Albarran, and the "Treatment of Goitre," to be opened by Dr. Reverdin, of Geneva. The secretary-general of the congress, to whom all inquiries should be addressed, is Dr. Lucien Picqué, rue de l'Isly, 8, Paris.

Medical Practice in Canada.—A movement is on foot across the border, looking to uniformity in medical laws, so that a license to practise medicine in one province of the dominion will confer the same right in all the others. At present the same annoying restrictions exist there as in this country, with the result that a man who has practised long enough in one place to forget the book knowledge of his student days is practically debarred from going to another province because of the necessity he will then be under to submit to another examination.

The Tuberculosis Committee. — The tuberculosis committee of the State board of health has great difficulty in securing sufficient funds with which to carry on its investigations and to free the State of tuberculous cattle. In 1896 the committee had $20,000; in 1897, nothing, as the governor vetoed the $15,000 allotted in the supply bill, on the ground that it was "inadvisable." In 1898 the committee asked for $50,000, but the finance committees in the legislature cut the item to $10,000, which the governor signed. The secretary of the board says that this amount is barely enough to pay the expenses of the committee and to carry on the education of the farmers in the way of improving the condition and health of their stock by cleanliness, proper care, etc.; also that it would require fully $1,000,000 to clear the State of tuberculous cattle now within its borders.—*Albany Medical Annals.*

In Germany a medical officer is now attached to the primary schools. His duties are much the same as those of our New York school inspectors, but, in addition, every fifth day he is expected to give medical or hygienic instruction.

Lunacy Commission of Maryland.—Dr. George J. Preston, of Baltimore, has been elected secretary to the State lunacy commission, to fill the vacancy created by the death of Dr. William T. Lee. For the past ten years Dr. Preston has been professor of nervous diseases at the College of Physicians and Surgeons.

The Fellows Prize of the New Jersey Medical Society was this year awarded to Dr. Frederick Randolph Bailey, of Elizabeth, for an essay on "The New Histology and Pathology of the Central Nervous System."

The New York Post-Graduate Hospital. — The special committee of the State board of charities, appointed to investigate charges against the New York Post-Graduate Medical School and Hospital, has made a report in favor of the hospital. The charges that money given for the endowment of beds had been misapplied, and that the city of New York had paid for children who had never been in the institution, were not sustained.

The Health of New York.—The report of Dr. Roger S. Tracy, registrar of records, to the board of health, shows a very satisfactory sanitary condition for the first six months of this year. A comparison of the deaths in the boroughs of Manhattan and the Bronx with the deaths for the corresponding period of 1897 gives the following results: The total deaths in 1898 were 19,113 against 19,509 in 1897, showing a decrease of 396 deaths and a death rate of 19.66 in 1898 on an estimated population of 2,048,830, against 19.60 in 1897 on an estimated population of 1,990,562, and being lower than the number of deaths in the corresponding months of any previous year since 1886. The deaths of children under five years of age, perhaps the best test of sanitary conditions, numbered 7,041 in 1896, as compared with 7,238 in 1897, a decrease of 197, notwithstanding the increase of population. The deaths and death rates from the principal contagious and infectious diseases for a period of ten years are given in the following tables:

	Deaths.									
	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898
Diphtheria and croup	1,542	1,014	965	1,131	1,281	1,771	1,146	1,056	980	548
Measles	395	451	480	621	197	495	480	580	204	358
Scarlet fever	1,126	251	749	785	430	380	369	277	300	407
Small-pox	1	2	3	36	48	116	8	1	21	
Typhoid fever	117	96	96	122	136	93	91	83	86	72
Typhus fever	....	....	....	40	193					
Total	3,181	1,814	2,293	2,735	2,285	2,864	2,094	1,997	1,591	1,385

	Death Rates per 1,000.									
	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898
Diphtheria and croup	1.07	1.26	1.16	1.35	1.46	1.96	1.22	1.09	0.98	0.53
Measles	0.50	0.56	0.58	0.7	0.22	0.55	0.51	0.60	0.21	0.35
Scarlet fever	1.44	0.31	0.90	0.92	0.49	0.43	0.39	0.29	0.30	0.40
Small-pox	0.001	0.002	0.002	0.04	0.05	0.13	0.009	0.001	0.02	
Typhoid fever	0.15	0.13	0.13	0.14	0.16	0.10	0.10	0.09	0.09	0.07
Typhus fever	....	....	....	4.03	0.22					
Total	4.06	2.26	2.76	3.23	2.60	3.17	2.23	2.07	1.60	1.35

It will be noticed that the decrease in deaths from diphtheria and croup alone in 1898, as compared with 1897, amounts to 432, nearly 45 per cent., the total number of deaths from these diseases being the lowest, not only relatively but absolutely, since 1872, twenty-six years ago, a decrease which cannot be attributed, Dr. Tracy says, to the waning of a cycle of morbidity, but can be accounted for only by the improvement in the methods of sanitary control, of which the chief are the use of antitoxin and the medical inspection of schools.

Asepsis in Military Surgery.—A medical report sent to Surgeon-General Van Reypen of the navy says that among the wounded sailors and marines about Santiago de Cuba, although in some cases there was considerable laceration, there has been no instance of elevation of temperature of more than a degree above the normal and none of the wounds has suppurated. In similar strain was the report of Dr. Harvey, who returned from Santiago de Cuba on the *Cherokee*. He reported that, although the number of wounded soldiers was large, the character of the wounds was as a rule not serious. The medical corps had met with most gratifying success in treating the wounded, and perfect asepsis had been secured in nearly every case. Few amputations were necessary.

Another Sneak Thief Victimizing New York Doctors.—A woman of slight build and medium height, dressed in mourning, calls to see the doctor, who treated her husband and little girl two and one-half years ago. She is a glib talker and tells the servant that husband and girl are both dead. She states that the doctor wouldn't know her now, for she was then quite stout; she lives out of town at present, and is quite timid about coming to the city alone. She has a sore throat and coughs continually, and asks the girl kindly to bring her a glass of ice water. When the maid returns the would-be patient is gone. The doctor, when he returns, misses a sheet of postage stamps from his desk drawer, an umbrella from the hatrack in the hall, etc.

A New Tuberculin.—Drs. F. Raymond and P. Ravant, in a report to the Society of Biology of Paris on May 28th, stated that bacilli of the tuberculosis of fish, discovered by Dubard, had been cultivated by them in bouillon containing glucose and glycerin, and that on filtering these cultures through porcelain they obtained a toxin which by its smell and its biological reactions exactly resembled the tuberculin derived from the bacillus of tuberculosis occurring in the human subject. With this new toxin they made experiments in two series as follows: First, a tuberculous guinea-pig was inoculated with the toxin, the result being the production of pyrexial reaction with shivering and prostration lasting for six hours, although neither the control guinea-pig nor even the tuberculous guinea-pig which had received control injections of glycerinated bouillon showed any pyrexial reaction. Secondly, two guinea-pigs which had been inoculated on different dates with the bacillus of fish tuberculosis, and which exhibited some emaciation, were injected with half a cubic centimetre of ordinary tuberculin. They both showed a well-marked pyrexial reaction, amounting in the first to 2° C., and in the second to 1.5° C.

In England the journals continue to report deaths under chloroform, and the suggestion is made by the *Medical Press* that in the case of children the written consent of parents be obtained before anæsthesia. The same journal very pertinently asks: "If these deaths are preventable [as recently claimed by the Medical Record, when proper methods of administration are employed] why are they not prevented?"

Society Reports.

THE MEDICAL SOCIETY OF NEW JERSEY.

One Hundred and Thirty-Second Annual Meeting.

Held in the Auditorium, Asbury Park, N. J., June 28, 29, and 30, 1898.

DAVID C. ENGLISH, M.D., OF NEW BRUNSWICK, PRESIDENT.

First Day—Tuesday, June 28th.

Epileptic Colony in New Jersey.—DR. T. J. SMITH, speaking in behalf of the committee on the president's address of last year, said that the committee had carried out all its instructions, and had succeeded in having the legislature pass the bill drawn up by it, and appropriate $15,000 for the establishment of an epileptic colony in New Jersey.

Bovine Tuberculosis.— DR. J. W. STICKLER, of Orange, chairman of the committee having this matter in charge, stated that as a result of a conference with the tuberculosis commission and a study of the work that it was doing, the committee felt that it could best further the cause by recommending co-operation with this commission. The society indorsed this recommendation.

Honorary Membership.—DR. SAMUEL HAYES PENNINGTON, on this the fiftieth anniversary of his presidency of the society, was elected an honorary member, and a telegram of congratulation was sent to him.

Annual Address of the President: Patriotism in the Medical Profession.— DR. DAVID C. ENGLISH, of New Brunswick, delivered the address. He said that the Medical Society of New Jersey was the oldest medical society in the country, and that it was founded with the threefold object in view, of "mutual improvement, advancement of the profession, and the promotion of the public good." Dr. Nathan Scudder, of Freehold, who was one of the founders of the society, was also one of the patriot leaders in the effort to throw off the tyranny of Great Britain. Many of the former presidents had taken an active and notable part in the war of the revolution. So far as could be ascertained, only five of the members, three of them clergymen, espoused the British cause. Some idea of the extent to which the society was personally interested in this strife might be gained from the statement in the minutes for 1782 that, as most of the members of the society were actively engaged in the war, no regular annual meetings were held for the years 1775–81. Of the fifty-six signers of the Declaration of Independence, five were members of the medical profession. They were honest legislators, and were not of those who "sold their birthright for a mess of pottage." Yet it should not be inferred that the physicians of New Jersey were to-day lacking in patriotism, or shrank when their country called; still fresh in mind was the death of Dr. John Blair Gibbs, formerly of New Brunswick, a descendant of celebrated patriots, who was the first of the profession to fall in the present war with Spain. The New Jersey patriots of old were made of that kind of stuff so well represented by the farmer boy who, in reply to the query, "Who's looking after the farm?" said, "Father's fighting, I'm digging, and mother's praying." The speaker then considered the patriotism manifested by the profession in time of peace. Here, he said, it found its noblest exemplification; it should not be forgotten that there was a good deal of heroism in every-day medical practice. Nearly all the work of the Medical Society of New Jersey had been for the public good, often against the pecuniary advantage of its members. Thus after twenty-seven years it had succeeded in securing a State board of health; after another long struggle, State hospitals for the insane had been established; efforts, more or less successful, had been made to control the spread of bovine tuberculosis and purulent conjunctivitis in the newborn, and the preliminary steps had been taken toward the formation of an epileptic colony in New Jersey. Surely these were incontestable proofs that the society had been true to the aim of its founders, to labor for the public weal. But the mortuary statistics in connection with the preventable diseases added still more reassuring testimony on this point. In 1888 there was one death from the preventable diseases in every 128 of the population, whereas in 1897 there was only one death to 186.82 of the population. This meant that 4,329 lives were saved in 1897 that would have been sacrificed if the former rate had still obtained. According to a very conservative estimate, this would represent a saving in money during that year of $3,386,620. Dr. English then went on to speak of the part played by physicians in the political life of the country. He deplored their lack of interest in such matters in the past half-century, for, he said, if there had been more physicians in our legislative halls there would be less extreme partisanship and cleaner politics. But it should ever be borne in mind that, as the strength of the republic was to be found in the internal workings of its homes, there was ever a great and glorious field in which the family physician might display the truest patriotism.

Progress in State Medicine and Hygiene. — DR. HENRY MITCHELL, of Asbury Park, presented the report on this subject. He said that 600,000 persons now reached the age of twenty-one years who, sixty years ago, died. The total number of deaths from the chief preventable diseases in New Jersey in the past ten years was 143,472, or a yearly average of 14,347. There was a saving last year of 920 lives. Regarding the disposal of sewage, he said that there was reason to believe that the biological treatment of sewage would be found superior to any other method. Modern investigation seemed to show that sewer-gas was incapable of spreading typhoid fever. Sewer-gas poisoning could, however, lower the resisting power of the human system, and so make it an easy prey to the specific germ of typhoid fever. It was now claimed that the pathogenic germ of acute articular rheumatism had been discovered, and that its inoculation into animals had given rise to endocarditis. Much attention, of late, had been given to the hygiene of the barber shop. The following rules should be observed: (1) The barber's hands should be carefully cleansed; (2) the soap paste should be applied with the hands to the face; (3) only sterilized razors should be employed, and they should be taken directly from a sterilizing-oven; (4) the use of sponges, puffs, pads, and magnesia cakes should be avoided; (5) metal combs should be used. Rutgers College, the speaker said, had taken a most important step in advance of other institutions, in that it now issued certificates of capability to deserving sanitary inspectors.

Progress in Medicine and Therapeutics.— DR. WILLIAM H. ISZARD, of Camden, read the report. He said that twenty-five years ago the specialist was rarely seen, and was looked upon as a quack; now almost every ill was supposed to require the attention of a "specialist," thus leaving very little for the general practitioner. This was specialism run riot. Formerly diphtheria was treated successfully with nitrate of silver; now much valuable time was wasted in waiting for a bacteriological diagnosis or in securing some special brand of antitoxin. The great evil of the present day, in the therapeutic world, was too much experimentation with too many new remedies.

Progress in Surgery.—DR. CHARLES YOUNG, of Newark, read the report.

Appendicitis.—Regarding appendicitis, he quoted the statistics of Dr. G. E. Armstrong, presented at the Montreal meeting of the British Medical Association in 1897. In 517 cases treated in three general hospitals in Montreal since 1889, the mortality was 12.8 per cent. Of this number, 389 were operated upon. Of the 128 non-operative cases, 4 were fatal, or a mortality of 3.12 per cent., from septic peritonitis. Of the 389 operative cases, 84 were "interval" cases, and had no mortality; while of the 305 operated on in the acute stage, 63 were fatal, thus giving a mortality of 20.65 per cent. His working rule, he said, was to operate in all well-marked cases at once, including all cases in which there were pain, tenderness, muscular rigidity with vomiting, elevation of temperature, acceleration of pulse, and anxious facial expression. The operation was usually done after thirty-six or forty-eight hours, unless it was evident that the patient was distinctly improving.

Lateral Curvature of the Spine.— Reference was made to Mr. Roth's report of 1,000 cases of lateral curvature treated by him by posture and exercises, with the result that 869 patients were much improved, and 75 improved. The result was confirmed in 207 of the cases by examination made three years afterward.

Nerve Suture.—A case was reported of paralysis of the musculo-spiral nerve, in which the function had been restored by the successful suture of the musculospiral to the median nerve.

Tetanus Antitoxin.—Mention was made of 3 reported cases of severe tetanus successfully treated with tetanus antitoxin. Out of a total of 36 recorded cases, only 3 ended fatally.

Contagion of Syphilis.—Regarding the contagion of syphilis, it was stated that the duration was difficult to determine, but it was usually longer than was commonly believed. As long as there were any papular exudative manifestations contagion certainly existed.

Splenectomy for Injury.—In 160 recorded cases of splenectomy for various reasons, the mortality was 86 per cent. In 28 cases the spleen was ruptured and prolapsed into the wound, and here the operation was successful. There were only 6 cases in which the operation was done for rupture without external wound, and 5 of these were fatal.

Backward Dislocation of the Thumb.—Mr. Jonathan Hutchinson was quoted as saying that in backward dislocation of the first thumb phalanx a careful trial should be given to the manipulative method described by Farabuff and others. If this failed, a tenotome should be inserted behind the projecting phalanx, no palmar incision being made. The obstacle to reduction was usually found in the glenoid fibro-cartilage and in the sesamoid bone on each side.

Bone Implantation after Trephining.—A case was cited in which trephining had been done on an epileptic in 1896. The seizures ceased for a few months only. Subsequently it was discovered that two spots about the scar were very tender, and pressure upon them precipitated an epileptic seizure. The wound being reopened, the dura mater was found covered with a mosaic of bone fragments. Those fragments which were causing pressure on the dura were removed, and the patient made a complete recovery.

A Splint for Use after Amputation of the Breast.—The author stated that a London surgeon had recommended the use of a rectangular wire splint, as a dressing, after amputation of the breast. A surgeon in Halifax subsequently modified this by suggesting the use of a pillowcase, in which the arm was confined and suspended from the head of the bed.

Blunt-Dissection Operation for Inspection of the Kidney.—According to the speaker, Mr. Robson had recommended an incision beginning to the inner side of the anterior superior spine of the ilium, and carried backward obliquely to the tip of the last rib. The fibres of the oblique, and its aponeurosis, were then split and retracted, exposing the internal oblique, the muscular fasciculi of which were split between the ninth intercostal cartilage and the posterior superior spine of the ilium. When the fingers were pushed in, the fibres of the transversalis were separated. The transversalis fascia was next exposed, and after that the peritoneal fat. At the time of proposing this operation, he was not aware that it had been done previously by Dr. Robert Abbe, of New York. The advantages claimed were: no weakening of the abdominal wall, no division of nerves, no hemorrhage, rapidity of operating, diminution of shock and of the period of convalescence.

Progress in Diseases of the Nose and Throat.—Dr. F. Fayette Smith presented this report. He said that a number of recent papers had appeared, detailing remarkable results from operations on laryngeal cancer, both by the external and internal methods. With the exception of intubation, they showed the greatest advance made in recent years in laryngeal surgery.

Adenoids and Deaf-Mutism.—One observer had reported that he found adenoids in fifty-nine per cent. of the deaf-mutes examined by him, and concluded that such a remarkable percentage indicated some definite relation between the two conditions. The speaker thought it probable that, if due attention was paid to the existence of adenoids in early infancy, the number of deaf-mutes might in time be very materially reduced.

Diphtheria Antitoxin and Ozæna.—According to the reports of Dr. Van der Poel, of New York, and Dr. Moore, of London, the fetor very quickly disappeared after injections of antitoxin. The treatment was said to be inconvenient and not without risk, but the results were considered to be so positive and valuable as to warrant further trial of the method.

Conservatism in Nasal Surgery.—It was pleasing to note the reaction that had recently taken place in favor of greater conservatism in the surgery of the nose. One of many indications of this was to be found in Dr. Delavan's recommendation of submucous operations, with the idea of saving the mucous membrane.

Second Day—Wednesday, June 29th.

Progress in Bacteriology.—Dr. B. Meade Bolton, of Princeton, presented this report.

Diphtheria.—The author stated that all recent articles tended to add to the vast amount of testimony already accumulated, regarding the efficacy of the antitoxin treatment of diphtheria. The statistics for all German cities having a population of over fifteen thousand showed very strikingly the diminution in the ravages in this disease since the introduction of the antitoxin treatment. Just prior to its adoption, the mortality had been nearly fifty per cent.; since then, in a nearly equal number of cases, the mortality had been reduced to sixteen per cent.—a reduction of thirty-four per cent. The tendency now was to use a stronger antitoxic serum, obtained either by evaporation or by using a more potent antitoxin.

Tuberculosis.—In collecting specimens of tuberculous sputum for laboratory examination, it was recommended that the patient should gargle the throat in the morning before saving the sputum. The danger of disseminating the disease lay, not in the sputum becoming dried and being taken up into the air, but in the particles which were moist and were coughed into the air. This had been shown by making animals inhale dust impregnated with dried tubercle bacilli and comparing the results with those obtained by making animals inhale air into which the sputum had been sprayed. In the first series of experiments the animals

contracted the disease with great difficulty; in the second the animals, almost without exception, developed tuberculosis. Rabinovitch had shown that an organism very closely resembling the tubercle bacillus of man in its staining properties was very frequently present in butter. Again, Theobald Smith, a recognized authority in his particular field, had recently shown that bovine tubercle bacilli were not identical with the tubercle bacilli of man. Rabinovitch, working in Koch's laboratory, did not find any genuine tubercle bacilli in eighty samples of butter.

Antituberculous Serum.—It was stated that it was impossible to obtain this serum from horses, as these animals invariably died from even small doses of the tubercle bacilli. The clinical results from the use of this serum were, moreover, not encouraging. The speaker said that his own experiments on animals in this direction showed decidedly that their death was hastened by the treatment. The animals died sooner than those inoculated with cultures of tubercle bacilli or tuberculous sputum.

Immunity.—Koch had pointed out the complexity of the subject of immunity in certain diseases. In tetanus, he had said, immunity might be produced by gradually increasing quantities of a liquid tetanus-bacillus culture. The tetanus bacilli grew abundantly in the animal, curiously enough, although the animal did not contract the disease at all. The animal was, therefore, rendered immune only to the products of the bacilli. On the other hand, in cholera and in typhoid fever it had been shown that by using solid cultures —the bodies of the bacilli—animals might be made to resist the growth of the bacteria. But if the bacilli were made to grow outside of the body, it would be found that when their products were injected into these animals the latter quickly developed the disease, exhibiting no evidence of protection from the products of the bacilli. Koch's idea, therefore, of immunity was that the body must be protected, not alone from the injurious products of bacterial activity, but against the growth of the organisms themselves.

Typhoid Fever.—Regarding this disease, Dr. Bolton said that, on the whole, Widal's test had proved useful and reliable, but it must always be conducted with great care in order to secure trustworthy results. As Pfeiffer was the first one to call attention to this reaction, it seemed but just that his name, instead of Widal's, should be associated with it.

Antistreptococcus Serum.—The experience of the past year with this serum had not been encouraging, and it was probable that it would be gradually abandoned.

Rinderpest.—Koch's investigations on this subject were very interesting and important. He found that by inoculating healthy cattle with ten cubic centimetres of bile obtained from an animal dead of rinderpest, an immunity lasting from forty to sixty days was produced. The finding of an infective agent in the bile was a new observation, and might lead to important results. The same observation had been made regarding the venom of snakes. The bile of the cobra had no potency in combating the poison of other snakes, showing the specific nature of the venom. The same was true of other snakes.

Tetanus Antitoxin.—One veterinary surgeon had reported one hundred and fifteen cases of tetanus in horses, with ten per cent. of recoveries before the use of tetanus antitoxin; since its adoption, sixty-five per cent. had recovered. In one locality in Paris it had become the practice among the veterinarians to administer a prophylactic dose of tetanus antitoxin, and since this had been the rule, tetanus, which was formerly very common, had become almost unknown after operations on animals.

Leprosy.—Opinion seemed still to be divided regarding the efficacy of serum therapy in leprosy.

Bubonic Plague.—In this disease the antitoxic treatment had shown itself to be of great value.

The Umbilical Cord.—Dr. William Pierson, of Orange, contributed an essay with this title, which, in his absence, was read by Dr. Skinner. The author stated that there were still many excellent authorities who claimed that the non-ligation treatment of the umbilical cord had many advantages. The cord was torn through roughly, and after a few drops the blood ceased to escape. On the other hand, there did not seem to be any great objection to ligating the cord, and it avoided many needless alarms. Hippocrates advised against tying the cord until the infant had cried or sneezed, and it was the common rule at the present time not to tie it until the child had cried. According to some observers, the infant received about three ounces more blood if ligation was deferred until the pulsation of the funis had ceased. His personal preference was for a narrow linen bobbin, thoroughly sterilized, for the ligature. The silk ligature was apt to injure the vessels unless great care was used in its application. Catgut was absorbed too rapidly. Many obstetricians of the present day advised leaving a stump about two inches long, on the following grounds: (1) It avoided the possibility of tying a loop of intestine descended into a pouch of the funis; and (2) it left room for the application of a second ligature should hemorrhage occur. The advantages of the short stump were (1) less dead tissue and less fetor, and (2) the greater protection afforded the stump from manipulation and from the movements of the child. His personal preference was for a short stump. The natural process was for the stump to desiccate and wither. Free exposure to the air favored desiccation, as did also the application of some powder, such as boric acid. The application of a pad over this dressing was considered inadvisable, because it helped to exclude the air. Dr. Pierson was in favor of leaving a stump only half an inch long, and stripping it of some of the gelatin of Wharton, as recommended by Goodell, before the application of the ligature.

The Belly Band.—As to the almost universal custom of applying a belly band, he stated that the supposed advantages of the band were (1) warmth, (2) retention of the dressing of the cord, (3) prevention of umbilical hernia. Warmth could be better secured by a loose knitted shirt. Competent observers had asserted that there was a strong developmental tendency to close the umbilical opening, and that consequently very little artificial encouragement was required. Moreover, it would seem that the application of a tight belly band would tend to compress the contents of the abdomen and so actually favor the production of umbilical hernia. In addition to this, the embarrassment of the movements of the abdominal muscles aided in weakening the abdominal wall.

Peculiarities of the Cord.—He had met with one case in which the cord was over five feet in length, and recently one in which the cord was one and one-half inches in diameter. Before ligation of this enormously thick funis, it was necessary to reduce its diameter by stripping the cord and removing the excess of Wharton's jelly. There was still much obscurity concerning the etiology of knots and twists in the umbilical cord. Coiling of the cord around the neck occurred in about twenty per cent. of cases. The largest number that he had seen in any one case was five. When the coiling seriously interfered with delivery, the cord should be cut between two ligatures, and the child rapidly delivered.

Prolapse.—When prolapse occurred without rupture of the membranes, a safe delivery could often be effected by carefully avoiding all interference, thus

preserving intact as long as possible the membranes. When the membranes ruptured early and the cord prolapsed, the well-known postural treatment should be adopted, and an effort made to retain the cord in position by changing the position of the fœtus or by encouraging the speedy descent of the fœtus.

Report of a Case of Foreign Body in the Œsophagus; Retropharyngeal Œsophagotomy.—Dr. John C. McCoy, of Paterson, presented this report, together with a skiagraph showing the location of the foreign body—a whistle. An incision had been made, at the operation, from the lower border of the cricoid cartilage to the upper margin of the sternum, the sternomastoid being retracted outward and the trachea inward. The œsophagus having been exposed, it was found that the tissues of the latter were much swollen, and at the point where the whistle was lodged they were so eroded that it was evident that further efforts to dislodge the foreign body would have proved dangerous. There was no shock or vomiting after the operation. At first small quantities of sterilized water were administered by the mouth, and subsequently a little sterilized milk was given. A fistulous opening formed, but closed in seven days. The usual rule was to withhold all nourishment by the mouth for twenty-four or forty-eight hours after operation, but he preferred giving small quantities of sterilized water in order to keep the œsophagus clean. His conclusions were as follows: (1) A foreign body impacted in the œsophagus for over twelve hours, particularly if it was known to have sharp edges, demanded immediate removal through an external incision. (2) The prolonged and continued use of œsophageal instruments should be condemned, as the tissues were usually lacerated by them and their vitality was lowered. (3) If the condition of the tissues would admit of it, the wound in the œsophagus should be closed by sutures at the time of the operation.

Report of a Case of Foreign Body in a Bronchus; Tracheotomy.—Dr. Walter B. Johnson, of Paterson, reported this case, which occurred in a girl of a little over three years. The operation was not done as soon as desired, because the parents withheld their consent. Finally, a large incision was made in the trachea, with the idea of stitching the trachea to the skin and leaving an ample opening in case the foreign body could not be found at the time of operation. By a coughing-effort, the foreign body, a large kidney bean, was brought within reach, and was removed with forceps.

Dr. E. J. Ill, of Newark, objected to closing the tracheal wound with sutures, as this sometimes gave rise to dangerous emphysema.

Dr. W. B. Johnson said that the trachea had been completely closed by sutures in Dr. McCoy's case, as well as in his own, and both patients made a good recovery without any untoward symptoms that could be attributed to this procedure.

Dr. Cantwell said that, in an experience comprising about fifty tracheotomies, mostly for membranous croup, he had never sutured the wounds in either the trachea or the skin; he had never observed any emphysema, and the subsequent scar had not been very large.

Dr. Judson Daland, of Philadelphia, thought it would be better to give the œsophagus entire rest for at least twenty-four hours, more especially as the sterilized water given by the mouth must quickly become contaminated with the numerous micro-organisms inhabiting the buccal cavity. He recalled two interesting cases of foreign body in the air passages, and dwelt upon the serious consequences that had been averted in the cases just reported by a prompt resort to operation.

Dr. McCoy replied that it was impossible to give the œsophagus absolute rest, as it must be disturbed from time to time by the swallowing of saliva.

Discussion on Milk as a Culture Medium, and its Capacity for Spreading Infectious Diseases.—Dr. John L. Leal, of Paterson, opened the discussion by a consideration of the special subject of "Milk as a Carrier of Infection." He said that the diseases transmitted by milk were typhoid fever, cholera, tuberculosis, and scarlet fever. After dwelling upon the more common sources of contamination of milk in the dairy and in its transportation, he cited interesting examples of the methods pursued by health authorities in tracing to their source diseases arising from milk contamination.

Dr. Richard C. Newton, of Montclair, continued the discussion. He said that he had insisted last year that the milk of the goat and of the ass might be used with great advantage under certain circumstances. It was now found that skimmed milk could be fed to various animals with good results. For feeding to milch cows, it was recommended to heat the milk to 150° F., mix it with chaff, and allow it to ferment for forty-eight hours. During the past year Koplik had asserted that he had observed a number of cases of milk poisoning following the use of pasteurized milk. It had been recently claimed that the so-called "feed boils" observed on the udders of milch cows when they were first turned out to pasture after having been stall fed through the winter were sources of disease. This had only just been brought to the attention of the health authorities, and no positive statements were yet forthcoming. It had also been claimed that tuberculosis in cows was largely due to overmilking, and it had been recommended that the cows be allowed to go dry for the last three months of gestation. Dr. E. F. Brush believed that the chief, if not the only, source of tuberculosis in the human subject was to be found in tuberculosis in cattle.

Bologna-Sausage Horror.— Dr. Newton spoke of an exceedingly repulsive and dangerous practice that was common even in dairies claiming some degree of respectability, viz., the selling of the bodies of animals dying on the dairy farms to bologna-sausage manufacturers. In his opinion, the testing of all cattle with Koch's tuberculin should be compulsory, and the practice just referred to should be punishable as a misdemeanor.

Dr. J. W. Stickler, of Orange, said that the composition of milk made it a nutritive medium for every germ the biology of which was understood at the present day. According to an investigation conducted in the city of Boston, when healthy cows in a clean dairy were milked into sterilized flasks five hundred and thirty bacteria only were found in a cubic centimetre; but when the milking was done in the usual way and it was received in the common flaring milkpail, there were on an average 30,500 bacteria to every cubic centimetre immediately after the milking. The germs of diphtheria, cholera, and scarlet fever developed at the ordinary room temperature, and did not, as they multiplied, alter the general appearance of the milk. The only exception, perhaps, was that, according to Klein, the germs of cow scarlet fever caused a coagulation of the milk at 35° C. It was important to remember that not only did all known germs develop in milk, but that they were capable of living in it.

Dr. Baldwin spoke of the propriety of having all milk sterilized before being taken into the system.

Dr. Chambers spoke of the good that had been accomplished by the use of "certified milk."

Dr. Hedges gave an instance of the way in which disease might be disseminated through the milk supply by those who had no thought for others and no regard for law or decency.

Method of Administering and Use of Enteroclysms.—Dr. Judson Daland, of Philadelphia, read

an essay on this subject. He preferred to use a rectal tube having rather thick walls, a very smooth surface, and a rounded and slightly tapering tip. It should be two feet long and three-eighths of an inch in diameter, and have a terminal opening. A dark line should be marked on the tube at a distance of eight inches from the tip, to serve as a guide in its introduction. The obstacles met with might be hemorrhoids, tumors of other kinds, a retroverted uterus, displaced ovaries, or ovarian tumors. The knee-chest position would often cause obstructions to fall forward, and thus admit of the easy passage of the tube. The reservoir—a fountain syringe or a funnel—was usually placed at a height of four or five feet. Ordinarily a child received one pint, an adolescent two pints, and an adult three or four pints. As a rule, ten minutes should be occupied in administering the enteroclysms, and the fluid should be retained for a like period. When the patient experienced colicky pain, it was usually due to the presence of gas, to too rapid introduction of the liquid, or to introducing too large a quantity. Sometimes relief and comfort would be afforded by tightly bandaging the abdomen before giving the enteroclysms. These injections could be given at intervals of four hours, or they could be administered daily or on alternate days, according to the object desired to be accomplished. That the liquid frequently passed the ileo-cæcal valve was clearly shown by experiments which he had performed on the bodies of seven children. In four there was no difficulty in causing the fluid to pass through into the small intestine, and even out through the mouth and nose. In two cases the valve prevented irrigation of the small intestine, and in one case the fluid did not pass the ileo-cæcal valve. In several cases of cholera in which frequent enteroclysms of tannic acid were administered, this same solution was vomited.

Dr. Daland mentioned the following conditions as indicative of the chief uses of this therapeutic procedure: (1) In long-standing and obstinate constipation; (2) in auto-intoxications resulting from decomposition of the intestinal contents; (3) in many forms of irregular gout associated with scanty and highly acid urine; (4) in chlorosis, because of the commonly associated fæcal anæmia; (5) in progressive pernicious anæmia without obvious cause; (6) in diabetic coma and uræmic conditions; (7) in cholera, as an important life-saving measure; (8) in typhoid fever, more particularly in the early stages, as a cleansing agent, an antipyretic, and a diuretic; (9) in pseudo-membranous colitis, even of long standing; and (10) in cases of sunstroke.

Dr. R. C. Newton said that this method of treatment should also prove beneficial in cholera infantum and in cases of milk poisoning. The addition of antiseptics, such as chlorine water, seemed to him to open a very wide and important field.

Dr. Hedges, of Plainfield, alluded to the great value of very cold enteroclysms in the treatment of the acute intestinal indigestion of children, particularly when associated with high fever.

Dr. Benjamin, of Camden, spoke of the important aid rendered by ice-cold enemata in controlling intestinal hemorrhage in cases of typhoid fever.

Dr. P. C. Barker, of Morristown, called attention to the benefit to be derived from the use of enteroclysms, alternately of cold and hot water, in the treatment of a common but obstinate disorder—*i.e.*, catarrhal jaundice. He had also used various antiseptics with the enteroclysms—*e.g.*, a 1 to 5,000 solution of bichloride of mercury in dysentery—but, after all, the washing out of the large bowel was the point of greater importance. In his opinion, it would be necessary, in some very large persons, to use a rectal tube nearly four feet in length.

Dr. Daland replied that, owing to the comparatively large quantity of the fluid retained and absorbed, he had been chary in the use of antiseptics. The treatment *par excellence* for Asiatic cholera consisted in the systematic use of enteroclysms of a three-per-cent. solution of tannic acid, as experiments had fully demonstrated that the cholera bacilli could not develop in an acid medium. Enteroclysms were also useful in cholera infantum and cholera morbus. He knew of no better intestinal antiseptic than a sufficient quantity of healthy bile. In cases of catarrhal jaundice little or no bile entered the intestinal tract, and as a result the contents of the bowel putrefied and the resulting toxic products were ordinarily carried back to the liver; hence there was good reason for using enteroclysms in this disorder. He saw no objection to using a longer rectal tube, but ordinarily when it had been inserted eight inches it was beyond the sigmoid flexure, and there seemed no good reason for inserting it farther than sixteen inches, as the tip should then be near the splenic flexure of the colon.

School Hygiene with Reference to the Production of Ocular Disease.—Dr. Walter B. Johnson, of Paterson, read this paper. He said that the percentage of myopics was constantly increasing. The light should be direct, not reflected from adjacent buildings, and all light should enter from the left and behind. It had been advised that the blackboards be tinted green. It was also important that a proper system of ventilation, no matter how costly, should be maintained.

Dr. W. B. Atkinson, of Philadelphia, emphasized the importance of the subject; and Dr. Newton suggested that the best way to begin a reform of this kind was to educate the teachers in matters pertaining to the proper lighting and ventilation of schools.

Chronic Cardiac Disease and its Management.—Dr. Louis Faugères Bishop, of New York, presented a communication with this title, calling attention to the fact that the care of cardiac disease was the care of invalids in general. Many of these patients would have lesions of both the aortic and mitral orifices, but the symptoms of one or the other type would usually be specially prominent. The hypertrophied heart muscle was like an overtrained athlete, and it was because of its tendency to undergo degeneration that marked benefit so often resulted from the judicious use of hydrotherapy and active exercise. Chronic constipation was the arch enemy of persons afflicted with heart disease, and called for constant medical supervision. A good way of overcoming it was to instruct the patient to take a single large dose of the fluid extract of cascara sagrada every night for a month, gradually diminishing the dose so as to secure a daily natural evacuation. At the end of the month an effort should be made systematically to reduce the dose until only a few drops were taken at a time. This very small dose was continued for a while longer for its moral effect. Calomel was undoubtedly valuable in relieving the general congestion, but it never produced the magical results so often claimed for it. The necessary amount of nourishment should be taken in very moderate quantities. It was important to instruct such a patient that death was not likely to come suddenly, and that any disturbance of digestion, loss of color, or evidence of failing nutrition or disordered breathing should be looked upon as an imperative demand for an immediate revision of the whole mode of life.

Dr. John C. Johnson, of Blairstown, said that an occasional small dose of calomel would often very quickly relieve the respiration. Constipation and dilatation of the stomach and colon could be satisfactorily managed by a morning draught of Epsom salts containing two drops of tincture of nux vomica, or by

giving at night a tablet containing rhubard, aloes, and gentian.

Dr. A. W. Rogers, of Paterson, said that he had been disappointed in the action of cascara; the combination of aloin, belladonna, and strychnine was more effective.

Dr. Newton remarked that in obstinate cases of flatulent dyspepsia, when other drugs had failed to give relief, he had found asafœtida very useful.

Uterine Displacements.—Dr. H. B. Costill, of Trenton, presented this paper. He said that the uterus was maintained in its position in the pelvis very largely by intra-abdominal pressure, that anteflexion was very much less common than had been taught, and the symptoms usually ascribed to it were largely the result of uterine stenosis. Thorough dilatation, curettage, and drainage would cure nearly every case of anteflexion. In all cases of retrodisplacement, if the perineum was torn, it must be repaired. The uterus should be restored as nearly as possible to the normal position, and should be retained by suitably medicated tampons, renewed every three days, until the uterus showed a disposition to remain in place, or until it became evident that an operation was demanded. The operation recommended by Dr. Costill was known as "utero-ventral approximation." In this operation the abdomen was opened by a short incision, as low down as possible to avoid injury to the bladder. Adhesions were broken up, the uterus was brought forward, and two sutures of gut were passed through the abdominal wall and tied on the outside. They should remain for about four weeks. The abdominal wound was closed by independent sutures in the usual manner. In the early stages of prolapse, when there was not much descent, curettage of the uterus and amputation of the cervix, with repair of the perineum, should be sufficient. In more advanced cases a plastic operation alone would not prove adequate, for the uterus was not restored to its normal position. Some form of ventral fixation or suspension must be used. The much-abused pessary was capable of accomplishing much good, although the degree of success was largely dependent upon the personal element. The patient, while wearing a pessary, should not be allowed to pass from under observation for longer than a month at a time.

Dr. E. J. Ill said that the displacements that had proved most troublesome in his experience had been the lateral ones, and that form of retroposition resulting from shortening of the utero-sacral ligaments. The former were especially liable to make a woman an invalid. They might be either congenital or acquired, the latter naturally proving more tractable. The cases of retroposition alluded to occurred most often in unmarried or sterile married women, and could be treated by dilatation of the uterus and stretching of the utero-sacral ligaments under anæsthesia. Following a recent suggestion, he had tried in one case the plan of opening the abdomen, cutting the utero-sacral ligaments, and doing ventral fixation. In this instance the procedure had given an exceedingly satisfactory result.

Dr. Charles P. Noble, of Philadelphia, said that, after a large experience with both ventral fixation and the Alexander operation, he had come to the conclusion that the latter gave distinctly better results. In certain cases of retrodisplacement, the fact should not be lost sight of that the displacement was really a secondary matter, the essential feature being disease of the appendages. In this class of cases he advocated extirpation of the appendages and hysterectomy. He fully indorsed the views of Dr. Costill regarding the treatment of procidentia, but favored Kelly's method of doing ventral suspension. While pessaries had a limited sphere of usefulness, it should be remembered that those who had employed them most extensively and scientifically did not claim more than fifteen or twenty per cent. of cures in the most favorable class of cases—*i. e.*, retroversions occurring after labor.

Regression versus Progression: Viewing the General Practitioner from a Scientific Standpoint.—Dr. J. C. Applegate, of Bridgeton, in an address with the above title, deplored the excessive specialism of the time, which he branded as the source of much discontentment among the laity and the cause of much injury to the general practitioner. He also regretted that the work of the physician and the pharmacist was no longer co-operative, and the present slavish adherence to fixed formulæ, as found in compressed tablets.

Dangers of Certain Faulty Impressions Regarding the Menopause.—Dr. Philander A. Harris, of Paterson, read this paper. He said that two-thirds of all women miss their periods for a longer or shorter time before the complete cessation of the menstrual flow. A gradual shortening in the length of the menstrual period and a diminution in the quantity of the flow were observed in those in whom the cessation of menstruation was abrupt. He was convinced that insanity, and especially melancholia, might result from disturbances incident to the menopause. Both leucorrhœa and hemorrhage were often lightly regarded by the patient and her family physician, and a serious condition, such as malignant disease, was consequently neglected for a long time. Cancer of the uterus was usually characterized at first by leucorrhœa and irregular or excessive menstrual flow. After carcinoma came fibromata and myomata as a cause of irregular or excessive hemorrhage. There was little in the change of life itself to effect pronounced pathological conditions in the uterus or vagina.

Dr. C. P. Noble said that one should not expect any greater disturbance at the menopause than at puberty, and, as a matter of fact, the hot flashes and sweatings, and occasionally mental derangements, constituted the chief disturbances observed at the change of life. It was the duty of the family physician to educate his patients to the belief that the menopause should not be accompanied by irregular discharges, and that their occurrence should be an indication for a searching examination for the purpose of detecting the uterine disease of which they were the manifestations. The danger of delay applied chiefly to cases in which there was cancer of the cervix, for cancer of the body of the uterus progressed very slowly and the prognosis was very good, even after the symptoms had lasted two or three years.

Dr. Balleray, of Paterson, spoke of the large percentage of cases that did not reach the surgeon until the operative stage had passed. This was to be explained, in some instances, by negligence on the part of the general practitioner, but often to his dread of referring cases to the gynæcologist, who unfortunately had a reputation for being too ready to operate on slight provocation. Neither side was wholly blameless.

Early Diagnosis and Treatment of Pott's Disease.—Dr. S. A. Twinch, of Newark, read a paper on this subject, illustrating it freely by projecting on a screen photographs from life.

Dr. J. B. Edwards, of Gloucester County, spoke of his personal experience as a sufferer from this disease, and referred most feelingly to the great and good work done by Dr. L. A. Sayre in advocating the plaster-of-Paris jacket as an efficient support for the diseased spine. He considered it the only appliance for this disease.

Dr. I. W. Condict said that he had found the silicate-of-sodium jacket much lighter and more cleanly

than the plaster of Paris. A jacket of this material could be easily made over a plaster-of-Paris jacket, as a cast.

Third Day—Thursday, June 30th.

Cases of Appendicitis.—Dr. John McCoy reported eleven cases of appendical trouble operated upon during the last ten months. From this number, seven specimens had been selected for presentation. Two of the cases showed an extremely short meso-appendix. One case followed a protracted attack of typhoid fever. Pain was present in all but one case. Nausea was present in nine cases. Tympanites was present in only three, and in each of these there were pus in the abdominal cavity and considerable plastic lymph on the intestine. The temperature varied from 99° to 104° F., the most severe case having the lowest temperature. In this case, although the temperature was only 99° F., the pulse was 130 and extremely weak. The case having the temperature of 104° F. had a pulse of 100, and it was of good quality. In only one instance was there a walling-off of the abscess cavity.

Nephrectomy.—Dr. McCoy also presented a kidney removed four weeks ago from a woman upon whom Dr. H. A. Kelly had recently operated for an interstitial fibroid. His patient made a good recovery, leaving the hospital in two weeks.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

NEW HOSPITAL—SUNDAY FUND—ST. THOMAS' HOME—AN EXPERT AID PROPOSAL—LEUKÆMIA—INFLUENCE OF MINERAL CONSTITUENTS OF VEGETABLES ON GOUT—"PHOSSY JAW."

London, June 24, 1898.

The Prince of Wales laid the foundation stone of the new University College Hospital on Tuesday. The fund for rebuilding this hospital was, as you may remember, presented by Sir J. B. Maple, M.P. The sum of £100,000 was the munificent donation for this purpose.

The Hospital Sunday fund, so far as sent in, exceeds £14,000. This is less than last year at the same period, but perhaps the sums yet to be forwarded may make up an average year.

Complaints have now and again been heard as to the management of St. Thomas' Home. Perhaps some have been unfounded. At any rate, they were not sufficiently authenticated to insure inquiry. Now a case has been stated which calls for strict investigation. Greene Pasha has written to *The Scalpel* an account of the manner in which he was treated when wishing to enter the home. The narrative reflects on the manners of the medical officer who failed to keep his appointment with the eminent pasha as well as on other officials. It would appear as if the medical officer could not have known how distinguished a member of the profession he was neglecting to meet with ordinary courtesy. Greene Pasha complained to the governors of St. Thomas' Hospital, but was informed by the secretary that in the opinion of the committee his complaint was not justified. This looks as if they would like to contradict his statement, but they do not venture to do so. I am of opinion that the treatment he has described is a disgrace to the officers concerned, and I am not alone in that opinion. The career of Dr. H. R. Greene, Pasha, should have secured respect, and the fact that he was a sufferer seeking relief and ready to pay all the charges at the home might have sufficed to elicit sympathy for a sick professional veteran. But perhaps the St. Thomas' officers are as ignorant of medical history as they appear to be of the requirements of ordinary good manners.

According to a prospectus sent by post, "a medical expert aid committee" proposes to enable the middle classes to obtain the aid of consultants at reduced fees. Of course clergymen and other non-medical men are ready to assist in the further reduction of the profits of the profession, but it was hardly to be expected that a medical man would be secretary to any such scheme. Dr. H. Woods must know that those who really cannot pay a consultant's fee when their usual attendant needs or wishes a consultation are always able to obtain expert advice. The friendly way in which this is done has always worked well. The favor of a reduced fee on the one hand, and a note to a consultant at his hospital on the other, have hitherto sufficed to meet all cases. Dr. Woods, who has affected an interest in certain medico-political questions, ought to know that a scheme similar to this has previously been proposed, and met with the condemnation of both consulting and general practitioners.

Drs. Rose Bradford and Batty Shaw gave an account of five cases of acute leukæmia before the Medico-Chirurgical Society—two of them dating from 1890, the other three from last year. All came under observation for anæmia with excessive pallor, weakness, swelling, and ulceration of the mucous membrane of the gums, cheeks, or lips, and fever. Some had purpuric patches and some melæna. All ran a rapid and fatal course, the maximum of illness being eight weeks. The lymphatic glands were enlarged in all cases; the spleen in two cases. The blood showed great excess of white corpuscles, mostly due to the presence of large lymphocytes. In two cases these formed over ninety per cent. of all the white cells present. A few myelocytes were present in two cases.

Dr. H. G. Turney mentioned a similar case, in which the blood showed a proportion of white to red as one to fifteen. Dr. Rolleston thought it difficult to distinguish between acute Hodgkins' disease with a terminal lymphocytosis and some of the cases related.

Dr. Norman Moore had seen two cases following malaria and syphilis, acquired in Africa and terminating within a year, but he had seen no case so rapid as those of Drs. Bradford and Shaw.

Dr. A. P. Luff has been extending his researches on the effects of diet on the gouty process. Last year in the Goulstonian lectures he argued that it is of little consequence as regards the production of uric acid from proteid matter whether the proteid introduced be of animal or of vegetable origin. Though this be so, it is well known that different articles of diet exercise a different influence on the precipitation of sodium biurate and on the solution of uratic deposits. He has shown that the saline constituents of animal and vegetable foods differ in their effects on sodium biurate. It appears probable that the mineral constituents of vegetables, if present in the fluids of a gouty patient in sufficient quantity, might delay the advent of an attack by increasing the solubility of the biurate, and by their solvent action on uratic deposits facilitate the removal of these deposits. Dr. Luff has now carried out a long series of experiments on the mineral constituents of all the commonly used vegetables, and last week communicated his results to the Medico-Chirurgical Society. His object was to ascertain the relative effects of the mineral constituents on the solubility of sodium biurate at the temperature of the body, and therefore presumably on uratic deposit, as well as the influence, if any, in retarding the conversion of the quadriurate into the biurate. He experimented with spinach, Brussels sprouts, potatoes, asparagus, Savoy cabbage, French beans, lettuce, beet root, winter cab-

bage, celery, turnip tops, turnips, carrots, cauliflower, sea kale, and green peas. His results are that the minerals of green peas have no influence, but those of all the others appreciably increase the solubility of sodium biurate.

Curiously it was also shown by other experiments that the solvent effect of a vegetable ash has neither a direct nor an inverse relation to the proportions of potassium, sodium, calcium, magnesium, and iron salts present, or to the proportions of phosphates, sulphates, and chlorides. To no one constituent does the solvent effect seem due. The next step was to ascertain whether an artificially prepared ash would act as the natural. Spinach, which has the greatest effect on the biurate, was selected for the trial, and a powder prepared containing the same constituents as the ash of spinach and of precisely the same alkalinity. This product, instead of exercising the solvent action of the natural ash, actually had a deterrent effect on the solubility of the biurate, and that, too, in all proportions. The only explanation of this unexpected result offered by Dr. Luff is that in the natural ash there is some combination of the mineral constituents which cannot be artificially imitated, and on that combination depends the solvent influence. If this be so, the ancient practice of giving vegetable ashes in gout is found to have a scientific basis.

The next point to determine was whether the minerals of vegetables can also delay the conversion of quadriurate into biurate. The results of experiments made with this object show that in some cases the conversion is considerably delayed, especially by spinach, Brussels sprouts, French beans, cabbage, and turnips. It is natural to infer that if such ash constituents were present in suitable proportions in the blood and the excretion of quadriurate was at the same time promoted, the elimination of the quadriurate might be secured without the occurrence of precipitation of biurate into the tissues.

Very different is the effect of the mineral constituents of meat. These, as Dr. Luff has previously shown, diminish the solubility of biurate and delay to a very slight extent the conversion of quadriurate into biurate. He does not maintain that the different effects of animal and vegetable diets depend solely on the mineral constituents. Still to these he thinks we must look for an explanation of the fact that excess in one case tends to produce gout, in the other to retard it.

From all this we may conclude that the vegetables for the gouty are spinach, which is *facile princeps*, Brussels sprouts, French beans, winter cabbage, Savoy cabbage, turnip tops, turnips, and celery.

Bryant & May were fined for not reporting cases of "phossy jaw" recurring in their factory. The medical adviser of the company has naturally been the subject of comments as to his conduct in the matter. The law has been vindicated so far as the fines go, and the inspectors seem to have been wakened up by the prosecution. Two cases have been before the magistrates at Gloucester this week. One was dismissed, as the man had not made known his disease to his employer; in the second case a fine was imposed.

Loss of Half the Brain.—A man is reported by Porta to have lost the whole of his right cerebral hemisphere by an accident. He was unconscious for a few hours only, and when he recovered he proved that immediately after the accident he had not been unconscious, because he recollected being picked up and taken to a hospital. Eighteen months later the wound was closed. He had of course left-side paralysis, but, his left cerebral hemisphere being intact, his intellectual functions are said to have been unimpaired.

OUR PARIS LETTER.

(From our Special Correspondent.)

THE HEALTH OF PARIS—SLIGHT INCREASE IN THE MORTALITY RATE—THE TREATMENT OF "BRAIN FAG"—OUT-DOOR EXERCISE—GAMES AND SHAMPOOING—DANGERS OF VOMITING, DIARRHŒA, AND LEAD POISONING FROM EATING CANNED MEATS—DR. CABANÈS AND SAINTE-BEUVE—DOCTORS IN THE CHAMBER OF DEPUTIES—A NEW TUBERCULIN, ETC.

PARIS, June 25, 1898.

THE health of Paris continues good. In spite of the alternating warm and damp weather with cold winds that we have been having lately, the mortality rate compares very favorably with that of previous seasons. The last weekly *Bulletin Hebdomadaire* of municipal statistics shows for the twenty-third week of 1898 nine hundred and thirty-five deaths—a decrease of three from the preceding week (nine hundred and thirty-eight), but a slight increase above the ordinary average of weeks in June, which is eight hundred and ninety-four. This increase is to be placed chiefly to the account of diseases of the respiratory organs, measles, and infantile diarrhœa, especially the two latter. There is, however, a lowering in the number of deaths from pulmonary phthisis, and it is to be hoped that the prophylactic measures recently discussed and recommended by the Academy of Medicine, which can easily be carried out, not only in hospital and private practice but by the laity as well, will reduce steadily in the future the mortality rate from pulmonary tuberculosis. It will be remembered that the whole question seemed to turn upon the sequestration and disinfection of sputa, which are the real danger in phthisis.

It is not always easy to draw the line between "brain fag" and neurasthenia; that is, between temporary cerebral fatigue and true nervous exhaustion. Usually the two go together. But in those cases in which an intellectual worker is run down without its coming to a case of neurasthenia proper, and such cases can be counted by the thousands in the United States as well as in France, what is best to be done? Dr. Romme has just made some very valuable suggestions with reference to them, and bases justly the whole treatment on hygiene and tonics. Nevertheless the keynote of treatment in all such conditions is rest. Some of Dr. Romme's suggestions are these: The patient should go and live in the open air in the country; if he cannot, he should occupy rooms well aired, ventilated, and with full exposure to the sun. Between each period of work covering a few hours, and especially before and after meals, he should take mild physical exercise in accordance with his tastes, such as walking, bicycling, rowing, gymnastics, open-air games, bowling, golf, croquet, lawn tennis, etc. If he cannot go out, he can do gymnastics in his rooms, play billiards—in a word, seek distraction and movement. If he finds gymnastics too fatiguing, he will derive benefit from carriage exercise. His meals ought be regular and substantial, with avoidance of alcoholic drinks. Massage and douches are valuable adjuvants.

I have found these cases much benefited by shampooing the head every day and then rubbing it with alcohol before drying thoroughly. It is well, however, to begin the treatment with a complete absolute rest from mental labor for several weeks before adopting Dr. Romme's suggestions. Horseback riding is a most valuable exercise and aid to re-establishment in brain fatigue. As regards tonics there is nothing better than a phosphate combination of iron, quinine, and strychnine, alternating with a course of the glycerophosphates.

A subject that may interest the United States commissary department just now is that of canned meats, in order to prevent such mishaps as the one that oc-

curred only a few days ago in a squadron of the third regiment of French cuirassiers in garrison at Tours. Eighty-five of the men were taken with vomiting and diarrhœa after eating canned meat, which incapacitated them for service. It is of course impossible in the distribution of quantities of canned meat to troops not to give out spoiled cans, if such there are. The fault is clearly with the preparers and canners. These processes ought to be superintended directly by a competent person, preferably a physician or health officer; only perfectly pure fresh meat, absolutely sound, being used, and care being taken that the cans are well and smoothly soldered and that there are no little bits of tin or solder around the inner border or adhering to the sides of the can, for lead poisoning is another danger that lurks in canned meats or vegetables. The sealing besides must be hermetical.

The inauguration on Sunday last in the gardens of the Luxembourg Palace of the statue of Sainte-Beuve was an event of much interest to the medical profession, which was largely represented at the ceremony. In fact the subscription for the monument was originally started not by men of letters, of whom Sainte-Beuve was a chief, but by Dr. Cabanès, director of the "Chronique Médicale." Nor should it be forgotten, as was recalled only a few days ago by a distinguished physician, who is also a littérateur, that Sainte-Beuve was during his early youth an "externe" at one of the great Paris hospitals, and that one day at the Hôtel Dieu, where he took the place of an "interne" who was absent, he put on the white apron beside Dupuytren. He, however, soon abandoned the scalpel for the pen, and confined his dissections thenceforward to those of works of the mind. Nevertheless, considering that it was a just pride that such a man had begun life in the ranks of the medical profession and surprised that the illustrious writer had not obtained democratic honors in cold, pale marble on a public place or square, Dr. Cabanès had the happy inspiration of asking his confrères to repair the oversight—with what result it has just been noted. The monument is a pure white marble bust with lifelike smiling expression, resting on a stone plinth. Underneath the bust are a pen and a palm leaf. The simple inscription is: "To Saint-Beuve of the French Academy, 1804–1869. His admirers and friends."

The elections that have just taken place have sent some fifty-seven doctors or health officers to the chamber of deputies.

Dr. Ramond affirms to the Biological Society that with Dr. Ravaud he has obtained by cultivation in glyco-glycerinated bouillon from bacilli of tuberculous fish a tuberculin which by its odor and biological reactions resembles that coming from the bacilli of human tuberculosis. And Dr. Ledoux-Lebard communicates a certain number of experiments tending to establish that from a botanical standpoint the bacilli of tuberculosis in fish may be compared with those of tuberculosis in man and the mammifera.

FOREIGN BODIES IN THE NOSE OR EAR.

To the Editor of the Medical Record.

Sir: In looking over the article of Dr. Barret in the Medical Record of June 11th, and the note by Dr. Winslow in the issue of June 25th, on the removal of foreign bodies from the nose or ear, I was surprised that they failed to mention a simple and very effective instrument which is within every physician's reach, viz., the wire snare.

The loop of a Jarvis or Sajous snare, or a simple piece of stiff fine wire bent into a loop, will slip past a hard, smooth body like a shoe button, a glass bead, or a bean, which completely occludes the auditory canal, and will easily remove it, when any sort of forceps or hook would fail to grasp the object and would very likely do more or less injury in the attempt. The instrument works equally well in the nose, and the ease with which it can be used and the freedom from possible injury, especially in the case of a frightened, struggling child, make it the most desirable means within my knowledge for this class of work.

I would simply add this to the very valuable suggestions contained in the articles above noted, in the hope that it may prove as satisfactory to others as it has to myself.

Frank B. Storer, M.D.

Holley, N. Y.

A SIMPLE METHOD OF PNEUMATIC MASSAGE OF THE TYMPANIC MEMBRANE AND OSSICLES.

To the Editor of the Medical Record.

Sir: In a lately published account of the various forms of apparatus for passive exercise of the drumhead and its attachments, I find none so simple and convenient and so safe for the patient's use as the following, which for twenty years or more I have been wont to improvise in appropriate cases.

Smooth in a flame the ends of an inch of thick glass tubing of proper size. Fit one end to the patient's meatus by a half-inch of rubber tubing slipped over it, and attach to the other end a yard of small rubber tubing. Into this, at its further extremity, slip the point of a straight pipette ("medicine dropper"), whose rubber bulb must be not too large and not too stiff. If the pipette point is too fine, cut it off.

The patient holds the pipette by its glass stem between the thumb and last three fingers, placing his index lightly on the bulb, which he rests on the knee or a table. By a wrist motion in which the finger does not leave the bulb, or the bulb its resting-place, he makes rapid compression and relaxation, and, if the tube is not kinked, the pressure changes are promptly transmitted to the membrane.

If it is desired to treat both ears at once, introduce a Y connecting-tube. I have found a double stethoscope serves the purpose. An electro-motor may replace the hand for office use, but the best results come from home treatment several times a day.

With the small, weak bulb of the pipette, while the patient can get all permissible exercise of the membrane, he can do himself no harm. This is not the case even when his lips take the place of the bulb. He should be cautioned not to overdo the Valsalva or Politzer inflation, which ought always to precede the exercise and be repeated frequently during its continuance. The stronger suction and compression for breaking up adhesions, etc., whether made with the mouth or with a large bulb or syringe, must be employed only under sight through the Siegle speculum, and then only by the expert otologist.

John Winslow, M.D.

Ithaca, N. Y.

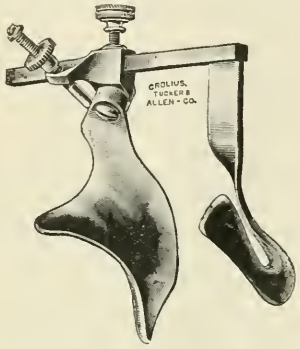
Intratympanic Surgery.—The results of excision of the necrotic ossicles in chronic purulent otitis media may be summed up as: 1. Prompt lessening of the discharge in all cases. 2. Ultimate cessation of the discharge and cicatrization of the fundus in nearly one-half of the cases, as observed so far. 3. Arrest of the advance of caries and necrosis in the drum cavity, aditus, antrum, and mastoid cells, thus lessening the liability of the occurrence of intracranial lesions of otitic origin. 4. Improvement in hearing in more than half the cases. 5. Marked amelioration in the general health, especially in those cases presenting symptoms of slight septicæmia from the chronic purulency.—Dr. Charles H. Burnett, *International Medical Magazine*, December, 1897.

New Instruments.

NEW SELF-RETAINING VAGINAL SPECULUM.

By A. W. ABBOTT, M.D.,
MINNEAPOLIS, MINN.

This speculum is self-retaining and is equally useful in all positions. It should be introduced closed, the large blade toward the posterior vaginal wall. The



forefinger is then introduced between the blades, and by making counterpressure with the thumb on the bar the requisite divergence is obtained and then fixed by means of the nut on the retaining-screw. The blades are then spread to the required length by sliding the posterior blade on the bar. To remove the speculum, simply reverse the process. With this instrument and without assistants, curettage, trachelorrhaphy, vesico-vaginal operations, and uterine and vaginal dressings have been made. This instrument was made for me by the Crolius, Tucker & Allen Company, of Minneapolis, Minn.

A DEVICE FOR TURNING OFF THE CAROTIDS IN OPERATIONS ON THE HEAD AND NECK.[1]

By ROBERT W. JOHNSON, M.D.,
PROFESSOR OF THE PRINCIPLES AND PRACTICE OF SURGERY IN THE BALTIMORE MEDICAL COLLEGE, BALTIMORE, MD.

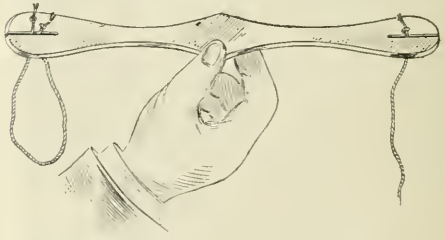
It goes without saying that the loss of blood in the vast majority of surgical cases is a serious item, and contributes largely to the bad outcome of operations—first, because the shock consequent to operations is often proportionate to the amount of blood lost, so that we see our careful surgeon's wounds bristling with hæmostats and new inventions like Esmarch's bandage hailed with delight and immediate adoption; secondly, because the flow of blood impedes the work of the surgeon, necessitating sponging and delay and often obscuring the field in the vicinity of important tissues, when an accurate knowledge of the exact relations must be kept in sight as well as mapped out by the anatomical acumen of the educated index finger.

It is, however, when we come to operate above the clavicle—speaking broadly, in the vicinity of the air passages—that a new danger is added to blood loss, one that is partly mechanical, partly biological, and that is the entrance of blood into the lung or trachea—mechanical, in that in large quantities it may drown the patient; biological, in that pneumonia or sepsis often follows in its wake. Various methods of obviating these dangers have been practised. Trendelenburg's position, with the head down, has the advantage of gravity, but allowing the blood to flow away from the trachea does not stop it, nor does it do away with the suction force of the lung, which may, in spite of the position, suck blood back into the larynx. Pressure on the carotids is a clumsy attempt at checking hemorrhage, inasmuch as the thumb or finger presses on the pneumogastric or possibly on the phrenic; and even if that objection were obviated, it is unreliable. Esmarch's bandage applied over the carotids but under the larynx is an example of science gone to seed. Once it bore Dead Sea fruit in a death on the table, probably from the pressure on nerve or venous trunks.

The écraseur and cautery are more or less dumb witnesses that blood must be stopped, even if we have to crush or cook the part to accomplish our end, temporarily at best, with anxious moments to follow the sloughing, lest secondary hemorrhage supplement the destruction that primary failed to produce. Chemical hæmostats—especially that abomination (in most instances), Monsel's solution—are rather medical than surgical, and, if applicable, are only for capillary rather than for arterial or venous bleeding. The same may be said of gauze packing, though in itself a most valuable hæmostat for postoperative oozing.

Ligation remains as reliable, and in the main it is satisfactory, if only we could avoid the loss of blood from tissues that do not require a ligature provided they have a little time for clot building.

What Esmarch's bandage has done for the extremities I trust this little device may accomplish in a small degree for areas supplied by the carotids. I had hoped to extend its usefulness to operations on the brain, but recent experiments on dogs have shown me that not only will they live with both carotids tied simultaneously and permanently, but the cerebral hemorrhage is scarcely affected, so great is the intercommunication with the vertebral arteries, and that they bleed profusely from brain incisions with both carotids ligated. In order to give some idea of the ease with which the common carotid may be exposed at the point of election, let me quote Nélaton, who said: "It takes four minutes for a man to bleed to death from the carotid, while two minutes are sufficient to tie it" ("American Text-Book of Surgery," page 639). "In uncomplicated cases the operation is very simple" (Treves, vol. i., page 154). It is unnecessary to multiply testimony as to its feasibility, especially if you have had experience in exposing it yourselves; few operations are easier. Rivington and Treves



called attention to the value of holding up the carotid as a hæmostat (*The Lancet*, January 21, 1888, page 111). The object of this paper is to show that either carotid may be held up alternately without injuring the brain structure, and that both may be held up for a short space of time or intermittently for a longer time, without permanent injury to the patient. This is accomplished by the very simple device here shown.

A silk ligature, of sufficient thickness (say, No. 14) to avoid cutting or bruising the artery, is passed around the common carotid on one or both sides of the neck, preferably at the point of election just above the omohyoid, care being taken to avoid the pneumogastric and to open the sheath only far enough to pass

[1] Read before the Clinical Society of Maryland, February 18, 1898.

the aneurism needle with a suture around the carotid. The external wounds may now be closed by suture or we may allow a short interval between the sutures for the play of the ligature. It is better to close the wound before beginning the main operation, as there is less liability to infection.

The knotted ends of the ligature are caught in the split at the end of the soft-wood bobbin, and when the arteries are so secured the assistant, raising or depressing one or other end of the bobbin, controls the artery on which the temporary tension is put. Thus in operating on vascular growths of the posterior nares or pharynx involving the median line, he can follow the operator with his eye, and, as the latter veers to one or the other side, can raise the corresponding carotid and cut off the circulation; or for brief intervals he can raise both ends and thus close both carotids, until the arteries exposed by the operator in the main operation can be secured.

From experiments on dogs as well as from the history of cases when both carotids have been tied, I feel that we run but little risk in temporarily cutting off the brain from that blood supply, especially as we can restore it readily by loosening the vessels, should unpleasant symptoms arise. When the operation is over, or rather when bloodshed is over, one end of each loop should be cut close to the skin and the rest of it drawn through the wound from behind the artery, thus diminishing the chance of infection and in no way destroying the sutures or dressings.

Operations involving areas outside of the brain itself which are supplied by the carotids may thus be rendered almost bloodless by a procedure nearly as simple under asepsis as turning off spigots in a bath-room.

A PORTABLE OPERATING-ROOM FOR FIELD SERVICE.

By L. E. COFER, M.D.,
U. S. MARINE HOSPITAL SERVICE, SAN DIEGO, CAL.

The portable operating-room, sketches of which are shown herewith, is intended for use during engagements or skirmishes by either military or naval landing forces. It may be drawn by members of the hospital corps or dragged behind an ambulance. During an engagement, after it has been drawn to a protected spot, the four operating-tables may be quickly unfolded and the awnings spread, there affording, it is believed, the maximum amount of surgical emergency equipment in the most convenient form. Not only is it possible with this device to operate on or treat four patients at once, but if necessary they may be left on the tables, thereby turning the operating-room into an improvised hospital tent. Not being a mechanic, I must leave the details and possible difficulties attendant upon its successful construction to the instrument maker. I would suggest, however, that the material be white enamelled iron or steel frames. Wheels of the kind used on bicycles would be a great advantage, as they combine lightness and strength. A description of its various parts is given under Figs. 1 and 2.

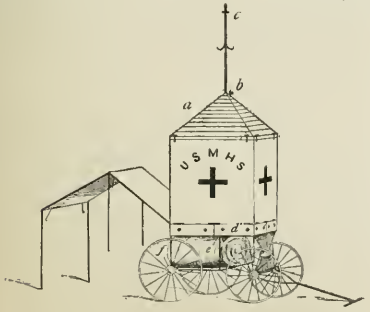


Fig. 1.—Showing Portable Operating-Room Ready for Transportation, also Method of Folding Table. *a*, Tank for sterilized water or decinormal salt solution; *b*, tap for filling tank; *c*, rod for centre hole of tent; *d*, zinc-lined drawers for storage of instruments and for use as instrument trays; *e*, folded tent in cage (*f*); the latter should also hold extension tent rods and guy ropes.

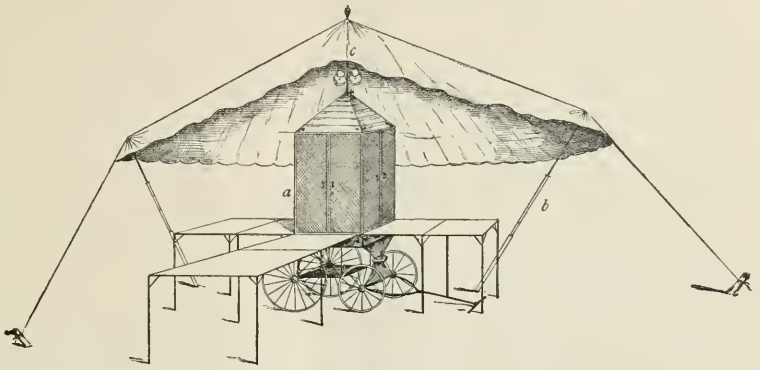


Fig. 2.—Showing Portable Operating-Room Ready for Use. *a*, Wire cage divided into compartments to contain surgical emergency equipment; *b*, steel extension tent rods; *c*, lanterns.

Medical Items.

A Nervous Surgeon.—William Cheselden, the famous English surgeon who died in 1752, is related to have always been sick from anxiety before operating, and as the moment approached was pale from fear. But the instant he commenced his work all fear vanished, the hand was electrified with skill, and the operation was perfect.—*Asclepiad.*

Trepanning.—The custom of trepanning or taking a small piece of bone from the living head was much practised in prehistoric times, as the skulls prove to us, and is still in vogue among some peoples. Among these are the people of the Berber stock in the Djebal Amès and the Djebal Checkar of the edges of the Algerian plateau. The method of performing the operation is carefully described by Drs. H. Malbot and R. Verneau. Dr. Malbot was shown by a native doctor a skull with more than a dozen circular holes, two slits, and a large irregular orifice, all of which had been pierced when the man was alive. The skull was kept hidden, and was evidently used as an example by the local doctor. The natives have recourse to trepanning for blows or wounds on the head, and it does not matter how long before the blow may have been given, if only the sick person can remember that he has had one. The operation is not severe. A woman, tired of her husband, is said to have called in the service of a trepanner, in order to get a divorce from him by producing a piece of her skull and affirming that he had broken it in some of his cruel acts.

A Determined Suicide.—A man was arrested for poaching on fish preserves by means of dynamite cartridges. He decided to take his own life by the same means. He placed the cartridge under his chin, but, the effect of dynamite explosions being most marked downward, the chief effect was to damage the hand which held the cartridge and the other hand to a less extent. He then lay down on the ground, placed a cartridge on his chest, and with great difficulty, owing to the injury to his hands, struck a match after many attempts, and applied it to the fuse. The thorax and abdomen were completely emptied of their contents, and the corresponding parts of the vertebral column and ribs were also missing. The other parts of the body were not injured.—*Medical Press and Circular.*

John Hunter Angry.—Mr. Paget, in his "Life of Hunter," says that the great surgeon was only once, so far as is known, rough and brutal to his patients or their friends; he asked leave to make a post-mortem examination and it was refused. Over this loss of precious knowledge he forgot himself. Abernethy tells the story as he heard it from an eye witness: When he was conscious that his object was unattainable, he was standing with his back to the fire and he put his hands into his pockets. He gravely and calmly addressed the master of the house in the following manner: "Then, sir, you will not permit the examination to be made?" "It is impossible," was the reply. "Then, sir," said Mr. Hunter, "I heartily hope that yourself and all your family, nay, all your friends, may die of that same disease, and that no one may be able to afford any assistance."

The Parisian Doctor's Black List.—According to an English weekly journal, when a Parisian doctor is called upon to attend a new patient, even though the case be a most urgent one, he first consults a book, fittingly bound in black, and if he finds the sick person's name recorded there he declines to go. For in this "black book" is a list of the names of those who have received medical services but who, though pecuniarily able, have refused to pay their doctor's bill. The book is issued by the great medical society of Paris, whose members have agreed to observe the rules which came into effect some short time ago. These rules provide that each physician shall keep a careful record, which he shall forward to the officers of the society at stated intervals, of the names of those whom he has attended who have refused to pay him his fee. Every reasonable effort should first be made, however, to collect the bill, and only when the patient's debt has been paid will his name be erased from the list. This doctor's black list is the result of the superabundance of doctors, many of whom find it hard to make more than a bare living, and suffer much annoyance from uncollectable debts.

Stimulants.—The first choice of any particular stimulant seems to depend on such altogether accidental circumstances as the accessibility or cheapness of this or that special medium of intoxication. Orchard countries use distilled or vinous tipples; grain lands waste their products on malt liquors. The pastoral Turkomans fuddle with kumyss, or fermented mare's milk, the Ashantees with sorgho beer, the Mexicans with pulque (aloe sap), the Chinese and Persians with opium and hasheesh (cannabis indica), the Peruvians with the acrid leaves of the coca tree. Even mineral poisons have their votaries. There are thousands of arsenic eaters in the southern Alps. Arsenious acid, antimony, cinnabar, and acetate of copper are mistaken for digestive tonics by Spanish and South American miners. By the process of fermentation rice, sago, honey, sugar, durrha (Sorghum vulgaris), dates, plums, currants, and innumerable other berries and fruits have been converted into stimulants. The Indians on the Llanos Ventosos in the Mexican State of Oaxaca stupefy themselves with macerated cicuta, a kind of water hemlock, and it is said that the delirium and subsequent reaction of a cicuta debauch correspond exactly to the successive phases of a whiskey spree, the only difference being in the price of the tipple. If intoxication were a physiological necessity, it would, indeed, be folly to buy the stimulant at the dramshops, since cheaper poisons would serve the same purpose. A dime's worth of arsenic would protract the stimulant fever for a week, with all the alternate excitements and dejections of an alcohol revel. A man might get used to phosphorus and inflame his liver with the same lucifer matches he uses to light his lamp; we might gather jimson weed or aconite or fuddle with mushrooms, like the natives of Kamchatka, who prepare a highly intoxicating liquor from a decoction of the common fly toadstool (Agaricus maculatus).—Oswald, *in The Popular Science Monthly.*

English and Metric Weights and Measures.—The following comparative summary of English and metric standards of measurement of weights and measures may be useful: The English inch is equivalent to 2.54 centimetres; the foot to 30.48 centimetres; the yard to 94.44 centimetres; the mile to 1,609.33 metres; the nautical mile to 1,852.30 metres. The square inch is equivalent to 16.387 cubic centimetres; the cubic foot to 28.516 cubic decimetres; the cubic yard to 764.535 cubic decimetres; the pint to 0.567 cubic decimetre; the gallon to 45.410 cubic decimetres. The English grain is equivalent to 64.799 milligrams; the ounce avoirdupois to 28.349 grams; the pound to 453.590 grams; the ton to 1,016.050 kilograms. The foot pound is equivalent to 0.13825 kilogrammetre; the French horse power to 75 kilogrammetres a second; and the English horse power (550 foot pounds a second or 33,000 foot pounds a minute) to 76 kilogrammetres a second. The metrical unit of pressure is the kilogram per square centimetre. We may also count by centimetres of mercury or by atmospheres. A pressure of one atmosphere corresponds to a column of mercury 76 centimetres high, or to 1.033 kilograms per square centimetre. The English pound per square inch corresponds with 70.3 grams per square centimetre.

Quain the Host vs. Quain the Doctor.—Many good stories are told of Sir Richard Quain, whose social distinction had latterly overshadowed his medical reputation. One of the most characteristic of them was that of the friend patient who was first urgently warned by Sir Richard Quain, the physician, against touching champagne or port, and shortly afterward equally warmly urged by Sir Richard, the host, to try very special brands of those wines, which he had brought out for his guest. The guest patient laughed and drank, and pondered on the mysteries of medical advice.

Hair.—A writer in an English weekly journal says that it is a curious fact that red-haired people are far less apt to go bald than those with other colored hair. The average crop on the head of a red-haired person is only 29,200 hairs. Ordinary dark hair is far finer, and over three dark hairs take up the space of one red one; 105,000 are about the average. But fair-haired people are still better off; 140,000 to 160,000 are quite a common number of hairs on the scalp of a fair-haired man or woman. A curious calculation has been made, to the effect that the hairs on the head of a fair-haired person, if they could be plaited together, would sustain a weight of something like eighty tons, equalling that of five hundred people.

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Original Articles.

FRACTURES OF THE BONES OF THE FACE.[1]

By C. C. WARDEN, M.D.,
NASHVILLE, TENN.

In studying fractures of the bones of the face there must of necessity arise some slight difficulty in classification, since injuries in this region commonly involve portions of the bones of the cranium, such as the frontal and ethmoid, without inflicting damage to such facial bones as the palate and lacrymal. I shall endeavor, however, to confine this paper to the limits of its title, fractures in other regions as possible complications.

Reports from the London and Berlin hospitals[2] show that out of 1,876 fractures of the bones of the face there were 453 of the inferior maxilla, 268 of the nose, and 142 of the superior maxilla and zygoma. We may consequently safely infer that the inferior maxilla is fractured four times more frequently than the superior maxilla, and twice as frequently as the nose.

The subject may be divided, then, for separate consideration into fractures of the inferior maxilla, nasal, superior maxilla, malar, palatal, inferior turbinated, and lacrymal bones in the order named.

Fractures of the Inferior Maxilla.—These injuries are most common during the second and third decades of life. They occur eleven times more frequently in males than in females and are rare during infancy, childhood, and old age.

The factors causing the comparative immunity of youth and age are obvious and directly due to difference in exposure and occupation at such periods of life. Rickets as an etiological factor in children should not be forgotten, though there is much doubt if this disease materially increases the percentage of fractures of this bone. The changes occurring in the inferior maxilla in old age, which are a reduction in size due to absorption and alteration in form, doubtless render the bone more liable to fracture than at other periods of existence, and such instances would be numerous were it not for the safeguards which sedentary persuits of age afford. Climate may be dismissed as of practically no causal importance. The intense cold of the Lake Superior region has not to my observation ever materially increased the number of cases. Broken bones are extremely common, to be sure, but directly due to the hazardous occupations of timbering and mining, and the precarious pastimes of snowshoeing, tobogganing, and skiing. The immediate cause of fracture is always direct violence applied to the parts. The statement that violent contraction of the temporal muscles will snap off the tip of the coronoid process need hardly be considered, since there is nothing to substantiate it. Blows upon the chin or any portion of the jaw, falls upon the face, the impetus of some flying object, sudden turning of the head to encounter resistance, faulty attempts or hasty and careless efforts to open the jaws during narcosis, and incautious extraction of teeth, are all immediate causes.

The line of fracture may occur at any portion of the body and rami, or rarely through the processes of the bone.

Fractures of the condyles are rare and depend principally upon blows or falls upon the chin. The coronoid processes are seldom alone involved, but usually at the same time there is extensive damage to the malar and zygoma. Probably the most frequent site of breaking is through the body on either side of the symphysis, anterior to the last molar tooth. Fractures through the symphysis are also common.

The line of fracture is generally transverse in these localities, with or without splintering, according to the quality of the shattering force. Behind the last molar tooth the line of separation generally extends downward and backward, and this direction is usually met with in fractures through the angle. Fractures may be simple, double, or multiple, comminuted or compound. The double variety is quite common, owing to the fracturing force being frequently applied to the side of the face, and usually the lines of breakage are nearly opposite—that is to say, symmetrical. Such double fractures are particularly liable to be compound, owing to the frequency with which the gums are lacerated by the lateral dislocation.

Deformity is common. The fragments may be vertically displaced, as shown by the difference in level of the teeth, or they may override. In double fractures the anterior fragment is usually lower than its fellow, and held to one side by the action of the breaking force and possibly by the action of the muscles. Deformity following single fractures is liable to be due to some slight obliquity in the line of fracture rather than to muscular action. This condition is particularly apt to occur when the break is lateral somewhere between the incisor and the last molar teeth. Fractures in the angle do not yield much if any deformity, owing to the steadying action of the masseter and pterygoid muscles.

Condyloid fractures show usually no deformity at all, unless the internal pterygoid carries the condyle forward, when the jaw becomes slightly tilted toward the wounded side.

The symptoms are pain, abnormal mobility, swelling, deformity, and crepitation. The injuries that occur anterior to the angle of the jaw are always clearly demonstrable—as is the case too with fractures through the ramus—by palpation, both within and without the mouth, in conjunction with the usual symptoms and physical signs. The most difficulty will be encountered in diagnosing lesions in the superior portion of the ramus, at the neck, and through the condyle, for the reason that these points are less accessible and well protected. There should be no difficulty, however, in fully satisfying one's self of the nature of the injury, since anæsthesia in these cases gives us the needed assistance.

The treatment consists in accurate correction of the deformity and rest by immobilization of the affected parts. Nearly all fractures unite kindly and quickly, or at least have a marked tendency to do so unless hampered with detached, suppurating, necrosed frag-

[1] Read before the Nashville Academy of Medicine, January 14, 1898.

[2] Langenbeck's Archiv, 1862, vol. iii., pp. 394, 466.

ments or splinters. Four weeks at the utmost should bring about good bony union and fair restoration of function. There are many agents at our disposal for the maintenance of correct position. Numerous splints, both external and moulded interdental, have been devised. It may be safely said that nature's own splint, the upper jaw and teeth, affords the simplest, safest, and best splint for the affected parts. When the teeth are in good preservation the fracture should be accurately reduced by careful manipulation, and the lower jaw brought up against the upper in a position natural and comfortable to the patient and secured there. The patient's subjective sense is very helpful. He usually will assert whether or not his teeth fit together in the proper manner. A moulded pasteboard, yucca, gutta percha, or fret splint should be applied to the outer surface of the jaw and contiguous portions of the neck, and retained in place by firm bandaging. Feeding can in nearly every case be conveniently effected through the posterior dental space. I would suggest that the term spoon victuals, rather than slops, which Mr. Waltham makes use of, be employed as a slightly more elegant term, to designate the particular consistence of nourishment required. Wiring the teeth nearest the line of fracture is a common procedure, but is often inapplicable, since the teeth are commonly loosened at the time of the injury, and, if not, will speedily become so when securely wired. A better plan is to include all the teeth with a stout wire running in a groove in a moulded vulcanized-rubber or gutta-percha shield, which fits the outer surface of the teeth and gums. The end of the wire may be anchored securely around the last molar teeth, and twisted together in front at the median line. By this means there is no dragging on any particular teeth. Interdental splints are often very serviceable when accurately applied by a competent dentist, and at times are alone applicable, owing to wide irregularities in the teeth. They also permit of motion of the jaw, which may be in certain cases advisable. When it is difficult to correct deformity or to maintain a proper position, on account of small comminuted fragments or splinters of bone, it will be entirely permissible to cut down upon the fracture within or without the mouth, and by trimming or removing fragments to bring the parts into close apposition. We do not thereby greatly diminish the speediness of recovery, but by so doing are able to lessen the remote chances of delayed union and pseudarthrosis and to prevent abscesses, which are liable to form under such conditions. This practice is of course facilitated when the fracture is already compound.

The toilet of the mouth should be attended to with care and the cavity should be cleansed several times daily with non-irritating antiseptic washes.

Fracture of the Nasal Bones is always the result of direct violence. One or both bones may be broken. Such injuries are most common in males during the third decade of life, and are quite rare in females and children, particularly among the upper classes. The present athletic tendency of females has to some extent brought up their average—how much it would be interesting to know—and bicycle riding appears to be a fruitful source of such injury. The fracture may be simple, comminuted, or compound. The lines of fracture may be transverse, oblique, or longitudinal, more often the first variety. Simple single fractures without deformity are not so rare as supposed, and careful investigation of the injuries in this region would frequently demonstrate their existence. Usually the fracture is double or multiple and the deformity quite apparent. The lower fragments are usually depressed, sometimes to the level of the nasal process of the superior maxilla, and frequently there exists considerable inward or lateral displacement.

Deformity as a result is marked. The most noticeable and serious deformity occurs when the nose is broken by a blow upon the bridge, applied directly from before backward, causing a depression and flattening.

It must not be forgotten that fractures in this region are frequently complicated by injuries to contiguous bony structures, such as the spine of the frontal bone, the cribriform and vertical plates of the ethmoid, and the nasal processes of the superior maxillæ. Again, there may be a disarticulation of the triangular cartilage, and very rarely and only in extensive smashes of the face we may meet with fractures or disarticulation of the inferior turbinated bodies. The perpendicular plate of the ethmoid usually yields sooner than transmit breaking-force to the cribriform plate, yet this plate may be involved in fractures high up toward the frontal ridge. The possibilities of this complication should be well borne in mind.

The symptoms of fracture of the nasal bones are hemorrhage, swelling, deformity, and crepitation. The patient will complain of intense pain, particularly on manipulation of the affected parts. Hemorrhage may be profuse but not necessarily dangerous or exhausting. Coexistent with the swelling may be noticed emphysema of the eyelids and face and a general puffy condition of the whole midfacial triangle. Crepitation is usually easy of demonstration and is quite characteristic in multiple fractures, yielding a sensation as if the fingers were kneading thin parchment. The deformity may be partially or entirely masked by the swollen tissues, particularly after the injury is a few hours old.

The tendency to repair is active. A week will suffice to bring about such firm union that attempted repair of recurring deformity may be wellnigh impossible.

The treatment consists in reducing as accurately as possible such deformity as exists, and affording support and rest to the part by maintaining the fragments in correct position and guarding them from further injury. The turgid mucous membranes may cause the patient great annoyance, and will prove a fruitful source of relapsing malposition, because of the respiratory efforts to gain a free passage for air. The patient should be cautioned against such efforts.

Reduction of these fractures when there exists considerable fragmentation is always difficult. The bones should be moulded into position by the fingers of the operator from without, aided by the counter-pressure from within of a stiff, stout probe or director. And here the question of anæsthesia will arise, since the patient almost invariably refuses to submit to this treatment. The director or probe in use should be blunt pointed, and the instrument should not be carried too high, since there may exist some doubt as to the integrity of the cribriform plate. Should there be a tendency to slip on the part of the fragments, the difficulty may be overcome by anchoring them with a harelip pin or with metal braces, exerting steadying pressure from within. The practice of maintaining correct position by tamponing should be interdicted for humanity's sake. Sufficient pressure can be brought to bear upon the parts by using an ordinary hairpin properly bent and adjusted, the free end of which is embedded in a thin layer of cork, which is retained on the upper lip by rubber adhesive strips. A moulded thin felt splint applied so as to cover the entire bridge of the nose and portions of either cheek, retained in position by adhesive straps, will afford protection from without. Compound fractures offer serious difficulties and should receive all the surgeon's conscientious efforts to promote asepsis. It may often be necessary to render a badly comminuted fracture compound in order to maintain a correct position of fragments and

prevent subsequent suppuration. Such a proceeding is to be commended, since it is better surgery to cut preventively, it seems to me, than to be obliged to incise and drain abscesses later in the day. A small external cicatrix is infinitely more preferable than a permanent and unsightly deformity of the nose itself.

Fractures of the Superior Maxilla are nearly always limited to the processes of this bone, except when extremely violent and shattering force is applied. The nasal processes are commonly associated with the nasal bones in injuries and the malar processes with injuries of the malar bone and zygoma.

Fractures of the alveolar processes are common. The body of the bone is, however, broken at times and commonly involves with it the palate and pterygoid plates. We may confidently expect severe injury to soft structures and extensive damage, if not obliteration, of the antrum in such cases. Injuries to this bone are always due to direct violence, applied from without or from within through the mouth. The fracture may be simple, multiple, comminuted, or compound. The lines of fracture may extend in any direction, depending upon the character and direction of the force applied to cause them. The deformity is usually not extreme. In cases in which the whole bone is driven backward into the pharynx, the disfiguration is very apparent. Usually in cases of moderate damage some slight flattening of the face is observed, and oral examination will reveal the displacement, particularly when the alveolar or palatal processes are involved. There may exist considerable separation of the halves of the palate and usually there is a slight difference in level. The deformity is necessarily great in fractures of the nasal process associated with like injury to the nasal bone. Transverse fractures through the body above the alveolar processes are frequently met with and usually present no disfigurement whatever. Injuries to the orbital portion of the bone, including the ridge and the floor, are always accompanied by extravasation of blood into the orbit and cheeks, producing considerable bulging of the eyeball. Formications and anæsthesia frequently occur, because of damage to the second division of the fifth nerve. The symptoms are pain, swelling, deformity, and crepitation.

Fractures in this region present few difficulties in diagnosis. Single transverse fractures through the body of the bone may, however, pass undetected. Guerrin says that in this injury the pterygoid apophysis is invariably broken and pressure over its area will elicit pain. The exact amount of damage done in severe smashes of the superior maxilla cannot always be accurately determined, since the fracturing force may be continued or transmitted to the bones of the base of the skull. It is not the province of this paper to discuss fractures due to gunshot wounds through the mouth. It will suffice to say that nearly all such cases are of suicidal provocation and quite commonly fatal. Fractures near the inner canthus, particularly when compound, are liable to cause damage to the nasal duct or even its obliteration.

The treatment of these injuries demands restoration of normal relations as near as possible. The fractured nasal processes should be subjected to moulding and adjustment just as the fractured nasal bone. The same apparatus, slightly modified to suit the case, may be employed. Severe comminution of these processes is apt to be followed by necrosis of fragments. The bone here is very thin and fragile, and when detached completely or badly fragmented quickly suppurates and is sloughed off. Injury to the lower turbinated bodies may require their partial removal, particularly if the fracture be compounded within the nose. The septum, if broken or bent out of proper alignment, should be straightened. In cases in which the damage to the body and orbital portions is extensive and there is much pulverization of the bony parts, it may be well to render the injury compound, if it be not already so, either from within or from without, and remove the detached fragments, since by so doing the patient may be spared the long-continued and offensive suppuration that is otherwise almost inevitable. Simple fractures through the body rarely require further treatment than protection and rest. When separation occurs between the palatal processes, it will be found that if the parts can be maintained at the same level the gap will close of itself, as a general rule, without deformity. When fractures involve the alveolar processes the fragments should be replaced and maintained in position by wiring the teeth or by the aid of interdental splints. No effort should be made to remove loose teeth, but rather they should be pushed into position as nearly as possible, in the hope of saving them. In addition, the effort to extract the teeth might increase the damage already done. In spite of care these fragments are liable to separate and necrose. In such a contingency they should be removed.

Fractures of the Body or Processes of the Malar Bone occur as a result of violence applied to the face. The commonest injuries to this bone are those in which the body is broken and driven inward together with the malar process of the superior maxilla, with consequent damage to the antrum. More rarely there may exist a simple fracture, the line running more or less vertical or transverse.

Gurlt insists that a simple diastasis may occur, and claims to have recorded a few instances. This injury is of all most rare. It practically cannot be produced on the cadaver, though the lines of fracture may closely follow the direction of the sutures. Fractures of the zygomatic process, together with the corresponding shaft of the temporal, are of more common occurrence, and may be complicated by fracture of the coronoid process of the inferior maxilla. The varieties of fracture are simple, compound, or comminuted. Of these, compound injuries are rarest.

The symptoms are pain, swelling, deformity, and crepitation. Pain is particularly acute in this region, and rarely will the patient submit to manipulation of the parts. The diagnosis is largely dependent on deformity and crepitation, particularly the latter, since a simple fracture deformity is liable to be wholly wanting. When the line of fracture traverses the portion of bone forming the outer wall of the orbit, the eye may bulge from the pressure of extravasated blood. There will also be considerable effusion into the surrounding tissues. Severe crushing-injuries with inward displacement of fragments and obliteration of the maxillary sinus are not difficult of recognition, owing to the characteristic sunken appearance of the cheek and the sensation of distinct crepitus that is always elicited.

The treatment consists in coaptation of fragments and protection to the part. Moulding of the shattered parts is frequently most difficult, since there is little opportunity to elevate fragments unless the fracture be compounded. The finger passed up within the mouth along the cheek will be able to render considerable assistance. If a hook can be brought beneath the depressed portions and carried forward, the aim may be accomplished.

The necessity of cutting down upon the bone for this purpose may meet the surgeon. Depressed fractures of the zygomatic arch are more easily remedied because of the fossæ above and below. Splints are valuable, in so far as they afford protection to the injured part. Union takes place rapidly, hence the necessity for early attempts at reduction. There is not excessive formation of callus.

Extensive injuries to the face may include fractures of the hard palate. The orbital plate of the palate is

rarely ever broken unless there is serious damage to the floor of the orbit. It is difficult to conceive of this process being shattered, but it may be dislocated from its position and dragged downward or wedged upward by a fracture occurring in the vertical plate, produced by a force applied toward the median line. In such instances the sight is imperilled, because of commonly resulting opacity of the vitreous humor, if for no actual evisceration of the eye. The vertical portion of the bone may be fractured by a violent blow, which at the same time shatters the body of the superior maxilla covering it. The horizontal plate may become broken by any force that will produce injuries to the palatal processes of the superior maxilla, such as smashes of the face, gunshot wounds, or falls upon pipes or sticks held in the mouth. The position of the bone, forming as it does the lateral wall and part of the floor of the nasal cavity, necessarily limits to the nasal passage the deformity following fracture. The damage inflicted may be excessive and result in considerable narrowing of the canal, or in cases of necrosis, in actual enlargement. Any bending of the bone inward drives the turbinated bodies against the septum. The middle and inferior turbinated bodies generally share the fracture. Deformity resulting from fracture of the horizontal plate in the lower half of the vertical portion may be demonstrated by intranasal examination. Fractures and their deformities above the middle half and including the orbital plate are extremely difficult of demonstration unless the injury be compound. In this case the finger or examining instrument may be made to impinge upon the floor of the orbit. The lines of fracture are variable.

The symptoms are those accompanying fracture elsewhere.

The diagnosis depends upon the ability of the surgeon to demonstrate deformity or crepitation.

The treatment should be similar to that accorded severe fractures of the superior maxilla. Restoration of normal relations is exceedingly difficult. The fragments of the bone are so fragile that they show a decided tendency to necrose and disappear by diapyesis. It is well in compound fractures to remove those pieces entirely detached and forestall the suppuration. Apparatus for bracing the floor and lateral wall may be employed to maintain reduction, yet in cases in which deformity is slight the fragments have a tendency to remain in position when placed there. This is true particularly of any subsequent inward displacement. In extensive fragmentation of this bone and superior maxilla I would recommend the removal of all detached fragments possible, particularly when a compound fracture exists. Should the overlying soft parts be lacerated, it will be well to incise further, if necessary, to facilitate the operation. Drainage once established through the nose and mouth will insure subsequent speedy and kind healing of the external wound. Whatever linear cicatrices result would seem preferable to the foul and tedious suppuration to which without this interference the patient is surely doomed.

Fracture of the inferior turbinated bodies may be dismissed with a word or two. The possibility of injuries to these bones has been mentioned above. They are rarely damaged singly.

The Lacrymal Bones are very rarely subjected to fracture, owing to their protected position. If the articulation of these bones be recalled, it will become evident that the liability to damage depends materially on force transmitted through the superior maxilla and the frontal. It may be said that injuries are never inflicted from association with the inferior turbinated or the os planum of the ethmoid.

In no wise are subjects better illustrated than by presentation of cases bearing upon them. I am so fortunate as to have notes bearing on cases which embrace fractures of nearly all the facial bones.

Case I.—Joseph G——, Cornish boy, aged twelve years. An active youth and an iron miner by occupation. The case was first seen by me in December, 1896, in consultation with Dr. G. G. Barnett, of Ishpeming. The boy was underground, standing near a tramway. A car loaded with timber was passing and one of the projecting beams struck him on the right side of the face, causing a double symmetrical compound fracture of the inferior maxilla with a decided dislocation of the anterior fragment to the left. Hemorrhage was profuse. Examination showed downward and nearly transverse double lines of fracture in front of the last molar tooth, compounded within the mouth on each side. The deformity was corrected by digital manipulation of the parts, when the hemorrhage ceased. It became evident that the lines of fracture were slightly bevelled alike on either side, causing a tendency to left lateral recurring displacement of the forward fragment. The teeth were not markedly loosened. No attempt was made at wiring them, because it was thought that proper external splints to retain correctly the jaw against its fellow would meet all the requirements of the case.

Accordingly the jaw was carried up against the upper and placed in a well-fitting position, the patient assisting by testifying that his teeth felt right. A well-padded splint of thick cardboard, moulded by notching where necessary, was applied and firmly secured by free bandaging. The patient was fed through the postdental space. Subsequent suppuration demonstrated the existence of splinters that had escaped detection. The toilet of the mouth was well cared for. The boy made a good recovery without the formation of excessive callus, in spite of the fact that his chief amusement consisted in endeavoring constantly to loosen the dressings by efforts to move the jaw as much as possible, without giving himself unnecessary pain. Six months after the injury the jaw was strong and well, and to the eye presented no deformity. Digital examination revealed a slight projection of the right inner edge of the anterior fragment and a corresponding projection of the left inner edge of the posterior fragment on the other side. The rotation was slight, however, and proper approximation of the teeth and jaws was not interfered with.

Case II.—In June, 1896, John W——, an English boy, aged eleven years, was driving with his father in a light road wagon. The horse became frightened and ran, dragging the wagon and occupants over an abandoned portion of sunken road which had been filled with large rocks. The father was thrown out. The boy was thrown from the seat into the bottom of the wagon in such a way that his face was repeatedly jammed with great violence against the iron foot rail. The patient was brought to the hospital and anæsthetized. After the face had been cleaned the following appearance was presented: The entire left half of the face was swollen and ecchymotic, the eyeball protruded markedly, and the pupil was widely dilated. Beginning at the mouth and extending vertically upward to the left ala of the nose was a complete laceration of the soft parts. Palpation showed that the left half of the superior maxilla and the nasal process thereof, the left malar, and both nasal bones were badly comminuted. Separation of the lips of the laceration revealed the apex of an angle of depressed fracture of the body of the superior maxilla. This angle, one-half an inch in width at the apex and beginning at a point three-quarters of an inch above the alveolar border over the left second bicuspid tooth, continued upward with rapid diverging sides so as to include the left nasal process, inferior turbinated, vertical portion of the palate, both nasal bones, left malar, and zygoma.

The finger introduced into this enormous cavity impinged against broken detached fragments and pulpified tissue. The finger carried upward to the orbit was able to detect fracture in the floor of the orbit. The lacrymal and superior maxillary and ethmoidal portions were broken and driven slightly upward and inward, so as to present a flattened instead of a convex outline to the finger. The maxillary sinus was completely obliterated. No damage was done to the alveolar border. Damage to the cribriform plate was suspected, as all portions of the nasal bones high up were shattered. There was no marked deformity of the nose or face at the time, because of the swelling. Hemorrhage was not severe.

An incision was made through the skin and tissues, beginning at a point below the inner canthus of the left eye and carried down along the border of the nose, to terminate in the summit of the laceration. The skin was reflected and all entirely detached fragments were removed, some twenty in number. Those that seemed thoroughly adherent were allowed to remain in position, in the hope that they would retain their vitality. The nasal bones and the left nasal process of the superior maxilla were straightened by external moulding, aided by the internal counterpressure of a director and a finger within the cavity. Nothing was done to correct the orbital displacement. The laceration and incision in the soft parts were sutured, and drainage was established through the nostril, nares, and mouth, under the upper lip. Gauze strips packed through either of these openings met in the large general cavity. The malar and zygoma, though fractured, were not displaced, so they were not molested. The subsequent aspect of the case showed conclusively that all fragments should have been removed in this instance. For weeks there was constant and offensive discharge backward through the nares and externally through the nostril and beneath the lip. Some fragments of the right nasal bone necrosed and formed an abscess which pointed externally. This was accordingly incised and drained. The incision and laceration healed kindly by first intention. The wound was dressed daily for more than thirty days. The discharge gradually diminished and the enormous cavity slowly filled. The left eye receded to almost its normal position. Its motions were not impaired. The pupil remained dilated and irresponsive to light. The sight of the eye was irrevocably lost. Dr. Andrus, of Ishpeming, kindly made an ophthalmoscopic examination of the eye soon after the injury, and reported that a dense opacity of the vitreous completely masked the fundus. One year after the accident the boy presented the following appearance: The nose was of natural vertical contour. The left aspect of the face, including the left side of the nose and the portion of the cheek lying below the orbit, was slightly flattened and depressed. The malar prominence showed a slight dipping off toward the depression. The zygomatic area was like its opposite fellow. The left nasal passage was large and roomy and covered with healthy mucous membrane. The cicatrix of the incision and laceration was not noticeable, and indeed scarcely visible.

In earlier youth this boy had hip-joint disease, which left him a cripple and impaired his general health. The last misfortune does not, however, seem to have materially diminished his vigor.

133 North Spruce Street.

Epistaxis, when rebellious to other methods, may be arrested by making revulsion over the liver region by means of actual cautery, fluid vesicatories, tincture of iodine, or hot compresses.—August Latour, *Journal de Médecine*, January 10, 1898.

A REVIEW OF SOME OF THE CASES IN WHICH INSANE PERSONS HAVE BEEN RELEASED FROM CUSTODY BY THE COURTS WITHIN THE PAST SIX YEARS.

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Occasionally we see in the secular papers, perhaps with startling headlines, a long account of the liberation by the courts of "another sane person" from an asylum. The conservative physician reads these accounts with a smile and a grain of salt, perhaps congratulating himself that he was not one of the principals in the original commitment of the patient to the asylum, and often speculating as to the subsequent history of these patients after their liberation. It is to satisfy the physician's natural curiosity as to the future of patients discharged from custody by the courts rather than because of a feeling that justification is required by the custodians for so-called "illegal" detention of such patients, that I have written up the following cases, comprising all the male patients who have been discharged by the courts from the hospital with which I have been connected during the past six years.

In regard to so-called "illegal" detention of sane persons in hospitals for the insane in this State, a former member of the State commission in lunacy once remarked to me that in all of his experience he had never met with such a case. All the subjects of the following cases were properly committed and properly detained, and the result, even thus early, has clearly proved that they should not have been discharged. The triumphant acclamation of the court-room throng at the popular verdict of a jury of "not insane" has been followed in every case by unfortunate results that should have been avoided. The wide circulation which the newspapers gave to the trials of these cases has been supplemented in some of them by equally wide publication with startling headlines when the results have been direful; but usually the later history of these cases is not known. Some lessons may be learned from the later history; but, alas! the physician, who least needs the lessons, is the only one with whom we can with propriety discuss them, for we do not wish to make enemies or tread upon the mighty skirts of the law.

Case I.—Mr. W——, aged seventy-three years, case of senile dementia of four years' duration, was admitted March 22, 1893, and discharged April 18, 1893, on a writ of *habeas corpus*. A verbal return to the writ was made to the judge that the patient was still insane; that the writ was obtained by the persons who placed him in the hospital, who had the power to take him out without such proceedings, and that the institution would have made no objection to their doing so.

In answer to questions, the medical superintendent stated that Mr. W—— suffered from senile dementia in a mild form; that he was admitted in an exacerbation of his disease in which he was exalted in his ideas, over-confident in his abilities, confused in his recollections; had hallucinations of sight, was garrulous, becoming quickly incoherent in conversation; had amnesia, partial aphasia, and was in poor general health; that he had improved in many respects, but showed still some lack of memory of recent events, delusions of conspiracy, and general mental enfeeblement. The doctor further expressed as his opinion that the patient was not likely to injure himself or others, but should not burden himself with the cares of business, and that he might live outside safely if looked after by his friends. The patient was therefore discharged, and left the institution as improved.

This case simply illustrates a lack of knowledge on the part of the friends as to the *modus operandi* of removing a patient from a private hospital for the insane.

Case II.—The following case is a very different one: Mr. S——, Hebrew, merchant, aged forty-three years, single; was admitted in 1893, suffering from symptoms of general paresis in the first stage, these symptoms being entirely obvious to a physician, but of such a nature as to be unconvincing to a lay sheriff's jury, and the patient was discharged after a sensational contest in court.

The patient was committed in the usual way, on the sworn certificate of two physicians, duly approved by a judge of a court of record. His mother and one brother were insane, and there was a history of dissipation and worry as exciting causes. The brother of the patient stated that for a month he had been careless and forgetful in business contracts, and extravagant in his ideas of business management. He would order made in the factory several times the quantity of goods needed; would make contracts which his brothers would have to revoke; overdrew his bank account, and would seem to think that he had plenty of money in the bank, although told that such was not the case; and finally wished to marrry a woman of another faith, with whom he had been living for several years.

On admission the patient appreciated where he was and was able to talk coherently, but he presented nearly all of the somatic and psychic symptoms of general paresis in an early stage. There was general exaltation of the cœnæsthesis, as indicated especially by exhilaration of mind and a careless indifference to his present condition and future outlook. His pupils were myotic, knee jerks lively, tongue and muscles about the mouth slightly tremulous; he had slight hesitancy in speech, irritability, and grandiose ideas of his abilities. It was brought out in the testimony, and became a matter of public record, that the patient's entire business methods had undergone a change. From being a careful, conservative business man he had become careless, indifferent, and extravagant in his methods, and frequently involved the credit and standing of the firm by overdrawing his accounts, making extravagant purchases of unnecessary goods, etc. He also employed extra clerks and others connected with his business when the times were dull and the usual custom was to discharge some of those not required. In short, he acted as though he had millions at his command and unlimited power. On the day of his commitment he said: "I am the king, and the biggest man in the trade." He would sit or lie on a sofa abstractedly for hours at a time at his place of business, staring into vacancy and not speaking to any one, and when questioned about necessary matters showed great irritability and lack of appreciation of his duties as a member of the firm. He abstracted money from the envelopes containing the pay of the workgirls and drew checks on blank paper, paying the same without making a record of it in the check book. His chief *faux pas* were his engagement to be married to a young woman of a different religious faith and a purchase of $31,000 worth of goods at one time at an auction, such purchase being many times in excess of the usual and an exhibition of poor judgment on the part of the patient.

In court the patient conducted himself quietly until put upon the stand. As a witness he demeaned himself well in the direct examination, but in the cross-examination he showed great irritability and lack of self-control; was very abusive to the plaintiff's attorney and refused to answer many questions, even for the benefit of the jury and the commission, when those questions were addressed to him by the lawyer. He showed also by his replies that he had ideas of grandeur in reference to his abilities, and an apparent lack of appreciation of the impression his conduct might have on the jury, prejudicial to himself. At one time he feigned sleep, and claimed he did not hear the question propounded. His replies were childish and frequently made as if he thought them witty or smart, when they were often the reverse. When addressed by a juryman he made several replies. Altogether his conduct on the stand under cross-examination was prejudicial to him, and even occasioned *sotto-voce* remarks from outsiders within the writer's hearing that he must be insane.

The case dragged along through seven meetings of the court, and two days before the patient's release he made a homicidal attack in the hospital on an attendant with whom he was playing billiards. Four expert witnesses testified that the patient was suffering from general paresis in the first stage, and that he was incapable of managing himself or his estate. One expert witness of great repute examined him, with a view to testifying in his behalf; but, finding him suffering from paresis, declined to testify, so that no expert testimony was offered by the defence. In spite of these facts, the jury found a verdict that Mr. S—— was of sound mind. This verdict was a great surprise to medical men conversant with the case, but it met with great popular favor.

The newspapers reported that he was married to his *fiancée* the evening of the day of his discharge, and also that he expressed himself as intending to give his business his active personal attention.

The case was given the greatest notoriety, and it was thought that the jury and the mass of the people were firmly convinced that a sane Jew had been locked up in a lunatic asylum by his brother, to keep him from marrying a Christian.

The following quotation from *The Sun* relates briefly the sequel:

"A dissolution of partnership followed, and—— started a new concern. He was unsuccessful from the start and sunk his entire fortune in the venture. His wife clung to him through all of his troubles, and it was not long before she had to admit that his mind was affected. He was more childish than violent, however, and his wife would not hear of his being committed to an institution. About six weeks ago, however, he became so bad that she applied to Judge McAdam to have him sent to an asylum. He was taken to Middletown, where he failed rapidly and died on Friday."

The next case, Case III., is an illustration of gross ingratitude on the part of a senile dement, and serves rather as a lesson to ourselves than anything else.

Mr. K—— was admitted in 1893, suffering from symptoms of senile dementia. His age was sixty-nine years; he was single, born in Germany, moulder by occupation; of intemperate habits and a confirmed miser. He had led the life of a hermit for twenty years, having been during that time eccentric and peculiar, and a woman hater. Owing to his isolation in a hut on Gerard Avenue and his miserly and peculiar habits, he was frequently annoyed by boys and mischievous men; and it was for an act of violence on his part, in retaliation for these annoyances, that he was arrested and taken to Bellevue. A fellow employee, acting in the capacity of friend and knowing him to have considerable money secreted, obtained his commitment to a private hospital at a fair rate of compensation.

On admission, his person and clothing were found to be in an exceedingly filthy condition, and an entire new wardrobe was purchased for him by the hospital.

The patient was very filthy in his habits; his memory for recent events was poor; he was childish and he exhibited weakness of intellect except on the one

point of hoarding money. He said he had the monopoly in the manufacture of patterns and moulds for making confectionery, and acknowledged that he was worth about $35,000. He said he was arrested and taken to Bellevue to be killed.

He told me that he was born in a small village in Baden, Germany; that he never knew who his parents were; that he was brought up by a woman who treated him very cruelly; that he ran away from her at the age of seventeen to France; that his sweetheart followed him and lent him money; that he subsequently abandoned her and came to this country. Here he served in the army during our civil war, was wounded in the arm, and was imprisoned at Lynchburg, Macon, and Andersonville. He exhibited delusions in regard to his army life. For example, he said people were constantly trying to get his money; that at the skirmish of Wilson's Creek the orderly sergeant and three other members of his own company attempted his life for $80, which they knew he had on his person; and that even Captain Granger, of his regiment, agreed with the Confederate forces to cover a certain spot with sharpshooters, in order that he might send soldiers who had money to that spot for them to shoot at and subsequently rob. The patient intimated, however, that he was too quick for them; saw the opening and refused to go to the spot; and assured me that he noticed that a man who was sent in his place was instantly killed. These ideas of conspiracy to rob him and even to murder him for his money were firmly fixed in his mind; and when proceedings *de lunatico inquirendo* were instituted in order to enable a committee to take such care of him as he seemed indisposed to take of himself he became exceedingly apprehensive. He said he would rather be out of the world than deprived of his money; that he intended to cut down expenses in eating; that a little soup once a day would be enough for him; that a man is no use without money; and that if he did not get it back he would quit eating altogether. He said further that if he "were not taken out a free man, he would be taken out a corpse;" that he would not eat from that time forward.

Six weeks after admission, after a protracted and contested trial, the patient was declared by the sheriff's jury to be sane and competent to manage his affairs, although seven experts of known ability testified to his insanity and to his incompetence and inability to take care of his own affairs. The patient himself had become so contented in his luxurious surroundings, however, that it was not until two weeks later that he could be induced to leave. He exhibited a marked confidence in the institution and its officers and employees, and appeared to be grateful for the considerable improvement which he had made; but up to the present time no pecuniary remuneration has been received from him, and he resumed his former methods of living.

Case IV. is one of paranoia in a young man of wealthy family, in which there were a conflict of expert testimony and a consequent confusing of the jury, leading to the patient's discharge as not insane and subsequent dire results.

Mr. T——, aged thirty-two years, single, no occupation; temperate habits; of strong neurotic heredity. Had made four attempts at suicide prior to admission, and had also been confined in two other hospitals for the insane for varying periods. His maternal grandmother, aunt, and mother were peculiar and eccentric. The patient himself had been peculiar and eccentric since childhood, and had never been able to do anything well in the way of study or work. He was subject to violent outbursts of temper, and had made an engagement of marriage with a lady considerably older than himself, before this lady had become divorced from her husband.

The medical certificates were largely based in this case upon facts relating to the conduct of the patient while confined in institutions prior to the commitment against which proceedings were brought. One of the certificates stated that the patient had always been singular in conduct and suspicious and irritable in manner; that he abused and denounced the body of his father in the room in which his father lay dead; that he brought a number of lawsuits against the trustees of his father's estate; that he was constantly changing his occupation; that he had rudimentary delusions of persecution by his best friends: that on one occasion he waited with a revolver, intending to kill one of his friends whom he believed to be an enemy; that he had on several occasions attempted suicide by shooting and by narcotic poisons; and that he had lately been planning marriage with a married woman.

His history from one of the institutions in which he had been a patient stated that he at one time carried a sword cane to defend himself from attacks that might be made upon him, suspecting a former friend of entertaining designs against him; and he believed his incarceration to be the result of a plot. On one occasion he said that he had a strange sensation, as of a veil drawn over his mind or as if a tape was drawn tightly around his brain inside the skull. He believed that his roommate did various things to test him as to his sanity, but was convinced that this roommate was only the agent of a prominent official at Washington, who was a distant connection of his own family. At one time, he declared, after a quarrel with a man who had long been a personal friend and with whom he at the time was living, that he retired to his room, barricaded his door, drew a pistol, and waited for several hours for his friend to come and attack him, and that had he done this he would have shot him; that he had a perfect right to do so, and that this act would have been defensible both from a moral and legal standpoint.

On admission, he was thoroughly on his guard under medical examination, and not inclined to answer any questions directly. When urged to give his side of the case he talked incoherently about not saying or doing anything that was not reasoning correctly. He talked in an exaggerated and eccentric manner, showing peculiarity in manner of smiling, posing, using his eyes, and emphasizing his words. His pupils were dilated, his eyes somewhat staring, and there was some asymmetry of the face.

Proceedings *de lunatico inquirendo* were begun less than a week after his commitment, and, as the patient could command considerable money, he was enabled to obtain shrewd counsel, who instructed him to allow no medical examination whatever except by such physicians as should be sent or accompanied by his counsel. When the case came to trial his counsel suceeded in eliminating from the testimony the evidence of physicians who had treated him in hospitals, on the ground that they were his family physicians and could not reveal the secrets entrusted to them. The opposing counsel did not take the trouble to overcome this technical point, and did not present expert witnesses. A point was made with the jury by the patient's counsel that one of the men who accompanied him to the hospital owed him considerable money; and he tried to show a motive for the patient's commitment. It was not, however, owing to the strength of the case of the defendant so much as to the weakness of the case of the plaintiff that the verdict of not insane was obtained after a protrated trial, lasting several days.

Immediately following the patient's release by the court he instituted proceedings, suing his brother for $50,000 for malicious persecution. Some time after that he married the lady to whom he was engaged, who subsequently bore him a son.

In July, 1897, application for his readmission was made, on behalf of the wife, by the physicians who made out his original commitment. The case was declined, and he was sent to another institution. The certificate of his commitment there stated that he was delusional, believing that he had been unjustly dealt with; that he believed his wife a princess, though unable to explain why; that he was excitable, suspicious, violent, and dangerous; that he said he had clenched his wife by the throat until she told him things he wanted to know; and that he had attempted suicide several times by inhaling gas and by taking lethal doses of chloral and morphine; further that he grew confused in attempting to carry on a connected conversation, would enter into litigation on the smallest provocation, and spoke obscenely of his wife's daughter by her first husband. Objectively, it was noticed that he had a peculiar staring expression, "wild" fitly describing it; that when alone he was preoccupied, but when addressed quickly collected himself, using good language; but his manner, speech, and expression seemed studied and stilted. He slept well; his bowels were said to be constipated, tongue coated, and breath foul—a chronic condition. Shortly after his commitment his wife took up her residence near the sanatorium and visited him nearly every day; and an account of his condition during his stay there has been furnished me by the superintendent. While there he exhibited exalted ideas and an exaggerated manner: at one time was excitable and at another apathetic, taking little interest in what transpired about him. The daily visits of his wife seemed to perturb him considerably. On the 23d of August, 1897, he attempted suicide by projecting himself head first against the iron bars of his window, sustaining a scalp wound which required sixteen stitches. On October 22d, his condition was such that *de lunatico* proceedings were again instituted, this time by his wife; no difficulty was found in obtaining a verdict of incompetency, and his wife was appointed his committee. She, however, insisted on removing him from the sanatorium, and on November 30th the New York papers contained a long article, to the effect that he had made a violent assault on his valet, attacking him with an axe and inflicting several severe wounds of the head. He was again examined and committed to a hospital for the insane, where he now remains.

Had the proper verdict that the patient was insane and incompetent been found in the first instance, he would have been cared for and protected and the census would not have been increased by the addition of another presumably degenerate offspring.

Case V.—Mr. C——, a man of gentle breeding, good education, and some property, had lived the pace and developed general paresis; in 1895 he was treated scientifically by a prominent alienist of New York. After a few months' mild excitement he improved to such an extent as to resume his customary position in life; but in the spring of 1897 he again became excitable, wrote incoherent letters, threatened acts of violence, and was reckless in regard to his money affairs. He deposited considerable sums of money and articles of jewelry at various places of business in New York: *e.g.*, left his watch at a theatre; a valuable ring at a jewelry store; a solid gold matchbox at a cigar store; various sums of money at cafés and with prominent dealers in flowers, fancy groceries, etc.

It was not, however, until the fall of 1897 that, on account of an assault on a fellow clubman at one of the clubs in New York, he was arrested and afterward committed for treatment, the responsibility for his commitment resting partly on his father, with whom he was not on very friendly terms, and on a reputable firm of attorneys.

While under treatment he exhibited both the psychic and somatic symptoms of paresis. He was at first exceedingly irritable and excitable and violent, exalted in manner and speech like a person exhilarated with wine, expansive in his ideas, extremely talkative, wrote innumerable letters to public men and comparative strangers, expressed many schemes of an impracticable nature, made unreasonable demands, and talked very freely about his most private affairs. The knee jerks were absent; the pupils reacted to distance but not to light; there was tremor of the tongue and muscles about the mouth and eyes, and in excitement there was slight halting at labials and linguals in speech. The patient said he never felt so well in his life; that he could write a million letters a minute, and wanted to sing at one of the institution concerts. He was controlled with tact and the employment of large doses of sedatives, hydropathic treatment, and moderate exercise; and after about five or six weeks the symptoms subsided, and a remission seemed about to be inaugurated. At this time, however, his attorneys instituted *de lunatico* proceedings. The patient at that time would have been willing to compromise his affairs, allowing some authorized person to manage them entirely, provided he was given liberty of person, but his attorneys did not then recognize the advisability of this. All the tangible symptoms that were evident when the proceedings were instituted were the grandiloquent and self-satisfied air, the absence of knee jerks, the Argyll-Robertson pupils, and slight enfeeblement of mind. He was given an opportunity to obtain counsel and allowed to go to New York as frequently as he chose with an attendant, to consult his counsel and to obtain testimony in his behalf. His attorneys attempted to prove that his symptoms and conduct had been entirely due to alcohol. His condition at the time of the trial being one of remission of his disease, it was difficult to prove to a jury that an organic disease and not alcoholism had really existed. The case was therefore compromised by the attorneys before it went to the jury, and the court discharged the patient on a technicality.

The effect of the trial and publicity was very unfortunate and disastrous to the patient. He gradually developed a condition of profound depression; became sleepless, lost appetite, and found it exhausting to take even short walks; and a few weeks after leaving the hospital he attempted suicide by shooting himself in the head.

Had the entire case been managed by physicians without (as it proved) ill-advised legal intervention, is it not possible that a less tragic result would have been attained?

If the constitution did not restrict us to jury trial, some of the evil results of the present system in *habeas corpus* and *de lunatico* cases might, in my judgment, be obviated by trials before commissions comprised of two or three medical men associated with a judge.

However, possibly in the near future some improvement may be obtained by the proposed method of having experts appointed by the court, the idea being that their opinion would be unprejudiced and have greater weight with the jury. But, whatever method is adopted, the importance of unprejudiced testimony by medical men who have cases long under observation cannot be overestimated and may usually be taken as a safe guide and of assistance in the formation of the opinion of associate experts; but no one can fathom the depths of the layman's mind in medical matters.

Blepharitis Marginalis.—Hydrogen dioxide softens the crusts along the edge of the eyelids. Dilute the twelve-volume solution one-half, to avoid pain from contact with the conjunctiva.—S. C. Ayres.

Pneumonia.—Wet sheet frequently renewed when there is hyperpyrexia.—T. Lauder Brunton.

CASES OF CHRONIC AND ACUTE INTESTINAL OBSTRUCTION SUBJECTED TO OPERATION.[1]

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In publishing this series of consecutive cases, which I do not hesitate to say constitute the blackest page in my surgical experience, I am influenced by several motives. One is that the series includes several cases of sufficient surgical interest to be placed on record. The second is that, though the record as regards recoveries is very bad, I think such cases should be published. We read constantly in the medical journals reports of isolated cases of operation for acute intestinal obstruction, with or without septic peritonitis; and the cases are almost always successful ones. I believe that the unsuccessful cases, occurring in general surgical practice all over the country and not published, outnumber the successful ones fifty to one, and the patients who die unrelieved and the cause of whose death is marked on the certificate as inflammation of the bowels are still more numerous. And this brings me to my third reason for publishing this record. Though an Eastern man, I am not one of those who decry either country practitioners or Western doctors, for I know that both classes have given us some of the brightest stars in medical science. No man who has read the splendid tributes of Sir Walter Scott in the "Surgeon's Daughter," of Trollope in "Dr. Thorn," and of Ian MacLaren in the "Bonny Briar Bush," can afford to sneer at the country doctor. But nevertheless it does seem to me that this subject of intestinal obstruction and the absolute necessity of early operative interference is not sufficiently recognized in the West. During a very active service of ten years in New York, chiefly as attending surgeon to Bellevue and St. Luke's and assistant surgeon to Roosevelt Hospital, I got the impression that most physicians there recognized the serious character of intestinal obstruction, and, as soon as they found that the obstruction was organic in character, urged operation. In California I have found it different. There are a number of reasons for this. Chief among these are two. In the first place, the people are, on the whole, less conversant with scientific matters and have consequently a greater dread of the knife. Then a physician incurs a greater responsibility in advising operation. If the patient dies unrelieved, the cause was "inflammation of the bowels," and is regarded as an act of God, for which no one is to blame; while if an operation was advised and the patient nevertheless dies, why, it was a "butchery," and the physician who advised the operation is held to be an accessory.

My plea, therefore, is for an earlier recognition of cases of organic obstruction, in which no sane man can expect that treatment by drugs can be of any avail, and for operative treatment before, in chronic cases, the patient is so reduced that any operation must be fatal, and before, in acute cases, intestinal paralysis, gangrene of the bowel, or septic peritonitis has made a fatal result almost inevitable.

In the following report I have separated the cases of obstruction at or above the pylorus from those of the small and large intestine, and include in the former one of pharyngeal obstruction, while in the latter I include one case of strangulated incomplete inguinal hernia in a woman, causing acute intestinal obstruction without evidence of the seat of the obstruction before operation. The cases, however, include all, except those of ordinary strangulated hernia, within the dates given.

[1] This article was written for publication shortly before the author's lamented death.

I. Operations for Obstruction at or above the Pylorus.—Case I.—Stricture of pylorus, due to gastric ulcer; gastro-enterostomy, August 5, 1893; recovery.

R. L——, aged thirty-six, American, single. Previous history: Since childhood, acid dyspepsia, with frequent vomiting and pain in epigastrium. Long intervals of complete freedom, with sudden recurrence of attacks. Fifteen months ago, almost fatal hemorrhage from stomach. Before and after this, frequent attacks of intense pain in epigastrium, when patient would roll on floor in agony for hours. When first seen, one year ago, emaciated, skin and mouth dry, vomited often, frequent attacks of intense pain as above. Ordered peptonized-milk diet, rest, Carlsbad salts (one drachm, t.i.d.). Patient improved much, gained flesh and strength, severe pain ceased, vomiting less frequent. About two months ago began to emaciate; vomiting more frequent and in large quantities. At present emaciation excessive; vomits almost every day intensely acid fluid from two quarts upward; no acute pain; mouth and skin dry; constipation; digestion so slow that curdled milk is vomited eight or ten hours after ingestion; constant thirst; urine scanty, moderate amount of albumin, acid; specific gravity, 1.022. Physical examination shows great distention of stomach. Diagnosis, pyloric stenosis, due to cicatricial contraction.

August 4th, 4 P.M., stomach washed out with boric-acid solution.

August 5th, stomach and bowels having been thoroughly emptied, ether, usual antiseptic precautions. Incision from xiphoid appendix to umbilicus. Stomach much dilated; extends, though empty, to navel. Pylorus attached to liver, colon, and surrounding omentum by old adhesions, rendering Heineke's pyloroplasty difficult or impossible. Adhesions and thickening of mesentery of colon render Hacker's operation unadvisable. Wölfler's operation performed. Anastomosis about one and one-half inches wide; about fifty Lembert-Czerny silk sutures used. Abdominal incision closed with deep and superficial catgut sutures. Occlusive dressing.

December 30th, no general or local reaction followed operation.

On removal of dressing two weeks later, wound healed *per primam*, except small strip where skin sutures had separated and which healed rapidly. Nutrient enemata during first five days; then liquid food, gradually passing to solid. At first vomiting every two or three days, usually voluntary, to relieve gastric distress, and vomitus much less in quantity; then not more than once a week, with constant gain in flesh, health, and strength. When last seen, about one week ago, no vomiting or distress for more than six weeks, general health excellent, works hard and rides long distances, appetite good, and eats anything. Has gained more than forty pounds.

October, 1896, recent reports indicate that patient is in good health.

It may be of interest to mention that exactly the same operation was performed on a dog at the same time, and when it was accidentally poisoned about two years later the opening between the stomach and the intestine showed absolutely no contraction.

Case II.—Carcinoma of pylorus; gastro-enterostomy; recovery.

J. D. M——, aged fifty-three, October 15, 1894. Patient first seen, September 4, 1894. No cancer in family. During past three years constant dyspepsia; severe pain in epigastrium, especially after eating; frequent vomiting, progressive emaciation, loss of strength, no hemorrhage from stomach. Examination: Much emaciated, cachectic. No tumor detected on examination. Ordered lavage of stomach twice daily, milk diet, etc.

October 13th, under lavage and milk diet, vomiting has ceased, pain undiminished; loss of weight continuous, but less rapid (the week before last visit lost over eight pounds; since has lost one and one-half pounds a week). Examination shows a freely movable tumor in right hypochondrium.

October 14th, examination of contents of stomach (Boas' test) shows, after test meal, complete absence of HCl.

October 15th, bowels emptied. Stomach washed out with saturated solution of boric acid just before operation. Usual aseptic precautions. Ether. Median incision. Scirrhus carcinoma of pylorus, involving about two-thirds of stomach. Mesenteric glands involved. Resection being impracticable, selected a coil of jejunum as near duodenum as possible and made a gastro-enterostomy, with anterior surface of cœliac end of stomach, using Murphy button. Actual insertion of button occupied not more than five minutes, but escape of air at one side seemed to require insertion of about six interrupted silk sutures. Abdominal incision closed with silver wire buried sutures and continuous silk sutures of skin. Occlusive dressing.

November 1st, no local or general reaction occurred. After second day patient was able to take liquid and later solid food, without pain or vomiting. Dressing and silk sutures removed after fourteen days. Primary union. Patient has gained flesh and strength, and states that he feels better than for several years.

Final note: The patient died some three months later of general carcinomatous cachexia, but was able to eat and digest solid food to the last without pain or vomiting. The Murphy button, though carefully looked for, was never found, and no autopsy could be obtained.

It is of interest to mention that, just at the time he left the hospital, his wife presented herself, with a rapidly growing round-cell sarcoma involving the whole right upper maxilla. I excised the upper jaw and she made a good recovery, but metastatic growths appeared in the lungs within a few weeks, and she died, without local recurrence, about the same time as her husband. One such case is, of course, no evidence, but, taken in connection with a series of similar cases which I reported some years ago to the New York Surgical Society, it is difficult to avoid the idea of a *contagium vivum* and direct infection.

Case III.—J. E——, aged forty-five, Spanish. December 4, 1896. Gastrostomy for carcinoma of œsophagus. Patient has suffered for some months from difficulty in swallowing. Has had several severe hemorrhages from the œsophagus. Has lately been able to swallow only small quantities of fluid, which is frequently regurgitated. Suffers great pain, pointing to the level of the bifurcation of the trachea, and auscultation during the act of swallowing indicates the same level. No bougie was passed, for fear of hemorrhage. Operation, ether, gastrostomy by Witzel's method. Patient fed by rectum for three days, after which food was introduced by tube. No general or local reaction, and wound healed *per primam*. A month after operation patient was in excellent condition, having gained strength and weight; no pain or hemorrhage. Is unable to swallow, and takes all nourishment through tube.

June 1, 1896, about six weeks ago learned that patient, finding himself able to swallow some food, insisted, in spite of his physician's advice, on removing the tube some days previously; when reported, could no longer swallow and was apparently dying. No leakage had occurred at any time.

Final report: Am told that patient died of inanition about one week later.

Case IV.—Miss L. W——, aged about thirty. Cicatricial contracture of pylorus; pyloroplasty. Patient has suffered from two to three years from symptoms of gastric ulcer; has had frequent hemorrhages, constant and severe pain, and vomiting. When first seen, the day before operation, was very feeble and much emaciated. Could retain only a little barley water. Had retained no food for three weeks. Operation had been urged for some time by Dr. Otto, but refused. Ether. Median incision. An impermeable stricture of the pylorus was found. Pyloroplasty by Heineke-Mikulicz's method was performed, fine silk sutures being used. Stricture was due to a healed ulcer. Patient did not rally after the operation, and died twelve hours later of collapse.

Case V.—Carcinoma of pharynx, gastrostomy, and laryngotomy. F. J——, aged forty-five, single. Previously healthy. Patient noticed a small growth in right side of pharynx three months ago. This has grown rapidly; has recently become ulcerated and extremely painful, interfering greatly with swallowing. Has lost much flesh and strength.

June 18, 1896, examination: Patient very weak and emaciated, and almost unable to swallow, taking only very small amount of liquid food, most of which escapes through the nostrils. An ulcerated new growth occupies the whole right side of the pharynx, extending beyond the median line, involving the tonsil and pillars of the pharynx and right ramus of the inferior maxilla. Both deep and superficial lymphatic glands on right of neck much enlarged. Growth extends down to and involves the larynx, which is almost immovable, and respiration is much affected. Ether. Gastrostomy by Frank's method. Stomach opened at once and nourishment given a few hours later. No leakage occurred, except to a very slight extent, on removing the tube. No reaction and wound healed *per primam*. Took nourishment freely and improved for a time, but three weeks later increasing dyspnœa required laryngotomy. Died from the progress of the disease two days later.

Case VI.—Miss S. Y——, aged eighteen, American. October 9, 1896. Ulcer of stomach, cicatricial contraction of pylorus; gastro-enterostomy. Since childhood, subject to severe attacks of pain in region of pylorus, accompanied by vomiting. Never vomited blood. Pain often so severe that patient would roll on floor in agony. Attacks lasted one to three days; occurred sometimes once a month, or with several months' intermission. Between the attacks, only moderate tenderness over pylorus. Menstruation regular and normal. One week ago patient had similar attack, which has continued to date. Pain partly relieved by moderate doses of morphine, but all attempts to move bowels by enema have failed. On examination, patient thin and poorly nourished, is throwing herself around in bed, screaming with pain, making thorough examination impossible. Pain especially severe in right hypochondrium, where there is great tenderness on pressure. Abdomen moderately distended. No escape of fæces or flatus since attack commenced. Frequent vomiting of apparently pure bile, excited even by a spoonful of warm water. Passes water freely. Pulse, 110; temperature normal. Gave morphine, one-fourth grain, to quiet patient and allow examination. Seen three hours later, when a small, hard movable mass was felt in region of pylorus. Percussion showed stomach dilated to level of umbilicus. Diagnosis of cicatricial contraction of pylorus, due to ulcer. Urged immediate removal to hospital and operation, but parents declined.

October 10th, patient entered hospital. Condition as before, but vomiting more frequent; hiccough; pulse, 120, and varying in quality.

At 11:30 A.M., ether, usual aseptic precautions. Median incision from xiphoid appendix to umbilicus.

Stomach found distended as above, while small intestines were collapsed. Both stomach and small intestines much congested, especially near the pylorus. Gall bladder could be seen, and it and the gall ducts were palpated and found normal. On palpation the lower end of the appendix cæci was slightly enlarged and apparently contained a concretion, but without adhesions or evidence of inflammation. The pylorus was firmly attached to the anterior surface of the right kidney by old adhesions, which it seemed unsafe to break up. At the pylorus was a firm hard mass, about the size of a walnut, obviously either a carcinoma or a cicatricial mass due to an old ulcer. From age and previous history, undoubtedly the latter. Gas or fluid could not be pressed from the stomach into the intestine. As the pylorus could not be brought into view, pyloroplasty was impossible, and a coil of small intestines, six inches from the duodeno-jejunal junction, was brought up and Wölfler's gastro-enterostomy performed, Czerny-Lembert suture with black silk being used, and the opening about one and one-half inches long. The intestine being opened, it was completely empty, while the stomach was greatly distended with greenish fluid. This was evacuated, while the abdominal cavity was shut off with gauze packing. Abdomen closed with deep and superficial silver sutures. Occlusive dressing.

On recovery from ether, pulse was 134, but sank slowly during the next two days to 90. No further vomiting occurred and bowels moved freely from that time on. Patient took liquid nourishment after the second day. Almost every day, however, there was an attack of severe pain, sharply limited to the region of the pylorus, lasting one to three hours, and requiring small doses of morphine. These attacks became shorter and less severe during the first eight days, while the patient gained flesh and strength and seemed otherwise in perfect health. On the ninth night the pain was severe and almost continuous, and toward morning she complained suddenly of intense pain in the lower part of the abdomen, vomited twice, pulse of 120–130, face sunken, skin cold and clammy. Tympanites occurred rapidly and there was obviously perforative peritonitis. Parents refused further operation and the condition of the patient would scarcely seem to warrant it. She died in collapse at 5 A.M., next morning. Abdominal incision was healed *per primam*.

It is a matter of deep regret that the parents absolutely refused a post-mortem, but the history of the case before and after operation makes it, I think, reasonably certain that an unhealed ulcer perforated into the peritoneum. I am sorry that the desperate condition of the patient at the time of operation deterred me from opening the stomach freely, seeking for an unhealed ulcer, and treating it, if found, with the actual cautery, as has been successfully done by Mikulicz.

Of the three cases of gastro-enterostomy, two were treated by suture and one by the Murphy button. All such mechanical aids seem to me inferior to a needle and suture, skilfully used, and the numerous accidents reported with the button would keep me from using it unless the utmost haste was necessary. Two patients recovered entirely from the operation, and one patient apparently recovered from the operation but died on the tenth day from an unforeseen accident. The patient upon whom pyloroplasty was performed, having retained no food for twenty-three days previous to operation, died of exhaustion. Both patients upon whom gastrostomy was performed recovered, but in that case in which the gastrostomy was done by Witzel's method no leakage whatever occurred, even when the tube was removed, while in that by Frank's (drawing out the stomach wall through a small incision, undermining the skin upward to a small incision above the border of the ribs, drawing the cone-shaped portion of the stomach beneath the skin, and fastening it in the upper incision, closing the lower incision) slight leakage occurred if the tube was removed.

In another case I should use a method which I tried on a dog more than a year ago, and found very rapid. Make a small abdominal incision, draw out a cone-shaped portion of the stomach wall, suture the base of this round the edges of the abdominal incision, invert the cone so that it projects into the stomach, and pass a tube into an opening in the apex. The result in this would seem so closely to resemble that of the operation recently published by Mikulicz in the *Centralblatt für Chirurgie*, and really is a modification of Witzel's operation, that I doubt if it can lay claim to being a separate method; but the technique seems to me simpler and more rapid.

II. Operations for Obstruction below the Pylorus.—These cases may be reported briefly, since, with perhaps two exceptions, they are of no great interest, except to enforce the lesson that in cases of intestinal obstruction delay is fatal.

Case I.—B——, male, aged thirty-two; September 27, 1894: acute intestinal obstruction due to band. Constipation for years, with frequent severe colic. Small passage four days ago, after several days' constipation; then intense pain in ileo-cæcal region, tympanites, complete obstruction, constant vomiting. Last twenty-four hours hiccough and fæcal vomiting. Treated with cathartics, injections, and morphine.

September 27th, examination: Condition as above, with evidence of general peritonitis. Ether. Laparotomy. Abdomen filled with sero-pus, intestines congested and covered with patches of purulent fibrin. At junction of cæcum and colon, a band of old adhesion completely occludes the bowel, which does not expand on cutting the band. Entero-anastomosis between cæcum and colon with large Murphy button. Abdomen thoroughly cleansed with many gallons of hot sterilized water. Gauze drainage. Patient did not rally, and died after a few hours. No autopsy allowed.

Case II.—N——, male, aged forty-one; June 9, 1894. Volvulus of ileum. Complete intestinal obstruction for five days. Vomited once, but no other symptoms, except intense pain in the abdomen, relieved by large doses of morphine. Treated with cathartics, high injections, and morphine. During whole time felt well, except for pain, and allowed to take three meals of solid food daily. Walked to carriage, which conveyed him to hospital, on morning of operation.

June 9th. This morning attending physician thought he detected tumor in right iliac region. At 2:30 P.M., symptoms of acute intestinal obstruction. Moderate pain, patient having had much morphine. Abdomen rigid, indicating peritonitis. Temperature and respiration normal; pulse, 90. Ether. Laparotomy. All intestines matted together with fibro-purulent exudation, and abdomen full of sero-pus. Small intestines greatly distended and almost black, and serous coat had given way at two points. Complete occlusion of ileum due to volvulus, three inches from ileo-cæcal valve. Volvulus untwisted. Small intestine opened where serous coat was torn, and contents evacuated. Openings closed with Lembert sutures. Abdomen washed out with fifty-per-cent. warm peroxide-of-hydrogen solution. Gauze drainage. Patient collapsed and died at 1 A.M. Autopsy refused.

Case III.—G——, male, aged seventy-one; February 23, 1895. Intussusception of Meckel's diverticulum. This case, on account of its rarity, deserves a more detailed report. Six days ago, sudden severe pain in abdomen; since that time no passage of fæces or flatus; constant pain, except when under morphine;

continued vomiting and hiccough. Treatment by cathartics, enemata, and much morphine. Temperature said to have been about normal and pulse not over 80, until this morning, when symptoms of collapse appeared and pulse was 120. Last enema when returned contained mucus and blood. Examination: Pulse, 120. Constant hiccough and vomiting. Abdomen soft; no muscular rigidity or tympanites. Pain and tenderness in right iliac fossa, but no tumor detected. Patient obviously much under the influence of morphine. Diagnosis: Acute intestinal obstruction, probably due to malignant disease of the cæcum or to intussusception. Ether. Incision in right inguinal region. Abdomen contained large amount of bloody serum, and intestines were intensely congested and covered with purulent lymph. There was an intussusception, involving about sixteen inches of the ileum, which had passed through the ileo-cæcal valve, and was already gangrenous at the point of contact with the cæcum. Resection of the cæcum, and about two inches of the ascending colon and of the ileum about four inches above the gangrenous portion. Attempts to unite the divided ends of the intestine with Murphy button failed, because intestine was so soft the thread cut through at once. Established artificial anus, flushed abdomen with hot sterilized water, and used gauze drainage. Patient never rallied, and died in about twelve hours. No autopsy allowed.

Examination of specimen showed a Meckel's diverticulum, sixteen inches from the ileo-cæcal valve, and four inches long. This had become intussusepted, not turning inside out, but inverting four inches of intestine. This mass formed a second intussusception and passed through the ileo-cæcal valve, dragging several inches of small intestine with it. The diverticulum was completely gangrenous, and the four inches of small intestine surrounding it (and invaginated in the small intestine just below) partially so, while the ileum above was also gangrenous, where it entered the ileo-cæcal valve, and the whole lower portion of the small intestine was so softened as to tear at the slightest touch.

Case IV.—A——, male, aged twenty-eight; May 22, 1895. On May 19th applied to a physician on account of pain and cramps in stomach and bowels. History before that time not known, but had probably been sick some days. When seen May 22d symptoms of intestinal obstruction, intense pain in abdomen, face pinched, pulse rapid and small, constant stercoraceous vomiting. Abdomen tympanitic and flanks dull Ether. Laparotomy. Abdomen contained much fæcal matter; intense suppurative peritonitis. Volvulus of small intestine apparently favored by contraction of part of the wall, probably due to healing ulcer. Perforation above this point utilized to empty the bowel, and then closed by suture. Untwisting volvulus restored calibre of bowel, and a few sutures were introduced to avoid recurrence. Toilet of peritoneum. Patient did not rally and died a few hours later. Autopsy refused.

Case V.—Mrs. H——, aged sixty-eight; June 20, 1896. Acute intestinal obstruction due to strangulated incomplete inguinal hernia. Three weeks ago severe pain in abdomen, with vomiting; since that time complete intestinal obstruction, except that once or twice small quantity of flatus escaped. Treated with cathartics, enemata, and morphine, but constipation pain, and vomiting continued. Two days ago stomach washed out, and since that time patient has absolutely refused food or liquid, and vomited only occasionally. Examination: Emaciated woman. Distended coils of intestine can be felt moving beneath relaxed abdominal walls. Pulse rapid and feeble. Temperature slightly subnormal. Face gray and sunken. No tumor found. Ether. Incision in left inguinal region, with the intention of forming an artificial anus. No sign of peritonitis. A coil of distended intestine and one collapsed were found side by side, and, being traced downward, an incomplete right inguinal hernia was found. Incision protected by gauze, and operation for strangulated hernia performed. A knuckle of gut was found barely projecting through the internal ring. No evidence of peritonitis, circulation of strangulated portion quickly restored, peritoneum smooth and shiny, no fæcal odor, peristalsis active, and only about two-thirds of the gut was included in the strangulation. Intestine returned and Bassini's operation with silver sutures done. Inguinal incision closed. Patient rallied well from operation, retained nourishment, and did not vomit until one hour before death. Bowels moved freely and often. There was no rise of temperature, but the pulse became more rapid and feeble, and patient died, seemingly of exhaustion, two days later.

It seems almost incredible that a patient should be allowed to go three weeks with intestinal obstruction before calling a surgeon, but at almost the same time and under the care of some of the same physicians I had a case of acute appendicitis in a woman, of three weeks' duration. An abscess had formed and emptied itself through the inguinal canal into the cellular tissue early in the disease, and when I saw the case the whole cellular tissue from above the umbilicus down to and including the labia majora was a stinking gangrenous mass, nearly four inches thick, while the skin was gangrenous in patches as large as one's hand. In spite of free incisions and removal of as much sloughy tissue as possible, the patient died of septicæmia a few days later.

A few years ago I operated on a similar case, of six weeks' duration, in an old lady, in whom the whole cellular tissue of the thigh, from the groin to below the knee, was gangrenous and infiltrated with pus and fæces. Happily this patient, after enormous incisions and removal of the sloughing tissue, recovered.

Case VI.—Mrs. A——, aged forty-two; January 30, 1895. Carcinoma of pancreas; acute miliary carcinosis of the peritoneum. Patient in perfect health until five days ago, when sudden intense pain in abdomen, first in region of umbilicus, later in right iliac fossa. Since that time constant vomiting of greenish fluid. No escape of fæces or flatus, in spite of cathartics and enemata. Temperature, 100° to 101.5 F.; pulse rapidly increasing in frequency, until this afternoon it reached 150. Examination: Condition as above. Very stout, well-nourished woman. About three inches of abdominal fat made examination difficult. Vaginal examination negative. No tympanites. Abdominal muscles not rigid. Marked tenderness in right iliac fossa; slight tenderness over whole abdomen. Diagnosis: Appendicitis or acute intestinal obstruction, probably the former. Ether. Incision in right inguinal region. Large amount of bloody serum escaped. Appendix normal. Incision prolonged upward. Carcinoma of pancreas, involving whole gland and mesenteric glands. Whole intestinal and parietal peritoneum covered with snow-white specks, each about the size of a pinhead, evidently a miliary carcinosis. Abdomen cleansed and closed. Patient regained consciousness and suffered no pain, but pulse became more rapid and feeble, and she died about twelve hours later. Autopsy showed condition as above and large amount of sero-sanguineous fluid in abdomen. This was of course not a case of intestinal obstruction, but I include it because the symptoms so closely simulated that disease and because the case itself is one of rare and unusual interest.

Case VII.—Miss M——, aged about thirty-five. This was merely a case of chronic intestinal obstruction, becoming finally almost absolute, and due to a

carcinoma of the rectum high up and entirely inoperable when first seen. Left inguinal colotomy was done, and the patient lived in comparative comfort for several months before succumbing to the progress of the disease.

I publish my very unfavorable record in these last seven cases, chiefly to call attention to the following points. Temperature is of very little value as a guide in intestinal obstruction, unless it be a subnormal temperature, due to gangrene, perforation, septic peritonitis, etc., causing rapid collapse. The important symptoms are pain, either general or fixed, when it may be either at the point of obstruction and in some quite different part of the abdomen, obstinate constipation, vomiting, and steadily increasing rapidity of the pulse, which is generally small and wiry. Every man who does much abdominal surgery knows that vomiting and rapid pulse are the two symptoms which cause him the gravest anxiety after operation. To these may be added the expression of mental anxiety, so graphically described by Erichsen, in the earlier stages, and the gray, sunken, and pinched appearance of the face when gangrene, perforation, and septic peritonitis have occurred, in the later stages. The board-like rigidity of the abdominal walls, when septic peritonitis exists, is a valuable guide, but may be entirely lacking. Several of the most valuable guides—pain, local tenderness, the anxious facial expression, abdominal rigidity, and to some extent also the character of the pulse—may be completely masked by morphine, and therefore I protest strongly against its use in such cases, unless it be to give temporary relief while preparing for operation. With the aid of morphine a patient may be guided quietly and comfortably to his grave, and, because he feels so well, will believe himself to be almost convalescent when the belly is full of pus and fæces.

So many cases of coprostasis, especially in women and old men, simulating intestinal obstruction, occur in the practice of every physician, and are promptly relieved by a brisk cathartic or a stimulating enema, that we cannot condemn a resort to these measures in the early stages when no objective symptoms indicate an organic obstruction. But once these measures have failed, it should be remembered that a few hours may suffice to cause intestinal paralysis, gangrene or perforation of the bowel, and septic peritonitis, when the patient's chances become very small indeed.

One word more in regard to the question of autopsies. It may be noticed that in the foregoing cases in only one or two could an autopsy be obtained, though in several it would have been of great value and interest. This is a prejudice similar to that against dissection, which formerly made the study of anatomy so difficult, and which does not exist to anything like the same extent in communities more highly educated in scientific matters. It seems to me to be the duty of the profession, by personal influence, to endeavor to eradicate this prejudice as far as possible.

A New University College Hospital Building.—Sir Blundell Maple, head of probably the largest furniture firm in the world, has just presented the sum of $500,000 for the purpose of building a new hospital in connection with University College, London, the present erection being altogether inadequate to the needs of the population of the district in which it is situated. The Prince of Wales, when laying the foundation stone of the new building and in acknowledging Sir Blundell Maple's munificent gift, remarked that it was the largest sum given to the sick poor of London since Thomas Guy in the seventeenth century established the hospital which bears his name. *London Times.*

THE CURE OF WRITERS' CRAMP AND TELEGRAPHERS' PARALYSIS.

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This is a subject which concerns the author with the direct personal interest of one who has had the disease himself. After four and a half years of conservative observation of the results of many experimental variations in electrical treatment, I am now willing to state that writers' cramp is curable in all stages and in every uncomplicated case. This is also true of similar affections which result from overuse of the arm muscles. They are definitely curable by methods of mathematical exactness which may be successfully employed by any physician who understands electrotherapeutics and writers' cramp. They are simple and rational methods, without mystery or inconvenience to the operator.

I have waited for the confirmation of time and the better instruction of an enlarged experience before taking any positive ground or expressing any hope of restoring an advanced case, but, having finally worked out the true principles of treatment, I find that results are as certain in the worst cases as in the simplest; they require longer treatment only. I have taught the principles and technique to physicians in my clinic, who can confirm what I shall here say, and any telegrapher or penman or pianist who makes a personal test becomes convinced of success in a single week. No argument is required to sustain any theory about the matter, for the results are self-evident and unmistakable.

There is but one fault to find with the plan of treatment—it is not so rapid as could be wished; but, since the loss of power in the arm has been a slow process, it must probably be a slow process to restore it, and I doubt if it will ever be possible to cure a severe case of cramp or paralysis in one or two weeks' time. Relief will begin at once and commencing stages may obtain a practical cure in two weeks, but men who have been totally disabled for from one to ten years cannot expect to send good Morse or write with ease in less than from forty to sixty treatments.

When I began the study of these diseases (all of which may be grouped under the one head of "writers' cramp") I found them described by medical authors under the head of "nervous diseases," and I do not now recall the discovery of any really useful therapeutics for well-developed writers' cramp in all my searches in medical literature. When I adopted the suggestions of other medical writers, I failed. When I treated the separate symptoms locally, I also failed; but when I ignored symptoms (except pain) and applied myself steadfastly to the improvement of nutrition, I began to succeed. At first I succeeded only with very mild cases, but in time and with increasing experience I at length worked out the true principle upon which absolute and unequivocal success is based.

So long as I was misled by the inaccurate teachings of neurology in regard to the nature of this disease, I tried method after method in vain and felt convinced that a radical cure of severe cramp was wellnigh impossible. I saw and talked with the author of a much-advertised method of "special massage" when he was in this country some years ago, witnessed his demonstration at the New York Academy of Medicine, and had his method applied to my own arm, but was left in doubt as to its actual value to any one but himself. Since understanding the disease better it is plain to me that massage aims in the right direction, but is a laborious and unprofessional method which hits the mark at random if at all. Space

will not permit me to discuss the merits of the different plans of treatment with which the persistent study of four and a half years has made me acquainted.

The first thing to consider is the true nature of the disease. It is not a "neurosis," but is obviously a state of impaired nutrition. When a healthy person fatigues his arm by unusual and severe work, rest will take away the lameness and exhaustion; but if overuse is continued day after day, the nutrition of the tissues does not keep pace with the waste of wear and rest becomes less and less effective. When telegraphers, writers, typewriters, pianists, or others work at a rate of speed which is beyond endurance, there develops a state of chronic fatigue, which is the disease. The most numerous class affected by writers' cramp have worked in the press association offices in our large cities, where telegraphing on heavy wires at a high rate of speed breaks down in a few years a considerable number of men. From the fact that the disease does not exist until the muscle fibres cease to regenerate themselves by rest, it is a contradiction of terms to say that "rest" will cure it. It is the custom of most physicians to advise patients to "rest," but this advice is conclusive proof of ignorance of the disease or at least of any remedy for it. If "rest" was a curative measure ninety-five per cent. of the telegraph operators now affected would get well, for all of them can report periods of rest of from one to fifteen or more years. I shall here state the exact bearing of "rest" upon the subject, for the benefit of other physicians, for telegraphers themselves will never consult a second time a practitioner who advises them that rest will restore a "lost grip."

In the very earliest stage of acute fatigue the muscle fibres still retain the power of self-regeneration, and rest permits nutrition to become normal again. When fatigue advances to the persistent stage of pains, lameness, heaviness of the arm, and marked lack of power, a reasonable rest will relieve the symptoms, but they will return again when work is resumed. Rest has no permanent curative value and does not make the arm any better.

In all the later stages of cramp and increasing paralysis down to the time when the operator is just able to jab at a key with one finger, "rest" will not only not cure the arm, but the operator who stops work for a few months in the hope of betterment will find his arm more useless when he tries it again. It degenerates during rest when it has reached this stage of impaired nutrition.

Exercise is another overrated measure. Many think it will prevent the disease, and fully one-half of the operators I have treated have attended the gymnasium or kept themselves in powerful muscular condition. Exercise will neither prevent nor cure telegraphers' paralysis.

It is also certain that writers' cramp cannot be cured by drugs, and in all medical literature there does not exist any account of a satisfactory remedy which gives a certain and good prognosis.

"Electricity" has been vaguely recommended by various authors, and, although it has been employed by a diversity of methods and with indifferent results, it was the remedy to which I first turned with hope and adhered to through many disappointments, until finally the correct principles of its application became clear. From the moment I comprehended that the disease was a peripheral impairment of nutrition, it became a mere matter of restoring nutrition to normal to remove all the troublesome symptoms of the disease. Of these symptoms the cramp previously baffled me for over three years, but within a year and since the discovery of a more rational method it has lost its former hopelessness. The worst case of cramp can be cured.

The principles of curative electrical treatment are simplicity itself. The arm is first subjected to a gentle warming-up application to quicken the circulation, as the preliminary canter warms up a racehorse before he enters the race. The arm is next subjected to general nutritional muscular contractions, regulated in energy and number by the tolerance of the tissues. Finally the arm is given a refreshing, restful, nutritional application, which leaves it at the close of treatment invigorated, buoyant, and elastic. The total treatment requires about ten minutes, and every moment and every detail of each application aims at improving the nutrition of muscle fibres.

Every physician who is well taught in the production of special therapeutic effects by electric currents will understand that nutritional and refreshing effects can be produced in more than one way. The technique of counter-irritant applications, nutritional applications, sedative-tonic applications, and muscle-contracting methods by means of static currents is fully described in chapter xxvii. of the author's "Manual of Static Electricity in X-Ray and Therapeutic Uses," and probably every physician is also familiar with the "refreshing" action of the galvanic current. The main thing is the comprehension of the fact that the only indications are to relieve pain and to improve nutrition, and nature will take care of all the rest. As the disease is essentially a peripheral degeneration of nerve and muscle nutrition, the cure depends upon restoring the nutritive processes to normal. When nutrition is restored all symptoms disappear.

In the early stage of easy fatigue with disordered sensations, the muscular achings and sense of heaviness are relieved by the first treatment and complete recovery is established in about two weeks. In the second stage of more marked distress in the arm, constant fatigue, and weakness, with or without pains, about twenty treatments will restore the arm to practical and comfortable work. Improvement begins with the first treatment and the arm feels natural after the first week, though a longer time is required to restore full power. In the third stage, from the time when work begins to be very difficult down to the time when the operator is barely able to work at all and can only handle a light wire by exerting his entire will, a rapid improvement will be gained in a week and the arm will be quite comfortable in a week more, but the return of strength will require about forty treatments. When paralysis, cramp, and spasm have only recently begun, the results of treatment will be the same as those last stated. When the operator has completely lost his grip for one or more years and can no longer look at a key without a cramp, or when the arm cramps with the pen after writing but half a dozen words, the arm will improve to a state of comfort without work in a week; it will be able to do a little light work in two months; it will be practically restored to normal nutrition in about fifty treatments, and thereafter it will continue to improve without treatment and must be again broken in to its occupation by gradual increase of the daily work, just as an arm is broken in when any operator resumes active employment after one or more years away from a key.

In all these cases improvement continues long after the electrical treatment stops. The entire general health of the patient is built up by the treatment. If the left arm is also affected it improves at the same time. An operator who overtaxes himself on a long wire can keep his arm in working order for many years by returning for a couple of weeks' treatment every one or two years. There is no operator, however fine he may still think his arm, who has done heavy work for a term of years, but can by a dozen treatments be improved so much that he will be astonished (probably improved twenty-five per cent.).

The above conclusions express the average results

of my clinical cases, and yet convey but a poor idea of the satisfaction afforded the patient by the immediate comfort imparted to his arm and the general improvement in his health entirely apart from the actual recovery of the grip. In these cases the arm is often affected with pains, numbness, sense of weight, coldness, and other distressful sensations which impair sleep and render the patient uncomfortable even when writing or telegraphing has been suspended. These symptoms vanish very quickly.

More than this. The treatment itself furnishes the barometer of the condition of the arm at any given time. When the patient makes his or her first visit to my office, no verbal account of symptoms can define with equal clearness the stage of degeneration that is expressed by the muscular reaction to a single spark upon the ball of the thumb. During the gradual process of improvement the increasing quickness of muscular contractions sets forth the patient's state as accurately as the clinical thermometer expresses fever. The methods, in fact, are methods of precision, and the results are so certain that they are only a question of technique and perseverance. While rest during the early part of treatment is an advantage, yet most of my patients have kept on with their work, and as soon as the cramp is conquered I advise them to give the arm some use any way. There are exact signs by which progress or the reverse can be measured, and a rational management of the arm is easily directed.

Some will now ask what current should be employed. During my hundreds of trial methods of technique I have employed all three of the chief medical currents—the high-tension induction coil, the galvanic, and the static—and have demonstrated that either one of these can be so handled as to benefit a recent case or even finally to conquer an obstinate case. But to obtain the best results in the shortest time two currents are needed, the galvanic and static. Each of these permits certain applications producing special effects which are unique and cannot be quite duplicated by any other resource in medicine. It is now apparent that poor results reported by so many have been due to the same cause as my own early failures—to wit, poor technique, directed symptomatically. The certainty of repairing these arms by a correct electrical technique is now so clearly demonstrated and is done in so satisfactory a manner that we may well wonder that writers' cramp was so long regarded as incurable. I recall my great personal anxiety about my own arm at the time when the author of special massage treatment was here, and I felt extremely disappointed to have the only man in the world then claiming to know how to cure the disease fall short of our hopes in his alleged demonstration. Year in and year out since then I have held steadily to a purpose, to work out the remedy if possible, and in the correct use of electrical currents the remedy is found.

In stating here, as I positively do, that even the most advanced stages of this disease are entirely curable, an explanation is due to readers of my formerly published remarks. In the chapter upon writers' cramp in "The Treatment of Disease by Electric Currents" I have said:

"It is, however, difficult to 'cure' the total disability stage of writers' cramp so that regular work can be resumed and maintained. I have never been able to conduct a case in this late stage to a satisfactory conclusion, possibly for the reason that such patients have not persisted in treatment. I have attempted a variety of sedative and antispasmodic methods of electrical treatment for severe and persistent cramp, but as none has proved curative it is useless to describe them here. The best results appear to be obtained by simply continuing for a much longer period the methods that afford relief in the earlier stages."

The chapter from which this extract is taken was written a full year ago, although, through publishers' delays, the book has been in print but a few months. I had not then solved the entire problem of treatment, and I stated the best I could do with the technique then described. It is my custom conservatively to understate results in what I write about medical electricity, owing to the frequent charge that the merits of electricity are exaggerated. What, however, may appear an exceptional result when one uses a poor technique may become very commonplace and inferior to average results when experience has taught the same person a better method. This has been my own case in the treatment of telegraphers' paralysis.

In closing, I will add that the permanence of improvement is very satisfactory and all patients who have given me reports of their condition have continued to improve after treatment was stopped. One operator, whose treatment was begun by me on December 5, 1893, had been totally disabled for two years and had lost about half the use of his left hand also. He had seventy-two treatments, the greatest number I ever gave any case of telegraphers' paralysis and writers' cramp, and he continued to gain for a year afterward. I lost track of him until a few months ago, when he reported that he had been able to take a position again in a press association office and was "using his arm for all purposes." He now tells me that he thinks of entering the telegrapher's tournament which will shortly be held in New York City.

865 Union Street.

Progress of Medical Science.

X-Ray Applied to Fractures of the Lower End of the Radius.—Kahleyss has examined sixty of the above fractures—mostly recent—by the Roentgen ray (*Zeitschrift für Chirurgie*, Bd. 45, November, 1897). As a result of these examinations he has concluded as follows: True epiphyseal separations do not occur late in childhood. Fissures do not occur so often as has formerly been thought. True fractures either do or do not involve the whole breadth and thickness of the bone. The first form occurred in eighty-nine per cent. of the true fractures, and was either single (sixty per cent.—transverse, oblique, angular) or multiple (twenty-nine per cent.). The latter form (*i.e.*, the fracture not going completely through the breadth and thickness of the bone) consists of a fracture of a portion of the styloid process, sometimes with a breaking off of the dorsal articular edge. The most frequent complication of the radial fracture is fracture of the styloid process of the ulna (in seventy-eight per cent. of the cases). Regarding the mechanical etiology of radial fracture in this portion of the bone, it sometimes is produced by force and counterforce alone; it is, however, generally brought about by a combined influence of both radius and ulna.

Etiology and Operative Treatment of Tubal Gestation.—In this interesting article Dührssen describes twenty ventral and fifteen vaginal cœliotomies, two cases of posterior colpotomy, and three vaginal total castrations for tubal gestation, and gives the results (*Archiv für Gynäkologie*, Bd. 54, H. 2). In those cases alone in which the tumor reaches some distance above the pelvic brim does Dührssen advise ventral cœliotomy. The advantage of vaginal cœliotomy is the comparatively small operation as opposed to a laparotomy; cure, healing of the wound, and recovery are more rapid by this method; shock is less; abdominal incision through a fat abdominal wall often causes ventral hernia, which hernia may later lead to serious complications. He describes very thoroughly his vaginal

technique. He advises the drawing out of the tumor with broad or pointed clamps, since catgut ligatures may cut through or tear off the tumor. He, further, rarely does a vaginal fixation after the extirpation; he also says that the abdomen or vagina should be entirely sewed up, in order to prevent adhesions between uterus and vagina, which cause complications in later pregnancies and labors. He advises extirpation of the tube in tubal gestation, even when no hemorrhage exists and when pain alone is present; for even after the death of the fœtus dangerous hemorrhages may occur. He speaks against the killing of the fœtus by morphine injections. Etiologically, Dührssen considers tubal disease, particularly gonorrhœal infection, as the most frequent cause of extra-uterine gestation. Other causes are tubal polyps and puerperal atrophy of the tubes.

Potassium Sulphate and Cirrhosis.—At the meeting of the Academy of Medicine, held on March 22d in Paris, M. Richet discussed the various observations which had been communicated by M. Lancereaux confirming the part played by sulphate of potassium in the production of cirrhosis. He showed that in the major part of his observations he had dealt with wines only slightly plastered. Wine is most often plastered in the district of the Midi, and it was therefore necessary to examine the frequency of cirrhosis in that district. It had been argued that a large number of French wines contained as much as from 4 to 6 gm. of potassium sulphate per litre, and this assertion had had a most disastrous result on the sale of French wines, especially in foreign countries and on account of the somewhat unfair competition of German and Italian wines. In 1851 a regulation, which was re-enacted in 1880, forbade the plastering of wines to any extent above 2 gm. of potassium per litre. In 1891 the Loi Griffe laid down anew the same propositions. Shortly afterward, in 1892, M. Richet was sent into Spain to examine and report upon the plastering of Spanish wines. Of fifty-five samples examined, forty-four gave a result of less than 1 gm. of potassium sulphate per litre. Before this date, however, the plastering of Spanish wines was very heavy, and they often contained as much as 6 gm. per litre. In Paris, on the other hand, the amount of plastering is small. Even before the regulation of 1891, the mean amount of sulphate of potassium was only 2.5 gm. per litre, and the figures have now fallen to 1.4 gm. Before the regulation of 1891 the municipal laboratory found out of sixty-four hundred samples only eighty-five which contained 3 gm. of sulphate of potassium per litre. Since the passing of the law the figure has fallen until the highest amount is only 2.5 gm. per litre. There is, therefore, no reason to think that the intoxicating qualities of the wine are due to sulphate of potassium. With regard to the question whether alcohol is responsible for the occurrence of cirrhosis, M. Richet recalled the important investigations of Hanot and his pupil Boix, who found that vinous intoxication is markedly increased by various acids, notably the fatty acids, which are produced in the various dyspepsias so often caused by the abuse of wine. Wine acts on the liver by the alcohol which it contains as well as the acids, in addition to the acids produced by gastric fermentation. M. Lancereaux, having noticed for many years that sufferers from cirrhosis were almost always wine drinkers, sought to discover what was the special toxic element in wine. He thought that acids might be the reason, but made no experiments on this point. On the other hand, he did make experiments with sulphate of potassium, and found that by giving small daily doses to animals he could produce in them a cirrhotic condition exactly similar to that which is found in the cirrhosis of drunkards. M. Lancereaux is therefore, he thinks, correct in considering that sulphate of potassium is to blame in the production of the cirrhosis of drunkards.

Excretion of Micro-Organisms by the Secreting Mammary Gland.—Drs. Basch and Weleminsky have experimented upon animals to study the power of the mammary gland in the above connection (*Berliner klinische Wochenschrift*, 1897, No. 45). The animals used for experimentation were guinea-pigs. They at first tried non-pathogenic germs—the bacillus cyanogenes lactis and bacillus prodigiosus, each of which grows at the bodily temperature and multiplies in milk. It was easily proved that these two forms of bacteria were destroyed in the blood and that the milk always remained sterile. Pathogenic bacteria were then tried. The bacillus anthracis, when introduced by vaccination into the bodies of six guinea-pigs, was not found in the milk. With the bacillus pyocyaneus the following procedure was carried out: Five guinea-pigs were injected intravenously with a pyocyaneus agar culture, one to three days old. In all cases the bacillus was found in the milk five to eight hours after the injection. The experimenters believe this result to have been due to smaller or greater hemorrhages which were found in each animal; through these hemorrhages not only are the germs carried out of the blood-vessels, but the protecting epithelial covering of the mammary gland is also destroyed, thus bringing the germs into the lumen of the milk ducts, where the germs mix mechanically with the milk. It is, then, to be expected from the above that germs which do not produce hemorrhages (not counting those that produce cell necroses and abscesses directly in the breast) will not appear in the milk. Thus far experimentation has borne out this statement. Typhoid, cholera, and diphtheria germs were likewise injected intravenously, but in every case the milk remained sterile, even though the germs were found for some days in the blood. In tuberculous cattle it was found by the investigators that one-fifth of the cows in whose milk tubercle bacilli were found had no local disease of the udder. It must be remembered, however, that small tuberculous foci may have existed which were not macroscopically evident. As to whether a certain infection can be carried by the milk of an animal must be an individual matter; it depends upon the animal in question, and also upon the infectious disease from which the animal is suffering.

Treatment of Tabes Dorsalis.—Eulenburg states that a few cases of tabes are cured or greatly improved; of course only functionally and not in the anatomo-pathological sense. This improvement occurs by the institution of the most varied methods of treatment. Revulsives or the use of nitrate of silver the writer considers of no use (*Deutsche medicinische Wochenschrift*, 1879, Nos. 4 and 5). Empirically electrotherapy, balneotherapy, hydrotherapy have undoubtedly been of service in some cases. Regarding the antisyphilitic treatment of tabes, Eulenburg states that two things have been proved: Cases of undoubted syphilitic tabes can be improved or even "cured" without as well as with antisyphilitic treatment, while the specific treatment itself, in the majority of cases, is followed by but slight improvement; and, secondly, antisyphilitic treatment can *per se* do damage at times. Medicine can ofttimes relieve tabes dorsalis symptomatically. Of greatest importance is the surgical, kinetic, and mechanico-orthopædic treatment of the disease. Operative nerve stretching has not been tried. The various methods of suspension, which all tend to stretch the spinal cord, and apparatus of support have in mild cases produced great improvement, namely, in the ataxia, the lancinating pains, the anæsthesia, and the bladder symptoms.

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THE PREVENTION AND CURE OF YELLOW FEVER.

IN view of the intense interest which is now manifested in the study of means for the prevention and cure of yellow fever, it is gratifying to note that some progress has been made toward the desirable ends in view. Dr. Giuseppe Sanarelli, whose investigations into the cause of this disease have received so much attention, has by no means been idle in prosecuting his investigations in a practical direction. His discovery of the yellow-fever microbe two years ago was followed by long-continued and finally successful efforts to produce a serum by the usual methods of inoculating animals, preferably the horse and ox, with repeated doses of the poison. His experiments with this alleged curative agent, as detailed in a recent issue of the *Annales de l'Institut Pasteur*, are extremely interesting, although as yet by no means conclusive. It is a matter for some surprise to note that according to his observations the rationale of the action of this serum in no way corresponds with that of antitoxin in diphtheria, as he declares that he has not discovered thus far any antitoxic substances in vaccinated animals. He feels warranted in the opinion, therefore, that the icteroid bacillus is directly destroyed by the injection. Whether or not this theory is tenable on the present basis of bacteriological investigation is a matter of but small moment compared with the direct and practical applications of his methods of prevention and cure. Making all due allowances for the difficulties naturally attendant upon initiative experiments, the results thus far obtained, by reason of the small number of patients treated, can be viewed only in the light of a report of progress in a promising direction.

Everything seemingly depends upon prompt and early treatment, as after a certain period the rapid accumulation of the poisons forbids the hope of cure. This is particularly the case when kidney complication with its accompanying suppression appears. In connection with the intractability of this complication it may still be a question whether or not the serum is yet of sufficient strength to meet all its alleged requirements, as cases are reported in which actual polyuria followed serum injections. The observations were carried on principally in the State of Saõ Paulo in Brazil, where the fever, feeding on unacclimated emigrants, is particularly virulent and fatal—the mortality in some instances ranging as high as eighty and ninety per cent. Sanarelli reports as the result of his treatment but six deaths out of a total of twenty-six cases. This is certainly an excellent showing and warrants further study in the hope of confirmation on a more extended scale. Certain it is that as yet there is no particular method of treatment founded on the many theories of causation of the fever which can guarantee such a ratio of cure. Although the author claims benefit for the treatment only when used in the first stages of the disease, there is no reason for despairing of still better results when the system becomes perfected and the means to the end are proportionately elaborated. IN all good things which belong to long and patient work the best that one can hope for is a reasonably promising beginning.

Sanarelli's observations regarding the possibility of preventing the disease are markedly more encouraging and deserve corresponding interest and attention. For instance, his report of the results of preventive inoculation in a jail at Saõ Carlos do Pinhal, where the fever broke out in February last, are quite significant and encouraging. All the convicts had been directly exposed to the infection by one of their number, who was found suffering from the fever. The inmates were subjected to the serum treatment and all alike escaped. As no deaths have been attributed to the direct action of the injected substance, and as there have been no systemic disturbances other than those associated with a temporary rise in temperature, it would appear to be perfectly safe to follow the lines of the distinguished discoverer in more extended directions, in the hope that the results may be correspondingly confirmative. If half of what seems to be promised is gained, we shall have taken a long step forward in combating one of the greatest scourges of modern times.

THE RED CROSS AND THE ARMY.

IT was almost inevitable that there should be some friction between the medical staff of the army and the officials of the Red Cross in Cuba, and we are not surprised therefore to read in the daily press more or less colored accounts of their differences. One account, written by a member of the Red Cross at Santiago, says that the army officers received his advances politely, but rather stiffly, admitting that they did not have many luxuries for the sick, and signifying their willingness to accept a few things to help them out until their own supplies arrived, but declining all offers of doctors and nurses. "Refused by our own people we next called on General Garcia of the Cuban army and were most cordially received, his medical men being only too glad to accept all we had to offer. So the next morning our four Red Cross nurses and Sister Bettina went over to the Cuban hospital, which was as repulsive and forbidding a place as can be imagined, and began work. The house and patients were astounded and transformed with such a baptism of soap and water as never was heard of before in this benighted region; and by afternoon that little hospital was one clean spot in town, and scoffers

became believers, and army officers became gentlemen who doffed their hats to our demure drab little women, who believe that cleanliness is the first essential to healthfulness."

After describing the far from luxurious accommodation for our own sick and wounded, the writer continues:

"Of course the contrast between the Cuban and our army hospitals could have but one result, and the army surgeons are now willing and eager to have us on any terms we may suggest, and are constantly asking for more than we are prepared to give.'

Any one reading this account with an open mind will probably see at once the causes of this little want of harmony. To put it in unconventional language, the Red Cross is cocky and the army is uppish. The military surgeons are naturally not wildly pleased to have civilians step in and do for the sick soldiers what the medical department of the army, with its necessarily limited appropriation, is unable to accomplish, and especially is this interference unwelcome when it is accompanied by a smile and a there-now-see-what-we-can-do air. In the army the maintenance of discipline is absolutely essential, in the hospital as well as in the field, and the treatment of sick and wounded soldiers by civilian surgeons and nurses, who have delicacies to distribute, cannot but tend to diminish the authority of the army surgeons over their patients. Sick men are like children, their affections and their regard go out to those who give them "goodies." The Red Cross Society, on the other hand, claims that its aims are purely benevolent, that it seeks only to relieve the sufferings of the soldiers, and that it does so through private contributions without calling upon the government for anything but permission to perform its humanitarian labors.

The main objects aimed at by the members of the Red Cross and the surgeons of the army are identical, and the differences between the two bodies are but slight and should be easily adjusted. Let the Red Cross officials remember that when they work within the lines of our forces they must be subject to the regularly constituted officers of the army, and must act in perfect harmony with them. If they do this and avoid any semblance of belittling the authority of the military medical officers, the latter will recognize in them most valuable auxiliaries and will welcome the relief which the Red Cross can bring to their wounded charges.

THE FIRST BATTLE AGAINST YELLOW FEVER.

The expected has happened, and yellow fever has attacked our troops in Santiago. The first reports that were permitted to reach the public were dated July 12th, on which day there were fourteen new cases. Within three or four days after that the total number of cases to date was admitted to have been upward of three hundred, so that it is certain that the disease has been among the troops for some time, probably having attacked them almost immediately after the landing was made. The policy of concealment was wholly justifiable at that time, for a confession of the truth would have served no purpose in protecting the home ports, and would simply have encouraged the Spaniards to delay surrender and would have caused unavailing anxiety and discouragement at home. All the accounts of the epidemic agree that the disease is in an unusually mild form, by far the greater number of those attacked recovering after the normal period of not very great suffering. Among the sufferers were very many of the Red Cross surgeons and nurses, all of whom, so far as is known, have entirely recovered or are convalescent. Many immune surgeons and nurses are on the way now to Santiago, and will be assigned to the fever hospitals immediately upon their arrival.

Now that there is no human enemy in our way, our sanitary officers in the conquered province have an excellent opportunity to give to the world an object lesson in cleanliness. And we are perfectly confident that, with the filth of Santiago destroyed, the houses cleaned and disinfected, the infected huts burned, and our camps removed to the hills as far as that may be possible, Gen. Vomito Negro will follow the lead of General Toral and yield to the inevitable. We have always believed that the chief reward to our country for undertaking this modern crusade against the Saracen, and one that will fully compensate us for expenditure of blood and money, will be the liberation of our Southern States from the constant menace of yellow fever. We are fighting not only for the freedom of Cuba from Spanish tyranny, but for the freedom of America from Spanish disease. The accomplishment of the first object is almost realized, and that of the second is plainly in sight.

It is not to be expected, however, that this glorious victory over disease can be won without a struggle, and we therefore welcome the battle which is now on, fearful indeed that the loss may be heavy, yet with no misgiving as to the outcome of the contest.

THE MODERN BULLET WOUNDS.

The study of the effects of the modern bullet wound has brought to light some interesting facts bearing more particularly on the relations of calibre to velocity of transit, in which the destructive tendency of the latter is markedly shown. Both the Spanish and the American armies are supplied with rifles of practically the same calibre and the comparison of results can be estimated only in connection with the rifle wounds made during our civil war by the Minié ball. In the small-bore arms the initial velocity is in a definite degree proportionate to the shortness of range, although not much essential difference is noted in results within a distance of five hundred yards. Obviously the direct penetrating power of these missiles is greatly increased, they scarcely ever lodging but almost invariably passing entirely through the body. The wound of entrance, in accordance with the ordinary rule, is small and cleanly cut, that of exit being large and ragged. The latter condition is shown in a very striking degree as to size and laceration on the side of the damaging effects of the small bullet. The

exits of the modern missiles are surprisingly large, due doubtless to the degree of resistance to the velocity. Consequently when bone is struck the comminution and laceration are correspondingly extensive and destructive. In brain wounds the skull is for similar reasons extensively shattered, the brain substance in the track being reduced to a pulp by the expansive force of transit. Judging from these facts, as verified on the field of Guantanamo by Assistant-Surgeon Van Duser, U. S. N., the only comparative safety was guaranteed by simple flesh wounds in which no considerable extent of tissue was involved. Fortunately there has been no opportunity for studying in our own sailors the wounds of larger dimensions caused by shells and flying splinters of wood and steel, but those from which the wounded sailors of Cervera's ships suffered are said to have been terrible.

A CASE FOR INVESTIGATION.

THE transport *Seneca* arrived at this port on July 20th, with nearly one hundred sick and wounded from Santiago on board, among whom were fourteen men with a suspicious fever. The ship was in a filthy condition, short of food and water, without any medical or surgical supplies or instruments, not even dressings for the wounds or a single clinical thermometer. In one case an abscess was opened with the blade of a jackknife, no scalpel being obtainable. When the captain was ordered to take the sick soldiers, he protested that there were no conveniences or even necessities for them on the ship, but his objections were overruled by some one at Siboney. Who that some one was is a proper subject for investigation by the military authorities, and when found his punishment should be such as to deter others in command from like brutality. The affair was a disgrace to the army and the country, and, as many foreign military attachés were on board the *Seneca*, our shame will be published to the world.

News of the Week.

The Losses at Santiago.—The final report on the casualties in the army before Santiago, from the first landing of the troops to the surrender of the city, shows a total of 1,914 officers and men killed, wounded, and missing. The killed number 246, of whom 21 were officers; wounded, 1,584, of whom 98 were officers; and missing, 84, of whom none were officers. Of the wounded only 68 have died. As we have before noted, the wounds made by the Mauser bullets were in general not of a serious nature, and the value of antisepsis in their treatment has been demonstrated in a way to convince the few though obstinate sceptics among the surgeons of the world. Notwithstanding the wretched physical condition to which most of our soldiers were reduced by the exposure to sun and rain in the trenches and by the lack of sufficient food, there were even in the field hospitals very few septic wounds, and among the entire 1,584 wounded there were but two cases of gangrene, of which one resulted fatally.

Red-Cross Aid Accepted by the Surgeon-General.—At a conference held in this city on Sunday afternoon between Surgeon-General Sternberg and members of the Red-Cross relief committee, the former said that he would accept very gratefully the offer of the committee to forward supplies for the sick and wounded at Santiago by the transport *Resolute* and the hospital ship *Missouri*.

A New Surgeon for the Sixty-Ninth.—Assistant Surgeon J. H. Oswell has been appointed surgeon of the sixty-ninth New York volunteers, vice Major Ramsay.

The State Hospitals for the Insane. — Assemblyman S. F. Nixon has recently presented a report to the comptroller of New York of an investigation made by him of the insane asylums under the care of the State. Mr. Nixon says that the management of the State hospitals, so far as the care of the patients is concerned, is satisfactory; but whether or not the financial condition of the State is such as to guarantee the extraordinary expenditures which are being made is a matter which, he says, would be well worth investigating. His strictures upon the Manhattan State Hospital are especially severe. The conditions which exist on the islands in the East River he characterizes as most deplorable, so far as the proper care of the insane is concerned. The buildings there, he says, were constructed for purposes entirely foreign to those for which they are being used at the present time. Mr. Nixon thinks that if it were possible to establish a colony more remote from the city of New York, where those of the patients can be employed who are able to render any service, it would be the most economical thing for the State to do. Dr. Wise, of the State commission in lunacy, commenting on this, is reported as saying that the per-capita cost of maintaining the insane previous to the passage of the "State-care" act was $216, and that now it has been reduced to $186. He thinks it would be calamitous to disturb a system for the care of twenty-two thousand of our most troublesome dependents, which is based upon such humane and economical principles as the system of State care at the present time. As regards the condition of the insane of New York City, Dr. Wise says that it has been marvellously improved under State supervision, although he is reported to have admitted that the buildings on the East River islands are not suitable to the purposes of a hospital.

Another Army Hospital Ship. — The steamship *Missouri*, one of the seven purchased by the government from the Atlantic Transport Line, which was the ship chartered by the government to send grain to Russia during the famine there a few years ago, has been selected as the new army hospital ship. The *Missouri* is due at Philadelphia from Liverpool on July 21st; discharging her cargo, she will come to New York to be refitted. Major William H. Arthur, surgeon, U. S. V., has been detailed as chief surgeon of the ship. The Daughters of the American Revolution will provide a steam launch to be used as an ambulance boat, and a library will be donated by members of the Stock Exchange in this city.

The Yellow Fever.—There is no cause for alarm in the report that yellow fever prevails among the troops in Cuba. There have been thus far about three hundred cases, but the disease is in an exceptionally benign form, the mortality thus far having been proportionately less than that from typhoid fever at Camp Alger and at Chickamauga. Now that the soldiers can be removed from the trenches, where they were often in water up to their hips and exposed in the intervals of rain to the vertical rays of the sun, and sent to camps on high ground, there is every reason to hope that the number of those attacked will grow less while the percentage of recoveries will increase. It is the announced intention of the military authorities to garrison Santiago with immune troops as soon as these can be sent from the camps where they have been waiting. The transport *Resolute*, carrying immune surgeons and nurses, and loaded with tons of supplies for the sick and wounded, sailed from this port on July 19th. The chief of the medical staff on the vessel is Dr. Thomas O. Summers, of St. Louis, now a surgeon of volunteers with the rank of major. Drs. Aristide Agramonte, and Fernandez de Ibarra, of this city, were among the number. The staff of nurses included seventy-three men and eight women, all of whom are immune and have had experience in the care of yellow-fever sufferers. The Red-Cross Society in New York, in answer to a request from Surgeon-General Sternberg, has been busily engaged in enlisting immune nurses, both men and women. All yellow-fever immunes who are willing to become nurses have been directed to make application at the Red-Cross Hospital, 233 West One Hundredth Street. A dispatch from Santiago announces that Dr. and Mrs. Lesser and four of the Red Cross have been down with yellow fever, but are now convalescent. The transport *Seneca*, with ninety-nine sick and wounded from Siboney, arrived at Old Point Comfort on July 18th, but as there were three cases of yellow fever aboard the vessel was immediately ordered to this port, and the sick and wounded were taken to the quarantine hospitals for treatment. Dr. Doty, health officer of the port, has made the suggestion that all those ill with yellow fever be brought directly here, where the facilities for isolation are complete. It is certain that none of the sick and wounded will be landed at any ports south of New York and they may be taken still farther north. There is a naval fever hospital at Widow's Island, off the coast of Maine, which is supplied with everything needful for the treatment of yellow fever. Recently all the buildings have had an overhauling, new supplies have been sent there, and surgeons immune from the fever have been detailed to report there whenever needed. It is not believed that any cases of yellow fever will develop on the fleet, but it is quite probable that, since the army has no such station, the facilities of Widow's Island will be offered to the war department, should the necessity arise of sending a large number of yellow-fever suspects to the North. There is no yellow fever in Florida, either at Tampa or at Key West, and it is improbable that any cases of the disease will occur there so long as the Havana blockade continues and the troops from southern Cuba are brought directly here. Some malicious person started a rumor that yellow fever existed at Tampa, and now the State authorities are hunting for him. If caught he will be punished under the present laws by a fine of $1,000 or imprisonment for six months.

The Late Dr. Joseph O'Dwyer.—At the meeting of the section on diseases of children of the American Medical Association, held at Denver in June, it was moved and carried unanimously that "a memorial committee" be appointed to commemorate the late Dr. Joseph O'Dwyer. This committee was authorized to collect money, and to act with other bodies for the same purpose. The committee is composed of Drs. Louis Fischer, New York, chairman; J. P. Cozer Griffith, Philadelphia; F. X. Waxham, Denver.

What Became of the Red-Cross Supplies.—*La Region*, a newspaper published at Matanzas, says that all the bread made at the bakehouses there is "improved" with the flour brought to Matanzas for the reconcentrados, which shows that the latter never got it. The flour was sold to the bakers by the Spanish officials after the Americans left the place in April.

Ptomain Poisoning.—Over one hundred persons who had attended a lodge meeting at Summit, N. J., on the evening of July 14th were seized during the night with symptoms of ptomain poisoning. The cases were all mild and none of the sufferers died. The poison was supposed to have been distributed in some potted ham eaten in sandwiches. At Camp Alger on July 19th, fifty-five men were suddenly taken ill with symptoms of poisoning. The trouble was traced to hash which the men had eaten at breakfast, which was probably made of meat which had become tainted.

Medical Examinations to be More Strict.—Considerable complaint was made at the beginning of the war of the alleged unnecessary severity of the medical examination of the volunteers, many of them who were members of the national guard and seemingly in good condition having been rejected. It appears, however, that the examinations, instead of being too severe were in many cases not severe enough, for a general order has just been issued from the adjutant-general's office requiring closer attention in future to the physical condition of men examined and accepted for service.

Typhoid Fever at the Camps.—Fifty cases of typhoid fever have been reported at Camp Alger, and with the purpose of stopping the epidemic the troops are being moved to Dunn Loring, three miles away, where the water supply is better. At Chickamauga there were eighty cases among the fifty thousand troops, chiefly raw recruits.

Dr. R. O. Moffat, a young physician of Toronto, died in a dentist's chair on Monday. He took chloroform to have six molar teeth extracted, and died while the operation was in progress. All the teeth had not been extracted when he began to recover from the effects of the anæsthetic, and more was given him, when he died.

Obituary Notes.— Dr. John Hewitt Wilson, of this city, died suddenly of heart disease on July 17th. He was born in 1819, and was graduated in medicine from the University of Glasgow in 1844. Soon after graduation he came to this country and practised here up to the time of his death.—Dr. William H. Hodgman, of Saratoga Springs, N. Y., died of chronic nephritis on July 15th, at the age of forty-seven years. He was a graduate of the College of Physicians and Surgeons, New York, in 1873. He was for some time health officer of the village.—Dr. Alan Penneman Smith, of Baltimore, died at his home in that city on July 18th. He was born in Baltimore in 1840, and was a son of the late Dr. Nathan R. Smith. He was a graduate in arts of Princeton, and received his medical degree from the medical department of the University of Maryland in 1861. Dr. Smith was one of the original trustees of the Johns Hopkins University, and was connected with nearly every hospital and medical institution in Baltimore. He is survived by six children, one of whom is a medical practitioner. Dr. Smith had a wide reputation as a skilful and successful lithotomist at a time when that operation was more frequently performed than it is at the present day.

Only Trained Nurses Wanted.—So many applications have been received from women who have had little or no experience in nursing, that the officials of the Red Cross Society in New York have issued a notice that only professional nurses in sound health are wanted or can be accepted. The service required is of the most exacting kind, and consequently a good physique is as necessary as are professional training and experience.

The Non-Combatants.—In a recent issue the *Evening Post* says: "We may soon be hearing more of the services of forgotten heroes at Santiago—the army surgeons. With hostilities at an end, more attention will be given to the work done in hospitals; but the heroic qualities of the medical staff have been displayed on the field as conspicuously as those of the men in the fighting-line. Under fire, without the moral support of being one of the combatants, their courage and self-devotion are fully as great as can be found in the front ranks. Surgeon Church exposed himself as freely as any of the Rough Riders, and his work of relief was as gallant as their charge." And we may add that Surgeon Gibbs was the first commissioned officer of the United States forces to fall on Cuban soil.

A New Bullet for the Indian Army.—A description of the new service bullet which has been invented to supersede the Dum-dum bullet was published in the *Times* of June 28th. The Dum-dum bullet was introduced in India for the purpose of stopping the rush of fanatics ("ghasi"). It is a solid bullet of hardened lead enveloped in nickel, all but the point, which was left bare, so that on impact the bullet "set up," or expanded, inflicting much more severe wounds than the fully enveloped bullet, which in most cases passed through the body unaltered, much as if it were a bolt of steel. It is stated that the new service bullet is of the same diameter (0.303), the same length (1⅝ in.), and the same weight (215 gr.) as the Lee-Metford. "The case is of nickel, the base only being left empty" (*sic*)—it is evident here that "case" means the "envelope" of the bullet, not the cartridge case. The conical end is left empty, and when it strikes a man burrs, opens backward, and lodges in the body, penetration being lessened and shock increased. We have not seen the bullet in question, and are dependent on the *Times* report; but as we read it the new bullet seems in some ways to resemble the later-pattern Snider bullet, in which there was a cavity in the conical apex, which, containing air compressed on impact, burst open violently and inflicted most severe wounds. In the bullet it would appear that the cavity will be formed by the nickel envelope being left empty in the nose or apex, and on impact the compressed air will act as an explosive, burst and burr the envelope, which, spreading open, will present a large striking-surface, and cause immense injuries to trunk and limbs. It would be interesting to know if any experiments with this new bullet have been made on the bodies of animals in the presence of military surgeons, and, if so, what their report has been. Professor v. Bruns made some incisive remarks on the Dum-dum bullet, going so far as to call it an inhumane projectile; but if the new service bullet acts as it is reported to do, probably some stronger language will result.—*British Medical Journal.*

A Tropical Hospital.—A writer in the *Hospital* mentions a novel feature of the new general hospital for Europeans in Calcutta, India, the cornerstone of which was recently laid, which consists in a system of ventilation during the hot and rainy seasons by cold and dried air. During the hot and rainy seasons Calcutta has a temperature ranging from 85° to 95° F., and a humidity which frequently reaches 90 per cent. It is proposed to establish a uniform temperature in the wards, of from 75° to 80° F., and a humidity reduced to about 60 per cent., as a necessary part of the process of cooling the air.

Saco Pool.—Dr. Frederic Bacon, of Omaha, writes concerning Saco Pool, recently mentioned among the health resorts of Maine, that there is no such resort. The Pool, he says, is a peninsula adjacent and connected to Biddeford, which lies across the river from Saco, and it is, therefore known as Biddeford Pool, although situated nine miles from the city proper. The Pool has no shade trees, but makes a pleasant resort for one desiring complete rest from the noise and bustle of city life.

The Section on Tropical Diseases.—The programme of the new section on tropical diseases at the approaching meeting of the British Medical Association in Edinburgh has been published. Set discussions will be had on the following subjects: 1. "The Unclassified Fevers of the Tropics," to be opened by Brigade-Surgeon-Lieutenant-Colonel Crombie: 2. "Beriberi in Temperate Climates," to be opened by Dr. Conolly Norman, Dublin; 3. "The Epidemic of Plague in India," to be opened by Dr. W. J. R. Simp-

son, late of Calcutta. The following papers will be read: "Sketch of Disease at Hong-Kong in 1865 among the Troops, with Views, Charts, etc.," by Surgeon-Major Black; "Abdominal Surgery in the Tropics," by Surg.-Capt. E. Harold Brown; "Surgical Requirements of the Tropics," by Mr. James Cantlie; "The Malarial Problem in its Epidemiological Aspects," by Dr. Andrew Davidson; "Plague in India," by Prof. W. M. Haffkine; "Enteric Fever in Armies and Tropical Climates," by Surg.-Maj.-Gen. J. B. Hamilton; "Training of Regimental Officers in the Prevention of Disease in the Army in Tropical Climates," by Surg.-Capt. Louis Hughes; "Appearance of Pigmentation in Lymphocytes in Relation to the Diagnosis of Malaria," by Dr. Patrick Manson; "(1) Pellagra; (2) The Treatment of Acute Dysentery," by Dr. Sandwith, of Cairo; "Clinical Aspects and Treatment of Malarial Fever," by Surg.-Maj. Tull Walsh; "Malarial Eye Affections," by Surgeon-Major Yarr. The officers of the section will be: *President*, Dr. Patrick Manson; *Vice-Presidents*, Drs. Andrew Davidson, Andrew Smart, and William John Ritchie Simpson; *Honorary Secretaries*, Mr. James Cantlie and Surg.-Capt. M. Louis Hughes.

The Offer of the Health Board.—The president of the New York board of health has written to Surgeon-General Sternberg, offering the services of the physicians in the health department to take care of the sick and wounded soldiers brought to this port.

Abdominal Bands for Soldiers in the Tropics.—The question as to whether the wearing of a flannel band over the abdomen affords any protection against diarrhœal disease in the tropics is about to be answered officially by a board of army surgeons in Washington. A large number of charitable persons and organizations all over the country (the picking of lint, which was their occupation during the civil war, being done away with) have begun the manufacture of the so-called cholera bands for the use of the soldiers, and the attention of the medical department of the army has been called to the matter. The result was the detail of the board, to be presided over by Surgeon Dallas Bache.

In France, at the coming "world's fair," there will be a department devoted to progress in medical and allied sciences. This country has much to be proud of in these branches, and steps should be taken early to secure fair representation.

The Degree of M.D. in Prussia.—The Prussian minister of education has decided that an M.D. degree will hereafter be conferred by the universities of that country only upon candidates who have passed the State examination prescribed by the laws of the German empire. The academical degree will now be tantamount to a license to practise. Under the former anomalous conditions a doctor of medicine who had not passed the State examination might render himself liable to prosecution by putting his title on the street door or the wall of his house (thereby misleading the public), although he was at perfect liberty to attach it to his name on the doorplate of his private apartments.

An Accident to the Prince of Wales.—On Sunday last the Prince of Wales fell on the stairs at a country house where he was visiting, and fractured his patella. On Monday, while he was being carried to the railway station in a chair, the latter broke and let its occupant fall. No new injury was sustained, but the prince received a very unpleasant shaking of his broken kneecap. As he has the misfortune to be an exalted personage, his surgeons will probably fear to treat his injury radically, with the result that the poor man will be lame for life.

Major Ogden Rafferty, a brigade surgeon in the army, well known in New York, where he made his medical studies, has been ordered to report in person to the surgeon-general.

The Prize of the South Carolina Examining Board.—A prize of $50 was offered by the medical examining board of South Carolina for the "best general average" at the State examination, held May 16th, 17th, and 18th. The fortunate winner was Dr. R. E. Hughes, of Laurens, S. C., formerly of Virginia.

The German Emperor's Donation to the Red Cross.—Emperor William has donated 10,000 marks to the Red Cross Society for the benefit of wounded Spanish and American soldiers.

Civil-Service Examination for a Diagnostician.—Notice is given by the municipal civil-service commission, of the city of New York, that a competitive examination for the position of diagnostician will be held at the office of the commission, in the new criminal court building, Centre, Elm, Franklin, and White streets, on Tuesday, July 26th, at 10 A.M. The subjects of examination will be technical knowledge and experience. Persons desiring to make application or seeking for further information may address the secretary of the commission, Mr. Lee Phillips, at the address above given.

Malarial News.—Blackwater fever is not malarial, according to Koch, but is rather an expression of poisoning by quinine. The same learned bacteriologist and therapeutist has arrived at the conclusion that persons who have suffered from an attack of malarial fever and have recovered therefrom without the aid of quinine have acquired immunity. The native Africans, he says further, never have malaria, and their exemption is due to hereditary immunity.

A Hospital Service in Alaska.—It is proposed to erect and maintain a chain of hospitals extending from Seattle to Circle City in Alaska. One building has already been erected in Skaguay, and contracts have been let for others at Victoria and Juneau. Other places selected are Lake Bennett, White Horse Rapids, Stewart River, Dawson City, and Circle City, and the service will be further extended as gold discoveries lead to the creation of new settlements. The support of the hospitals is to be secured by an annual subscription of $12 from miners and others going to the Klondyke. About ten per cent. of those treated up to the present have been charity patients.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, June 2, 1898.

EDWARD G. JANEWAY, M.D., PRESIDENT.

The Successful Treatment of Hæmophilia by the Injection of Serum.—DR. ALBERT FRY, of Newark, N. J., read this paper. Hæmophilia, or bleeder disease, he said, was exclusively a hereditary tendency to hemorrhages, with healthy integument, and abundant and marked extravasations of blood following the slightest injury. The hemorrhages were accompanied by swelling of the joints, resembling rheumatic arthritis, which was due to the extravasation of blood into the joint. Anæmia was a marked feature of this disease. Little or nothing was known about the pathology of hæmophilia. It had been claimed that the cause of the bleeding was a malformation of the blood-vessels, or a deficiency in one or the other tissues making up the same; that it was due to a deficiency of the fibrin-forming elements, or to a combination of these causes. Virchow ascribed the cause to the lumina of the blood-vessels, claiming that they were too small for the amount of blood circulating through them, and that with increased tension a rupture of the fine walls occurred. As to etiology, the speaker claimed that the most marked feature of this disease was its hereditary tendency. Another feature was the fact that it was more frequent among the male than among the female members of a hæmophilic family. Men coming from a bleeder family did not, as a rule, generate bleeder children, though they might themselves be or not be bleeders. Mothers, the daughters of a bleeder family, though themselves free from hæmophilia, might give birth to hæmophilic children. The tendency to bleeding seemed to be derived from the female only. The diagnosis was not very difficult, inasmuch as the uncontrollable hemorrhages revealed the state of affairs. Treatment was very unsatisfactory, if followed out according to the materia medica of older days. Heredity was a very strong indication for the prophylactic treatment. Grandidier had laid down the following rules for the prevention of the spread of the disease: (1) All females coming from a bleeder family, whether themselves free from the disease or not, should not marry. (2) All males who were not themselves bleeders should be allowed to marry. (3) Male members of a bleeder family, of which it had been proven that other male members had generated bleeders with daughters of families not so affected, should not be allowed to marry. According to the speaker, individual prophylaxis was of the utmost importance, and should be conscientiously carried out from infancy. All such operations as severing the lingual frænum, circumcision, removal of nævi, piercing the ears in female children, extracting teeth, etc., should not be resorted to at all, or only with the utmost caution. Vaccination had not been shown to cause trouble and might be resorted to with impunity. Leeches and wet-cups must be avoided. Great care must be exercised when the children commenced to walk, inasmuch as the most insignificant injury caused by falling might give rise to enormous joint swellings. When the children grew older, calisthenics, gymnastics, and rough play should be strictly avoided. At maturity, when the question of a livelihood would arise, only occupations of a more or less sedentary nature should be chosen. The general treatment was more or less on the tonic order. Inasmuch as the bleeders were anæmic, the mineral and vegetable tonics might be used. All food which had a tendency to irritate and to cause congestion should be avoided; also the stronger alcoholic beverages. Milk, lemonade, and cooling drinks were advisable, as was also frequent change of climate. As regards drugs, the prolonged use of chloride of iron had been highly recommended. Dr. Fry said he had given this remedy a thorough trial in one of his cases, and instead of benefiting the trouble it seemed to aggravate it. Others had advised the mineral acids, sugar of lead, acetate of lead, sulphate of magnesium, Glauber's salts, etc. The two latter remedies seemed simply to flush out the bowels and thus removed all tendency to congestion. The actual hemorrhages had been treated with ergot, hydrastis, acetate of lead, opiates, argentum, styptics, turpentine, tannic acid—in fact, almost every drug in the pharmacopœia, but without avail. As a rule, the bleeding continued until a stage of syncope was reached, which seemed to be in these cases nature's own method of checking the hemorrhage. The mechanical treatment consisted in affording absolute rest to the joints by plaster-of-Paris bandages, and by compression of the main arteries to prevent bleeding from their respective branches. The latter expedient had always been followed by sloughing of the injured parts. Ice had proved favorable, inasmuch as it relieved the pain and congestion. Regarding serum therapy, Dr. Fry said that in January, 1898, his attention was called to an article by Drs. Feltz and Pigot (*Gazette Hebdomadaire*, No. 83, 1897), who had obtained excellent results in a very severe case of purpura by injections of artificial serum. After the first injection of two hundred and fifty cubic centimetres the general condition of the patient became better and after two more injections the symptoms of purpura disappeared entirely. These authors had suggested the same treatment in hæmophilia. Dr. Fry said he had thus far treated three cases of hæmophilia by injections of horse serum, with very satisfactory results, although he still looked upon the method as an experiment. His patients were three brothers, members of a family of eight boys, five of whom were bleeders. About two years ago one of the bleeders fell and fractured his thigh, and died one week later from intramuscular and osseous hemorrhage. A second brother, also a bleeder, developed appendicitis last fall, from which he recovered, but which was shortly afterward followed by intestinal hemorrhage and death. In the three remaining bleeders in the family the serum treatment had been employed by Dr. Fry. The first was J. M——, aged seventeen years. This patient, up to the time this treatment was commenced, had constantly suffered from ecchymoses, swollen joints, and actual hemorrhages. In March of this year he was suffering from a severe swelling of the elbow-joint, and on March 17th the first injection of the serum was made, the quantity being twenty cubic centimetres. The site of the injection was the muscular tissue of the posterior part of the thorax, just below the inferior angle of the scapula. The puncture produced well-marked bleeding, which was controlled by dressing with a Bernay's sponge. On the following day there were well-marked pain and swelling at the site of the injection, which gradually disappeared. The swelling in the elbow-joint was less marked and less painful. After a second injection on March 20th, the elbow-joint became normal; there was no bleeding at the point of puncture on this occasion. Up to the present time this patient had received three hundred cubic centimetres of the serum; his joint troubles had entirely disappeared, he felt well, and recently, when he accidentally cut his finger, the bleeding was slight. During the course of this treatment the patient's urine was frequently examined, with negative results. Practically, no constitutional symptoms followed the injections. In the second case reported by Dr. Fry, in which the principal lesions were confined

to the joints, two hundred cubic centimetres of serum had been injected up to the present time. The first injection was made on April 3, 1898, and was followed by a rapid improvement in all the symptoms. The only complication in this case was a severe generalized urticaria, which appeared two days after the first injection. In the third case the patient was a young man, twenty-three years old, who suffered from periodical meningeal hemorrhages, giving rise to severe headache and a state of acute dementia. In this case only ninety cubic centimetres of the serum had been used up to the present time, as each injection had given rise to high fever and marked urticaria. His periodical attacks of headache, however, had decreased in severity and his mental condition was clearer. The following conclusions were drawn by the author: (1) That hæmophilia was a disease due not simply to a malformation of the blood-vessels, but also to a certain malcondition of the blood, marked by a deficiency of one or more of its fibrino-plastic elements. (2) If due to a deficiency of these elements, and amenable to treatment with a serum so poor in these elements as that of the horse, more gratifying results could probably be achieved with a serum derived from animals whose blood was richer in those elements.

Dr. B. Farquhar Curtis said he knew of no condition that the surgeon had to meet which was harder to overcome than this tendency to bleed which was observed in hæmophilia. The ordinary methods for arresting hemorrhage proved of no avail. He hoped that something practical would come out of the method suggested by Dr. Fry, and promised to give it a trial the next time an opportunity offered itself.

Dr. H. D. Chapin said that, as all drug methods had proved unavailing in the treatment of hæmophilia, he thought the medical profession was indebted to Dr. Fry for his suggestion to try injections of blood serum. The possible danger of injuring the kidneys by this method of treatment, however, should be borne in mind. The speaker said that some time ago he had made a series of experiments in this connection, injecting into a number of dogs and guinea-pigs from twenty to thirty cubic centimetres of blood-serum every day for ten days; all of them developed cloudy swelling of the kidneys. In another series of cases, in which the injections were made less frequently, the cloudy swelling did not appear. Another point was whether the improvement in Dr. Fry's cases was permanent or only temporary. The cases had not been under observation long enough to prove that the hæmophilia was completely controlled. If these patients after two or three years still showed this improvement, then the serum treatment was certainly a great triumph. It was known that a certain number of cases of hæmophilia improved with age, the tendency of the blood to clotting increasing.

Dr. Mary Putnam Jacobi said that hæmophilia implied a congenital deficiency in the elaboration of the blood and the blood-vessels. Spontaneous rupture of the blood-vessels, without any lesion of the surface, occurred so frequently in these cases that the trouble was undoubtedly not confined to the composition of the blood. Women were more exempt from this disease than men, the proportion being one to twelve, and the fact had frequently been noted that a hæmophilic woman during confinement was not especially liable to suffer from excessive hemorrhage. This was interesting, as the bleeding from the uterus was expected to be controlled by contraction of the muscular tissues and not by contraction of the blood-vessels themselves. Dr. Jacobi then referred to the experiments of Arthus, Pikelharing, and Bendict in connection with the subject of the relation of the lime salts to the coagulation of the blood. The latter writer had made the assertion many years ago that there was no cell formation without lime, and it might now be said that there was no fibrin molecule which did not contain an atom of lime. It had been shown that injections of peptone into animals would entirely destroy the coagulability of the blood, besides paralyzing the heart and greatly lowering the blood pressure; but by the addition of lime to the peptone before it was injected its toxic power was entirely destroyed. Wright, of London, had made some experiments with chlorate of calcium in cases of hæmophilia, and had reported two instances in which the administration of this drug arrested prolonged hemorrhage. The direct injection of blood serum into the tissues had considerable advantage over the above methods of treatment, because the serum contained lime in its organic combination. Dr. Fry, in his paper, had made the statement that hæmophilics were anæmic. Dr. Jacobi said that, on the contrary, many authorities, among them Virchow, held that the condition of the blood was rather that of plethora than anæmia, and that there was an overabundance of blood corpuscles.

The President, Dr. Janeway, said that the following case, which he recently saw in consultation, might be of interest in connection with this subject. The patient was a young man, aged twenty-five years, who, while walking across the floor, suddenly became paralyzed from the waist down. A myelitis was at first suspected, but on examining the patient the speaker found the limbs stiffened out in a manner which suggested spinal hemorrhage. The paralysis gradually extended and the patient died in two weeks. The autopsy showed a hemorrhage within the subarachnoid space, which had broken through and filled the entire cervical canal. The case was interesting, as it explained a sudden paralysis in a person with a hemorrhagic tendency. It was learned that the boy's brother had lost an eye as the result of a retinal hemorrhage, and the boy himself had always bled freely after even the slightest cut. It was on this account that an operation was not deemed advisable.

Dr. Fry, in closing, said that in his cases the urine had been examined after each injection of the serum, and was always found free from albumin. As regarded the treatment of hæmophilia with lime salts, he said that one of his cases had been treated with various preparations of lime for two years, and the patient died from an intestinal hemorrhage. The speaker said he did not claim that the hæmophilia was solely the result of a lack of the fibrin-forming elements of the blood; it was also due to a defect or malformation of the blood-vessels. As regarded the permanence of the result in his cases, he did not care to venture an opinion at present.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, May 11, 1898.

T. Mitchell Prudden, M.D., President.

Case of Acute Yellow Atrophy of the Liver.—Dr. F. C. Wood presented a specimen of acute yellow atrophy of the liver, taken from a woman, thirty years of age, who had been operated upon for a uterine fibroid. At the time of the operation it was found that there was a large pyosalpinx on the left side. For about three days the case did well; then it was noticed that the conjunctivæ were very yellow. On the fourth day muscular twitchings developed, limited to the hands and feet. The following day she was comatose, and death occurred twenty-four hours later. During the last two days the jaundice was very marked. At the autopsy the liver and kidneys presented the chief points of interest. The liver was extremely soft so that it did not retain its shape when removed from

the body. On section, it presented a dead yellow hue. There was no obstruction to the flow of bile, and no lesions were discovered in the intestinal tract. The kidneys were very pale, the markings were lost, and the organ was deeply tinged with yellow. Microscopical examination of the liver showed complete degeneration of the liver cells, and a great deal of fat in the cells. The kidneys showed the lesions of acute degeneration. The tubular epithelium was swollen and did not stain. Cultures taken from the liver gave streptococci in one tube, but further investigation seemed to show that this was a contamination. As the woman had been well before operation, and there was a likelihood of infection having taken place from the pyosalpinx during operation, it seemed probable that such an infection was the underlying cause of the condition found at the autopsy. A section of the liver was exhibited under the microscope.

Dr. Eugene Hodenpyl said that Ziegler stated in his text-book that the lesions of acute yellow atrophy of the liver usually began around the periphery of the lobule, and extended toward the centre. In a specimen at the laboratory of the College of Physicians this condition was reversed. From an examination of the sections from the case just presented it seemed probable that the process had from the onset involved the parenchyma of the lobules uniformly.

Case of Suppurative (Streptococcus) Portal Phlebitis, with Rupture and Fatal Peritoneal Hemorrhage.—Dr. Eugene Hodenpyl presented specimens from such a case. The patient was a young man who had been sick for less than three days with symptoms of a mild and indefinite character. Death took place quite suddenly from a large peritoneal hemorrhage. He was twenty-five years of age, temperate in his habits, and had enjoyed good health previously, with the exception of an attack of typhoid fever three years before. His last illness began with a chill, followed by general pains throughout the body associated with an occasional attack of vomiting. The next day there was some little pain all over the abdomen. On his admission to hospital his temperature was 98° F.; pulse, 66; respirations, 24. The examination of the urine was negative. There were no abdominal tenderness and no tumor. The chief complaint was of abdominal pain and prostration. The diagnosis was neurasthenia. Ten hours later he suddenly collapsed; there was "air hunger," and death occurred without further premonitory symptoms. At the autopsy the abdominal cavity was found distended with clotted and fluid blood, and the organs were quite pale. On the under surface of the liver in the transverse fissure was a small sac, and on one side of the sac was an irregular opening. From its position the sac was regarded as a dilated portal sinus which had ruptured. The liver was pale, but no lesions were detected on macroscopical examination. Unfortunately no cultures were made from the various organs. On microscopical examination it was found that the sac was actually the wall of the portal vein, and that this wall was extensively infiltrated with leucocytes and fibrins, and that there were numerous streptococci present. Sections through various portions of the liver revealed a suppurative portal phlebitis throughout the entire organ, associated with the presence of streptococci. No gross lesions of the intestinal tract were discovered.

Rupture of an Abdominal Aortic Aneurism Simulating Tumor of the Kidney.—Dr. Hodenpyl also presented a specimen of false aneurism which had ruptured into the retroperitoneal tissue, forming a mass which simulated a tumor of the kidney. The specimen was taken from an old syphilitic who for one year previous to death had had a dull constant pain in the epigastrium, with occasional attacks of vomiting. Four days before death almost complete suppression of urine suddenly developed, associated with very marked prostration and pallor. He was admitted to hospital because of the urinary symptoms. Physical examination showed a large mass in the left side, in the region of the kidney. Suspecting a tumor of the kidney, Dr. A. B. Johnson performed an exploratory laparotomy on the left side, and opened up an enormous blood sac, from which the hemorrhage was most profuse. The patient died shortly afterward. The autopsy showed in the thoracic portion of the aorta a small aneurism, and in the abdominal aorta, near the site of the cœliac axis, a large pouch was found lying on the anterior surface of the aorta and communicating with a small sacculated aneurism. On the left of the false aneurism was a ragged perforation. A large quantity of effused blood was found behind the peritoneum.

Dr. Henry Power said that the first case reminded him of an autopsy made by Dr. Hodenpyl some time ago upon a woman who had died of rupture of the bladder. In the veins of the spinal cord there had been found an infiltration of round cells, apparently without any cause. No bacteria were present. Possibly the greater distance from the intestinal canal might explain this fact. A careful study of the literature at the time brought out an exact description and accurate drawings of the existing condition, in Ziegler's "Pathology," under the head of "Syphilitic Changes."

Fatal Case of Anthrax.—Dr. Charles Norris presented specimens from a case of anthrax, occurring in a longshoreman who had come to the Vanderbilt Clinic on April 5th. The man said that he had been in the habit of handling hides, and had last done this seven days previously. On April 1st, he noticed a small pimple over the left side of the jaw, but he felt well until four or five hours become coming to the hospital; at that time there had rapidly developed œdema of the face and neck, associated with malaise and fever. Examination showed a slightly depressed pustule, about the size of a five-cent piece; the epithelium around the edge was elevated by an accumulation of clear, colorless serum containing anthrax bacilli in vast numbers. A mouse inoculated with one loop of an agar culture died in eighteen hours. The pulse was rapid, intermittent, and small. On April 6th, the pustule was excised, and a long incision was made along the neck down to the clavicle, to relieve the œdema. On examination of the blood it was found to be sterile. The man died three days after the onset of the œdema. The chief clinical symptoms were the œdema and the great prostration. The autopsy was made by Dr. Hodenpyl seventeen hours after death. The subcutaneous tissues of the neck, thorax, and abdominal wall, and the tissues of the mediastinum, were swollen and very œdematous. The peritoneal cavity contained some turbid fluid. In places, the small intestine was the seat of an extensive hemorrhagic infiltration. The mesentery of the small intestine and the retroperitoneal cellular tissue were the seat of extensive interstitial hemorrhage. The liver was normal in size and in appearance on section. The spleen was enlarged, soft, and congested. The kidneys appeared to be normal. In the sections of the pustule numerous bacilli were seen, occupying the rete mucosum in clumps. Sections of the liver showed areas of degeneration which appeared to be toxic in their origin, as no bacilli could be found in the sections or by culture. The kidney showed only a slight parenchymatous degeneration. Cultures were made at the autopsy, and anthrax bacilli were recovered from the spleen and blood, but not from the liver. From the liver, spleen, and blood numerous colonies of the Friedlander bacillus were recovered. Microscopical specimens from this case were also exhibited.

Dr. W. H. Park said that he was reminded of a case sent about a year and a half ago to the health-department laboratory. Dr. Nammack had excised a large piece from the neighborhood of the eye, yet examination showed only five colonies of anthrax on two plates, and none was found in cultures in broth tubes. This fact illustrated the ease with which the condition might be overlooked. This patient recovered.

Dr. Norris said that he understood it was often difficult in cases which did not terminate fatally to recover the anthrax bacilli from the pustule. About twenty-five per cent. of the cases were fatal when the pustule was on the face, and about five per cent. when the pustule was on the lower extremity.

Demonstration of the Yellow-Fever Bacillus (Sanarelli).—Dr. Charles B. Fitzpatrick said that Sternberg in his recent papers seemed to be of the opinion that Sanarelli's bacillus was identical with his bacillus X. Dr. Fitzpatrick believed that there were well-marked differences between the two bacilli. Sanarelli gave as the diagnostic point of his bacillus its appearance on agar—a concentric growth having an irregular outline. The central part of the colony was dark and was surrounded by a more transparent zone of growth. A specimen was exhibited which was the counterpart of one received from Sanarelli. Sanarelli's bacillus lost very rapidly its characteristic form of growth. Dr. Fitzpatrick said he thought it would be found in time that the bacilli which had been described by Sternberg, Sanarelli, and himself belonged to the colon group. Dr. Sternberg stated in his work on the etiology of yellow fever that his bacillus X was the bacillus coli communis, and was, therefore, not the cause of yellow fever. Dr. Fitzpatrick said that the bacilli (bacillus coli icteroides and bacillus coli concentricus) which he had described in the Medical Record of January 29, 1898, he now believed to be a single, separate, special form of the colon group, and would designate it as the bacillus coli icteroides. Its special virulence and other characteristics were sufficient to separate it from the ordinary colon bacillus. This bacillus (bacillus coli icteroides), when grown at 37° C. for about sixteen hours and then kept at room temperature for twenty-four hours, forms on agar either ordinary round colonies, about one millimetre in diameter, with a dark central point, or concentric colonies, about three to five millimetres in diameter, with a dark, round, central area surrounded by a transparent zone, with a somewhat raised and irregularly round border. It differed from the bacilli icteroides (Sanarelli) in having, when grown in bouillon, a distinct flaky surface growth and a well-marked deposit. Dr. Fitzpatrick believed that the bacillus coli icteroides could very well be the agent of infection and death in yellow fever, notwithstanding that it belonged to the colon group of bacteria.

Melano-Sarcoma of the Vagina.—Dr. F. S. Matthews reported a case. Next to the Fallopian tube no part of the female genital tract, he said, was so infrequently the seat of primary sarcoma as the vagina. Of the primary sarcomas of the vulva a large per cent. were melanotic. In this they differed from those of the vagina. A search through the literature of the subject had revealed only one undoubted case. This was reported by Parona (*Ann. univ. med. Chir.*, Milan, 1887, page 241). Veit ("Handbuch für Gynäkologie," 1897) in his article on tumors of the vagina had said this was the only reported case of melano-sarcoma primary in the vagina. He spoke of it as a "melanotisches Spindelzellen Sarcoma in Septum vesico-vaginale." In the preparation of this article Veit had collected forty-seven cases—seventeen in children and thirty in adults—the case of Parona being among the latter. Several cases of sarcoma of the vagina had been reported since the appearance of Veit's article. Two of these were reported by V. Horn (*Monatschrift f. Geb. u. Gyn.*, iv., 1896, page 409). Though they were not melano-sarcomas, one of them deserved mention in this connection. The patient was a resident of Hamburg, aged forty-nine years, married. She had had seven children and five abortions. The last child was ten years of age. She had reached the menopause five years previously. At time of operation she had been troubled for five months with a foul-smelling bloody vaginal discharge. She was operated upon twice. At the first operation the primary tumor in the vagina and also sarcomatous inguinal glands were removed. The tumor returned speedily in the vagina, at the orifice of the urethra, in the labia, and in the inguinal glands. The primary tumor was an alveolar spindle-celled sarcoma free from pigment, but the uninvolved mucous membrane was pigmented, the pigment being chiefly confined to the corium. The interesting feature, however, was that the secondary deposits, both those removed at the primary operation and later, were deeply pigmented. Horn stated that this was not to be considered as melanotic sarcoma. The presence of pigment in the secondary deposits, he said, was due to the hemorrhagic character of the growth, the blood pigment being taken up by the cells of the new growth. The speaker said that this left the case of Parona's as the only one reported of primary melano-sarcoma of the vagina. To this the report of a case occurring in the service of Dr. George M. Tuttle at Roosevelt Hospital might be added. The tumor came into the speaker's hands through the kindness of Dr. Eugene Hodenpyl, the pathologist to the hospital.

A. K——, aged forty-two years, married, housewife, Russian. Admitted to hospital, November 20, 1897; discharged, December 3, 1897. Menopause eleven months ago. Seven children, the last ten years ago; no miscarriages. The history of the present illness was that for two months she had had a feeling of lack of support and falling of the uterus, and recently had felt something in the vagina. She had also had a slight dragging pain. The discharge had not been profuse but was increasing.

On physical examination the uterus and appendages were apparently normal. There was a tumor growing from the anterior vaginal wall. It began an inch behind the meatus urinarius and extended backward to within an inch of the cervix uteri. The growth measured an inch in its lateral diameter. It was of the size of a hen's egg, had a rough, cauliflower-like appearance, bled easily, was hard, and very dark colored. The growth was removed with knife and cautery. There was very little bleeding. The vagina was packed with iodoform gauze. The patient left the hospital improved but a large granulating area persisted over the anterior vaginal wall. The tumor, when removed, was oval, of about the size of a hen's egg. In its thickest portion it was twenty to thirty millimetres thick and was thrown into irregular elevations. Microscopically, it was a large round-celled melano-sarcoma. It lay upon the muscular wall of the vagina but had not invaded it. In the central portion of the tumor it was superficial and presented a ragged surface denuded of epithelium; laterally it was covered by the vaginal mucous membrane. The tumor became thinner toward its lateral portions and appeared at the periphery as a growth not more than one millimetre in thickness, dissecting its way immediately under the mucous membrane and sending prolongations up into the papillæ. The pigment showed no definite arrangement. Those cells which contained it were filled with it so as to be perfectly opaque. The number of pigment cells in different portions of the tumor was variable. No part of the tumor was entirely free from pigment. At the advancing edge the cells were pigmented, just as in the central portions

of the tumor. There was no definite grouping of pigmented cells about capillaries, as in Horn's case; hence the occurrence of pigment could not be explained as in his case, by supposing the cells to have derived their pigment from extravasated blood. The cells of the tumor were large; they were round, oval, polyhedral, with large distinct nuclei. The specimens presented were stained with hæmotoxylin and eosin, and with Van Gieson's picro-acid fuchsin. The tumor undoubtedly had its origin in the connective tissue of the papillæ of the mucous membrane and was spreading by continuity of tissue, showing no tendency as yet to involve the muscular wall.

Varieties of the Bacillus Diphtheriæ Fatal to Guinea-Pigs without the Production of the Diphtheria Toxin.—Dr. W. H. Park presented a paper written by Miss Louise Dudley Davis. It was entitled "Preliminary Report on a Bacillus Resembling the Bacillus Diphtheriæ Found in Certain Scarlet-Fever Cases." The writer stated that during the past winter cultures had been taken from many cases of scarlet fever at the Willard Parker Hospital in order to demonstrate the presence or absence of streptococci. In one case of ear abscess, complicating scarlet fever, the examination of the discharge unexpectedly revealed a short bacillus, resembling that of diphtheria. In a second case of ear abscess this bacillus was also found. Agar plates showed spreading colonies with light, uneven edges, and dark centres, but the growth was a little heavier than that ordinarily presented by the diphtheria bacillus. The presence of the bacillus in these two cases resulted in the taking of cultures from other cases of suppurative otitis media—twelve in all. Smears from all these cultures showed short bacilli, staining irregularly. In ten cases the bacillus was isolated from cultures taken from the ear abscess, and in all but three of those taken from the throat also. Unfortunately in these three the cultures were taken some days later than were those from the ear. All of the cases presented clinically typical appearances of scarlet fever, but the unusual proportion of suppurative otitis media was worthy of note, and might have some connection with the presence of this bacillus. One case developed a membranous exudation in the throat, which gave a culture closely resembling that of diphtheria; but no other cases of diphtheria were in the wards, and the patient recovered quickly. A pig, inoculated subcutaneously with two cubic centimetres of the culture from Case II., died twenty-four hours afterward, and the autopsy showed a general serous peritonitis and marked congestion of the kidneys, liver, and spleen. Plates and cultures from the heart's blood, organs, and tissue at the point of inoculation, showed pure and abundant cultures of this bacillus. The absence of the usual lesion of diphtheria and the presence of signs of septicæmia made the experiment one of great interest. The original culture soon lost in virulence, so that eleven cubic centimetres was necessary to cause death. The bacillus was non-motile, produced acid in glucose bouillon, and did not form gas in fermentation tubes. It produced a general septicæmia, and did not form diphtheria toxin, as shown by the fact that diphtheria antitoxin seemed to hasten rather than retard the death of the pigs. It had not yet been determined whether it produced a toxin of its own, but it seemed probable that it did not do so to any marked degree. The questions which very naturally arose, and which had not yet been answered, were: Was this bacillus an attenuated diphtheria bacillus? Was it a variety of that group? Was it an entirely distinct organism?

Dr. Park also read a communication for Dr. Anna Williams regarding a bacillus possessing characteristics similar to those of the bacillus studied by Miss Davis. This bacillus was obtained from the throat of an individual about six weeks after recovery from diphtheria. The organism was morphologically and culturally similar to a typical diphtheria bacillus. In small doses it proved non-virulent for medium-sized guinea-pigs, but by very large doses (ten cubic centimetres of a forty-eight-hour broth culture in which were mixed the twenty-four-hour cultures from three serum and three agar tubes) death was produced. On autopsy the bacillus was found in all the organs. The inoculation of a quantity of antitoxin sufficient to protect against two hundred thousand times the fatal dose of diphtheria toxin, did not protect the animals against one fatal dose of this bacillus.

Diphtheria Bacillus No. 8.—Dr. Park said that on August 28, 1895, a bacillus had been isolated from a case in which the clinical diagnosis was "tonsillitis." This had proved to be the most virulent bacillus they had ever found, and was possibly the most virulent that had been met with anywhere. It had been sent to numerous laboratories in different parts of the world. This bacillus would kill a medium-sized guinea-pig in a dose of one-two-hundredth cubic centimetre. By keeping it at a temperature of 36° C. and transplanting in bouillon every four days, it had been possible to maintain the same virulence now for nearly three years. The cultures used for toxin production had never been passed through animals.

Dr. Prudden said that this communication emphasized the difficulties felt by all bacteriologists regarding what should be termed "species" in bacteria. Two of the speakers had taken refuge, as most did, behind the term "groups," and perhaps this was as secure a position as it was possible to maintain at the present time. The report, just published, of the committee of the American Public Health Association probably gave the fullest and most carefully considered data for the observation of species. Another point of interest in connection with the paper was the extreme delicacy of the physiological test. Even bacteriologists did not always realize what an extremely minute chemical difference in the biological qualities of the bacteria determined whether or not the product should be poisonous. In some respects this physiological test was the most delicate one in our possession.

Dr. Power said that he had four clinical cases during the past winter in the same family, which were of interest in this connection. The first patient, while away from home in Newark, received antitoxin, though the culture from the throat was reported to be negative. This person recovered and returned home to Montclair. The second patient promptly became sick and came under the speaker's care in the Mountainside Hospital. The patient was very ill, although antitoxin was given, and became severely paralyzed. Two other members of the same family were admitted at the same time with a large amount of membrane in the throat. They were injected with antitoxin earlier than the preceding, and had no paralysis. In none of the four cases were any typical diphtheria bacilli found by the examiners in two health-board laboratories, but streptococci were found in each case.

Focal Necrosis in the Liver, Following Measles in Young Children.—Dr. Rowland G. Freeman presented this paper. He said:

"The action on man and the lower animals of the toxins produced by bacteria without the presence of the bacteria themselves has received much attention recently. Focal necroses have been observed resulting from the toxins of diphtheria, typhoid fever, acute lobar pneumonia, malaria, streptococcus infection, and Asiatic cholera, and the lesions produced have been found to belong to the same general class. Moreover, two toxalbumins of vegetable origin, ricin and abrin, have been found to produce similar lesions. This

subject has been recently carefully studied and investigated by means of animal experiments by Dr. Simon Flexner, of Johns Hopkins' University (Johns Hopkins' Hospital Reports, vol. vi., 1897). The lesions produced by these poisons are widespread, involving the lymphatic system and the different viscera. The gross changes found at autopsy are, however, not usually very characteristic. The lymph nodes are enlarged, particularly near the point of invasion. The liver is often congested and is apt to show fatty change. On the surface as well as on the cut surface there may be seen small white or yellow dots, round or oval in shape, which are not elevated and which vary in size from mere points to areas ten millimetres in diameter. These dots are due to areas of focal necrosis. The small areas of focal necrosis do not produce lesions visible to the naked eye. When distinct, these spots are distinguishable from other similar lesions. In the other organs there are no characteristic gross changes. Congestion may be present. The change which occurs in the lymph nodes or in any of the viscera is that of cell necrosis in the different stages and involving either isolated cells or groups of cells. These changes involve first a swelling of the cell body, the cytoplasm becoming more homogeneous and more refractive, and acquiring an affinity for acid dye (eosin). The cell nuclei first stain more deeply and later lose their staining properties. Fragmentation of the nucleus is frequently seen. In some areas of focal necrosis many of these changes may be studied, the periphery of the area furnishing the earlier lesion while the central part furnishes later stages. This condition, although it has been described as following a number of acute diseases, as just enumerated, has not, so far as I know, been described as following measles. It has therefore been thought that examples of it following this disease may be of interest.

"An epidemic of measles occurred at the New York Foundling Hospital the early part of last winter, the characteristics of which have been described by Dr. W. P. Northrup (*Medical News*, 1898, vol. lxxi., No. 26). It was on the whole more mild than previous epidemics of the same disease in that institution, showing a mortality of only 13.9 per cent. It was not, however, free from cases showing very severe complication, such as gangrene about the mouth, ear, vulva, and anus. In all, twenty-five cases came to autopsy. In the first eleven of these cases no evidences of toxalbumin intoxication were noted, nor were they particularly looked for. The twelfth case, however (the liver of which I pass around), gave such evidence of some unusual lesion that the diagnosis was readily made and all subsequent material was carefully looked over and preserved for microscopic examination. Of the fourteen cases which then came to autopsy, including the first case which was recognized as focal necrosis, in twelve specimens were preserved, cut, and examined, and it is these twelve cases which I report. Of these cases four gave distinct focal areas of necrosis of the liver. In three of these the areas were frequent and quite typical. In the fourth case, although ten separate pieces of liver were cut, only one area of focal necrosis was found. In one of them similar areas were present in the Malpighian bodies of the spleen. In these four cases the patients varied in age from eight months to three years. They died at periods ranging from eleven days to thirty-three days after the onset of the measles. One of the patients was not very severely sick and at the end of two weeks seemed to be convalescing, and remained fairly well for two weeks more when the temperature rose to 104° F.; râles appeared in the chest, and death followed three days later. Of the other three cases all had broncho-pneumonia; one had an ulceration near the anus, and another gangrene of the vulva."

Dr. Prudden said that when such lesions of the nervous system as disseminated sclerosis occurred in later life, and an attempt was made to trace them back, measles was apt to be overlooked. This disease, as well as other more immediately serious infectious diseases, might prove a possible origin of some of these obscure lesions of later life.

Dr. J. H. Larkin said he had been struck by the fact that in the focal necrosis found in measles, as just described, there were very few areas as compared with the number observed in other diseases, *e.g.*, typhoid fever. Nor did he see in the specimen presented that peculiar form of focal necrosis found not infrequently in typhoid fever, in which there was a large area around the hepatic vein, and the liver cells were dead and the nuclei had disappeared. This form could be produced experimentally, which was not the case with the form described in Dr. Freeman's paper. If the focal necrosis in these cases of measles was produced by the toxins, the latter must be much milder than those producing focal necrosis in diphtheria and typhoid fever.

The society then went into executive session.

Clinical Department.

FUNCTIONAL ACTIVITY OF THE MAMMARY GLANDS IN AN INFANT.

By J. B. GROVER, M.D.,
PECKVILLE, PA.

The following case is so unusual that I think it will be of interest to place on record. It is that of a female child, born January 28, 1898, having two unusually developed mammary glands (the nipples especially so), which secrete milk so abundantly that the mother is obliged to pump the milk out of both glands at least once daily. The child is fretful until this is accomplished. This secretion of milk began when the child was one week old. The mother pumped the milk out in my presence one morning, and the amount obtained was about two fluid drachms. Macroscopically it had the identical appearance of mother's milk; I did not examine it microscopically. The child is robust, and has the general appearance that healthy babies have at her age.

A CASE OF TUBAL PREGNANCY.

By E. J. WHITEHEAD, M.D.,
COLUMBIANA, OHIO.

Mrs. W—— is a healthy woman, twenty-seven years old. She has been married three years, but has never been pregnant. Menstruation, although somewhat painful at times, had always been regular, until last September. After a delay of eight days it appeared in normal amount, but continued for nearly a month, gradually decreasing, but never stopping entirely. At that time no vaginal examination was made, but she was given a mixture of ergot and hydrastis. This was continued for two or three weeks, with no benefit except a slight diminution in amount of the flow.

Examination then showed the uterus in normal position, but the cavity measured three and one-half inches. At the left side of the uterus, and so close as to seem part of it, a round, hard tumor about as large as a walnut could be felt. This had grown so rapidly in the next two weeks that a diagnosis of extra-uterine pregnancy seemed justified, although the material removal by the sharp curette did not appear to resemble the decidua sufficiently. The immediate effect of the slight curetting was to stop the hemorrhage for about a week.

There was such a noticeable increase in the size of

the tumor that it seemed unwise to delay operation any longer. An incision four inches long was made in the median line, every possible precaution to insure asepsis being used. There was no great difficulty in removing the tumor, which proved to be a tubal pregnancy. After the removal of at least a handful of small blood clots the pelvic cavity was flushed with hot sterilized decinormal salt solution. The wound was closed with ten silkworm-gut sutures. The divided ends of the tube were tied with catgut sterilized in formalin. The abdominal wound was dressed in the usual manner. No drainage tubes were used.

The next morning the usual nausea from ether, instead of ceasing, had become much more severe. There was vomiting of bile-stained mucus. Pulse, 150; temperature, 100° F.; with severe pain throughout the abdomen. At 9:30 A.M. the patient began taking calomel ($\frac{1}{10}$ gr.) every half-hour; this was continued until 6 P.M., when she took a large dose of a saturated solution of magnesium sulphate. At 8 P.M. the pulse rate was 160; temperature, 102.4° F. During the night two enemata of magnesium sulphate were administered, owing to the fact that it was impossible to give any remedies by the mouth. About once in four hours she had a hypodermic injection of strychnine, gr. $\frac{1}{30}$.

During the second night she obtained no sleep. In the morning the temperature was 100.4° F.; pulse, 150; respirations, 26. As the vomiting had ceased, she was given beef juice in small amount at frequent intervals.

In the afternoon the bowels moved. The temperature then began gradually to decline, and within twenty-four hours was less than 100° F. Thereafter convalescence was rapid and uninterrupted. The dressings were removed on the ninth day. The wound was found entirely healed, except where two of the sutures had become partly untied, possibly because of the severe strain during vomiting the day after the operation. She was out of bed two weeks after the operation.

OBSTRUCTION OF THE ŒSOPHAGUS.

By J. D. LOUIS, M.D.,
ST ANTHONY, IDAHO.

On Tuesday, August 3, 1897, I was called to see Mrs. W——, aged thirty-six, by her husband, who stated that she had been suffering since the Sunday night previous with an obstruction of the œsophagus. He gave me the following history: Mrs. W——, when a little girl, had swallowed some concentrated lye, and very narrowly escaped with her life. Since that time she had been very careful about her eating, and did not partake of the more solid foods, but limited her diet to liquids and spoon victuals. She had suffered from an obstruction on one occasion before I saw her, which had been removed with difficulty.

On arriving at the bedside, I found the patient suffering with nausea, which had been present almost continuously since the Sunday night previous to my visit. She was eight months pregnant, and greatly worried for fear she would have a miscarriage. She stated that she had been unable to get water to pass the obstruction, which she said consisted of boiled potato.

After making a thorough examination and failing to pass an instrument, I decided to try hydrogen dioxide, believing that, in connection with the saliva which was incorporated with the bolus, an effervescence would be produced, thereby dislocating the obstruction. After she had taken one teaspoonful she was able to pass water into the stomach, and after using an ounce of the hydrogen dioxide the obstruction was entirely removed. She has since had no recurrence of the trouble.

EXCISION OF THE RIGHT SHOULDER-JOINT FOR SUBCORACOID DISLOCATION OF THE RIGHT HUMERUS, COMPLICATED BY AN I-FRACTURE OF THE SURGICAL HEAD.

By CHARLES VOORHEES BUTTLER, M.D.,
VISITING SURGEON TO THE WILLIAM W. BACKUS HOSPITAL, NORWICH, CONN.

On May 28, 1897, Mrs. C——, forty-two years old, of this city, came to the outdoor department of the hospital for treatment on account of an injury to her right shoulder. About five weeks previously she had fallen from a doorstep, with her arm behind her back, striking on her right shoulder. Considering it only a bruise, the arm having been greatly discolored, she did not consult a physician, but was obliged to do so at last on account of the disability, she not being able to raise her arm farther than to an angle of 45°. She was greatly crippled in her work, being a hard-working laundress. Dr. Higgins, the house surgeon, examined her and found a subcoracoid dislocation of the right humerus. The next afternoon I made an attempt to reduce the dislocation, and, the patient being etherized, I carefully rotated the arm so as to break up any adhesions that might have formed. After rotation for a short time, crepitus was felt over the head of the bone, which was distinctly communicated to the elbow-joint. All manipulations were immediately stopped and the diagnosis was then made: Subcoracoid dislocation, complicated by a fracture of the anatomical neck. The neck of the bone had evidently been fractured at the time of the dislocation, for all manipulations were done so carefully that we could not have fractured the neck of the bone, but probably by rotation had caused the breaking up of whatever callus had formed. A consultation of the visiting-staff was called, and it was decided that an operation would be necessary to give the patient a better arm than she then had. Even if the fracture united with the head of the bone dislocated, the chances were not favorable that she would have much use of her arm. Three attempts were made by Dr. W. T. Browne, of this city, to take an *x*-ray photograph of the shoulder, but on account of the breaking of the only Crookes tubes that were in this city, we were unable to obtain the skiagraph.

On Saturday, June 5th, I operated in the presence of the staff, with the idea of replacing the head of the bone in the glenoid cavity and then attempting to get union of the fracture, wiring if necessary; if this was impossible, to exsect the head of the bone. A longitudinal incision was made, five inches in length, commencing about one-half inch external to the coracoid process of the scapula. After separating the fibres of the deltoid muscle, I found the head of the bone under the coracoid process; the capsule was intact, but so bound to the adjacent structures that it was necessary to supplement the original incision by a horizontal one, two inches in length, parallel to the clavicle. On opening the capsule, which was greatly thickened, I found the articular surface turned at nearly a right angle from its proper relation to the shaft. The fracture was I-shaped—the upper bar at the rim of the articular surface; the lower, at the junction of the tuberosities and the shaft; the upright, joining the two, between the tuberosities. The fragments were separated to the extent of admitting the tip of the index finger, and the long tendon of the biceps muscle was caught in the longitudinal fracture, and was with great difficulty separated without further injury. A moderate amount of callus was present, showing that an attempt at union had been made. The fragments were softened, showing that they were evidently undergoing necrosis. On account of the condition of the head and anatomical neck of the bone, it was decided to remove the fragments and to replace the humerus

as near to its proper position as possible. The fragments were removed, as much of the capsule and periosteum being saved as possible. The wound was cleansed, stitched up, drained through incision, and the arm bandaged against the side of the chest with an axillary pad, the forearm being flexed to a right angle.

On the third day, as the wound was not draining properly and as the patient's temperature was rising, it was evident that freer drainage should be had. The patient being etherized, a small incision was made posteriorly and a tube was passed through the joint.

Mrs. C——'s recovery was retarded by repeated attacks of rheumatism, notwithstanding which the wound healed nicely and she was discharged from the hospital on July 28th. She was readmitted to the hospital for another attack of rheumatism on September 13th, and discharged well on November 17th. On March 12, 1898, I examined her, and she is now able to use her arm to wash and iron, needing a little assistance to raise heavy articles. The arm can be passively abducted to more than a right angle, and she is entirely free from pain when the arm is moved actively or passively.

A CASE OF DELAYED CHANGE OF VOICE, DUE TO UNRECOGNIZED POWER TO USE THE ADULT VOICE.

By H. SCHOONMAKER, M.D.,
ROCHESTER, N. Y.

The history of this case is that from about two years of age the boy had an unusually high-pitched voice and was subject to hoarseness and huskiness. During childhood he had many attacks of acute and subacute coryza, with a resulting nasal obstruction sufficient to cause mouth breathing. At twelve years of age—about two years ago—signs of change of voice were noticed along with the other changes of approaching puberty. At this time he occasionally used the deep tone, but soon abandoned it altogether, developing instead a squeaky, rasping, high-pitched voice, it being at times but a hoarse whisper. The boy being naturally diffident, this condition led him to speak only when necessary. He was placed under the care of a specialist, who relieved the nasal obstruction and consequently the mouth breathing. He did not, however, benefit the voice condition.

In addition to the special treatment he had been under the observation of the family physician for a long time. Both physicians are men of undoubted ability.

He came to me about four weeks ago. The vocal cords were somewhat roughened and thickened, but, in view of the fact that the other changes of puberty had occurred, it seemed impossible to understand why he should not use the adult voice.

My plan of treatment was to spend an hour more or less with him every day in trying to teach him control over his vocal apparatus, by much the same methods that a music teacher uses in voice culture; also to use medicated vapors, respiratory gymnastics, and any other means whereby the vocal apparatus might be strengthened. I confess I had not much faith in the effort. After four days (and this is the interesting part of the case), by gaining the lad's confidence and dispelling as well as I could his diffidence, and by questioning him carefully concerning the period when his voice should have changed, I discovered that his voice had already fully changed, but that he did not know it. This discovery simplified matters decidedly. I now showed him that if he would will to use the deep voice, he could do so. This he has done, until now the act of the will has become automatic. For a few days after recognizing his power to use the "deep manly voice," if he spoke without conscious effort, he would use the old voice.

We occasionally meet a man whose voice has the same pitch as before puberty; and my experience in this case leads me to ask the question: May not this condition be due to an unrecognized and neglected power at puberty?

235 Lake Avenue.

HÆMATEMESIS AS A SEQUENCE OF CHRONIC ULCER.

By GEORGE FLANAGAN SHAW, C.M., M.D.,
ST. ANDREWS, P. Q., CANADA.

Four and one-half years ago I had under my care a girl, aged seventeen years, who suffered from an extreme degree of chlorosis, including a well-marked hæmic murmur, heard most distinctly in the left second intercostal space. She was put under careful treatment, and soon the dyspnœa, pallor, palpitation, and murmur disappeared; the menses resumed regularity and quantity, the appetite became good, and the system generally regained its normal vigor. It was then hoped (and with good reason) that a permanent change had been brought about, and that every danger had been passed. For two years, indeed, our expectations were confirmed, and no complaints were heard. During the six months following the two years referred to, I was again consulted by her for shortness of breath and loss of appetite. I again resumed treatment and in addition advised a change of scene, which latter suggestion she acted upon. Her recovery now was rather more tedious than before, yet in a reasonable time every untoward symptom passed away, and she again had nothing to complain of until her present illness, which brings forth this report. About ten days ago I was hastily summoned to her bedside, and upon arriving I was informed by the mother that my patient had just had "a great bleeding from the lungs," and that "the worst fears were now confirmed; the dreaded consumption had marked her daughter for its victim." I was then shown two large wash basins, one of which was found to contain a pint and one-half of dark, grumous, fluid blood, with scarcely any food débris; and the other three-quarters of a pint of the same discharge. The patient was very much blanched and very weak, though not suffering from any nervous shock. The pulse was soft, easily compressible, and much wanting in volume, and the breathing somewhat hurried and shallow. Later on in the day when any immediate danger seemed past, the patient informed me that she had been very well previously, taking part in various social functions, and was in the act of preparing for such an event (which involved a drive of a few miles) when an agonizing pain set in in her stomach and radiated to the lower abdominal zone. She then became dizzy, and with a feeling of faintness staggered toward her bed, at the same time calling to her mother and motioning for a basin. What followed the mother has told. "A very cataract of blood" came tumbling from her daughter's mouth, without any seeming effort, necessitating the use of two basins. Simultaneously with this, a small quantity of blood passed per anum. The following day the patient was found to be quite comfortable and cheerful, and she craved food. She informed me that her menses, which were due, had come on during the night. She also mentioned that she had eaten heartily the day before her illness, and that for a few days previously she had noticed a darkening of the stools. Upon examination, the contents of the basins were found to be bloody, and from the stomach, acid in reaction, with corpuscles much disintegrated. The urine was devoid

of any abnormality. The patient is now doing well. This, then, is a typical case of latent chronic ulcer of the stomach, with an example of one of its most dangerous sequences, and in which previous symptoms were entirely disguised during the whole course. Repeated questioning and careful examinations had been carried on from time to time, during a period of four years or more, and nothing was elicited to base a diagnosis of ulcer upon. The pathology of such cases in chlorotic girls seems to be wrapped in obscurity, and much has yet to be learned concerning the exact causes and process of initiation. The enormous quantity of blood lost to the circulation in a short time is not too often associated with recovery, especially when from a young girl under one hundred and ten pounds body weight.

Therapeutic Hints.

Bronchorrhœa.—

℞ Benzoic acid..... 0.13
Tannin..... 0.15
For one powder. Make twenty. Take four daily.

—Maragliano.

For the Shaking of Paralysis Agitans.—

℞ Strych. sulphat.,
Ac. arsenios..... āā 0.06
Ext. bellad..... 0.3
Quininæ sulph.,
Mas. pil. Blaudii..... āā 2.4
Ext. taraxaci..... q.s.
M. ft. pil. No. xc. S. Three pills daily.

—S. W. Gross.

Rheumatism.—For local application:

℞ Ac. salic. subtil. pulv..... 10
Ol. terebinth..... 10
Lanolin..... 50
M. S. Apply.

—Husson.

In Nerve Weakness and Anæmia.—As a substitute for Brown-Séquard's organic preparations:

℞ Calcii glycerophosphat..... 1
Ac. nitric..... 0.1
Sacch..... 6
Aq..... 34
Shake and boil. S. Three times a day a dessertspoonful.

Or:

℞ Calcii glycerophosphat..... 0.15–0.3
Ol. theobrom..... 0.1
For one pastille. Take four such daily.

Or:

℞ Ferri glycerophosphat..... 2
Aq. cinnamomi..... 40
Syr. aurantii..... 100
M. S. Dessertspoonful at dose.

Or:

℞ Ferri glycerophosphat..... 10
Vini Madeiræ..... 1 litre.
Macera per horas xxiv. et filtra. S. Before each meal a wineglassful.

—*Allgemeine medicinische Central-Zeitung*, No. 81, 1897.

Yellow Fever.—

℞ Sodii bicarb..... gr. cl.
Hydrarg. chlor. cor..... gr. ½
Aquæ..... ℥ xl.
M. S. Three tablespoonfuls every hour.

—Sternberg.

Blepharitis.—

℞ Hydrarg. oxid. flavi..... gr. x.
Vaselini albi..... ʒ ss.
Smear along the lid margin morning and night.

In hyperæmia of the lid border with crusting the crusts may first be rubbed off with cotton wool soaked in a little spirits and water (about one part of whiskey to three of water), and then the following ointment rubbed in:

℞ Ichthyoli..... ♏ ij.
Aquæ destillatæ..... ʒ ss.
Lanolini..... ʒ ss.

Essential Neurasthenia.—1. Douche in broken jet over the trunk, in full jet over the limbs. Ten seconds' duration. Avoid douching the head. 2. Before each meal quassia macerated in red wine. 3. Iron preparations. 4. On retiring:

℞ Potass. brom..... 50 gm.
Sodii brom.,
Ammon. brom..... āā 20 "
Aq..... 1,000 "
M. S. Two soupspoonfuls.

Or:

℞ Sulphonal..... 0.50 cgm.
In two doses with an hour's interval.

Before each meal three of the following pills may be taken:

℞ Quininæ hydrobromat..... 0.05
Ext. valerian..... q.s.
For one pill.

—Charcot.

Pneumonia.—

℞ Ammonium chloride..... gr. x.
Ammonium carbonate..... gr. v.
Ammonium salicylate..... gr. v.
Fluid extract of coca..... ʒ i.
Essence of pepsin..... ʒ i.
Syrup of tolu..... ʒ i.
Water..... ʒ i.
M. To make a tablespoonful, which is to be given with or without water every second or fourth hour.

—S. Solis Cohen, *Philadelphia Polyclinic*, January, 1898.

Acute Gingivitis.—

℞ Tinct. myrrh..... 10
Eucalyptol,
Menthol..... āā 0.25
Sodii biboratis..... 10
Aquæ destillatæ..... 200

—*Allgemeine medicinische Central-Zeitung*, March, 1898.

Pertussis.—

℞ Tinct. belladonnæ,
Tinct. aconiti..... āā 5–10 gtt.
Aquæ chloroformi saturat.,
Syrupi althææ..... āā 30
Aquæ destillatæ..... 90
S. Teaspoonful every two hours.

—Perier.

Benzoate of Sodium in the Treatment of Grippe.—It may be given in capsule or powder form, the usual dose being ten grains, three or four times a day. When muscular symptoms are pronounced, the following combination acts admirably:

℞ Sodii benzoatis..... ʒ ij.
Salol..... ʒ i.
Phenacetin..... gr. xxxvi.
M. et ft. chart. No. xii. S. One powder every four hours.

—*Gaillard's Medical Journal.*

Gonorrhœa.—When early, simple, and uncomplicated use for injection:

℞ Zinci iodidi..... gr. x.
Zinci chloridi..... gr. ij.
Aquæ..... ʒ vi.

Use a hard-rubber syringe holding at least three drachms, and having a nozzle at least one-half inch in length. Let the injected fluid go as far as it will.
—Frank Glenn, *Indiana Medical Journal*, January.

Warburg's Tincture.—We have received a request to give the formula for this remedy. Many simpler ones are in use, but the formula as originally given by Dr. Warburg himself is as follows:

℞ Socotrine aloes ..... ℥ xij.
Rhubarb,
Angelica seeds,
Confect. Damocratis ....āā ℥ i.
Elecampane,
Saffron,
Fennel,
Prepared chalk .....āā ℥ ij.
Gentian root,
Zedoary root,
Cubebs,
Myrrh,
Camphor,
Larch boletus .. ..āā ℥ i.

Digest in five hundred fluid ounces of proof spirits in a water bath for twelve hours; express, and add quinine sulphate, ℥ x.; place in a water bath until the quinine is dissolved; cool and filter.

Diabetes.—Uranii nitratis, gr. i.–ii. Give three times a day in plenty of water, and increase gradually to a maximum daily dose of from ten to twenty grains.

Coryza.—

℞ Uranii acetatis ..... 1–2 parts.
Aquæ destillatæ..... ... . 20 "
M. S. Snuff up two or three drops daily.

—*Revue Médicale*, January 21st.

Enteroclysis in the newborn, when stools are very fetid:

℞ Naphthol..... 1
Borax..... 10
Water..... 1,000

—Bonnaire, *Gazette Médicale de Liége*, October, 1897.

Modified Milk—A home modification of simple form is the following:

℞ Cream (12 per cent.)..... ..... 7¼ oz.
Whole milk ..... 5⅛ "
Lime water .... 2 "
Sugar of milk (dry) .... 1¼ "
Water ..... 22⅜ "

—Westcott, *Archives of Pediatrics*, January.

Tuberculosis.—Ichthyol acts more energetically than creosote. Begin with two grams daily and increase to four at the end of a week.—Fraenkel, *Therapeutische Wochenschrift.*

Within two years thirty absolute and unequivocal recoveries have been recorded under the use of antiphthisin (Klebs).—J. H. Williams.

Chronic Rheumatism.—

℞ Acidi salicylici..... gr. v.
Cimicifugæ ..... gr. ij.
Potassii iodidi..... ..... gr. iss.
Tinct. gelsemii..... gtt. i.
Elix. simplicis..... ℥ i.
M. S. One dose.

Coryza.—

℞ Cocainæ hydrochloratis..... gr. iiss.
Mentholis ..... gr. iv.
Acidi borici..... ℥ ss.
Pulv. caffeæ ..... gr. viij.
M. S. Snuff up a pinch three or four times a day.

—H. B. Whitney.

Or, to prevent and ward off tracheitis, use hot boric-acid solution by means of a nasal douche at the onset of symptoms.—Courtade.

Uræmic Dyspnœa.—When severe, inject every hour, day and night, two cubic centimetres of ether. Or give by the mouth in sweetened water.—Lemoine, *La Presse Médicale*, No. 84, 1897.

Angina Pectoris.—The iodides check and modify the progress of arterio-sclerosis and lower blood pressure.

℞ Potassii seu sodii iodidi..... gr. x.–xv.
T.i.d. for a long time.

—Osler.

Formula for Pastilles.—Dr. A. F. R. Nalk (*Ugeskrift for Läger*, No. 28, 1897) gives the following formula for a chewing-pastille, to be used in pyrosis, heartburn, or for other purposes by modifying the ingredients:

℞ Massæ gummi ad manductionem..... 100
Oxidi magnesii lev.,
Phosphat. magnes. ammon..... .āā 1
Rhiz. zingiberis pulv 0.15
Cort. cinnamomæ pulv..... 0.3
Sacch. alb. 0.07
Ft. pastillas No. 200.

For those who have bad teeth or cannot chew, he uses "trochisci alcalici," made as follows:

℞ Phosphat. magnes. ammon..... 7
Magnesii oxidi,
Sodii bicarb.....āā 4
Sacch. lactis..... 30
Sacch. albi 140
Tragacanth 1
Æther..... gtt. ij.
Tinct. zingiberis..... gtt. xij.
Mucil. gummi arab.,
Aquæ destil ....āā p.æ.
M. ft. s. art. trochisci No. 100.

Perniones.—

℞ Ichthyol..... 1–5
Resorcin..... 1–3
Adipis lanæ..... 25
Ol. olivæ..... 10
Aquæ destill.....ad 50
S. Apply at night.

—Jadassohn, *Allgemeine medizinische Zeitung.*

Acute Gastro-Enteritis of Children.—

℞ Rad. calumbæ..... 1
Aquæ..... 75
Ft. infus.; adde:
Bism. subnitr..... 3
Syrup. flor. aurant..... 15
S. Teaspoonful every two hours.

—Trabaudt, *Correspondenzblatt für Schweizer Aerzte.*

Medicines which are Forbidden during the Period of Lactation.—Dr. Boissard (*Journal de Médecine de Paris*, ix., April 6, 1897) sums up the above subject as follows: "The medicines which are not to be given internally include those which influence unfavorably the quantity and quality of the milk, and further those which permit the return of the menses. For that reason all drastics which give rise to a congestion of the genital apparatus are to be forbidden. In persons who have their courses again and who suffer from profuse bleeding, rest in bed and hydrastis are to be used, and not ergotin, ergot, or digitalis. Avoid diuretics and diaphoretics; thus forbid digitalis, pilocarpine, and asparagus. In cases of constipation use regulated diet, castor oil, or cascara; exclude salines, podophyllin, rhubarb. The use of alcoholic drinks is absolutely to be forbidden. Sulphate of quinine enters the milk in such a small amount that it may be ordered if necessary. Preparations of opium and arsenic are to be avoided, however; camphor and antipyrin appear to influence the secretion of milk unfavorably, and therefore are not to be used."

Pityriasis Versicolor.—

℞ Spir. lavandulæ..... 120
Hydrargyri chlor. corrosiv..... 1
Ol. lavand..... 4
Sapon. virid..... 50

—*Allgemeine medicinische Central-Zeitung*, No. 15, 1898.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE GREAT BAZAAR FOR THE LONDON HOSPITAL—THE PRESS AND ITS LITTLE PAPER—THE MEDICAL COUNCIL'S PROSECUTIONS—DOCKRELL VS. DOUGALL—A SOCIETY TO PROMOTE THE KNOWLEDGE OF TUBERCULOSIS.

LONDON, July 1, 1898.

THE one absorbing topic of the week in professional circles, as well as in the most aristocratic society, has been the great press bazaar held in the Hotel Cecil on behalf of the London Hospital. This is, as you probably know, our largest hospital, and contains about eight hundred beds. It is located at the East End, amid a poor and crowded population and near the docks. There is always a great demand on its accommodation, and as it is not endowed there is a chronic difficulty in its financial resources. This year it was proposed to organize a great bazaar on the part of the press in support of the funds, and a wonderful success it has been. All the leading papers have taken part in the work. High Tory, moderate Conservative, Unionist, Liberal, Radical—all shades of political opinion have united for once to boom the East End charity, and the representative organs of these opposing views have urged its claims on their readers. The preparations have been going on for many weeks, and at last the idea has been realized.

The bazaar was opened on Tuesday afternoon by the Princess of Wales, accompanied by the Duchess of York, and continued on Wednesday. There was a very fine programme of dramatic and musical performances, commencing with recitations by Sir Henry Irving and Miss Ellen Terry. At each stall duchesses and other ladies were disposing of the articles they had accumulated in the usual manner of bazaars, at prices in excess of those anticipated at such assemblies. At one stall you could buy tea cloths, each bearing the signature of some royal or distinguished personage. One was signed by the Princess of Wales, another by Mrs. Gladstone. Books were on sale at another stall, many beautifully bound, each copy being signed by the author. Signatures were, in fact, at a great premium, and it was reported that an ordinary luggage label signed by a popular actor was sold for half a guinea! The new craze for old dramatic posters was also in evidence. A first edition of "Paradise Lost" was an attraction at one stall.

The bazaar was in communication with all the theatres and music halls by the electrophone, and the throngs of visitors were able to listen to the voices of Mr. Gladstone and other celebrities through the phonograph.

A striking feature was the palmarium, where visitors could take ices, strawberries and cream, and so on, beneath gigantic palms interspersed with electric lights, while they listened to a stringed band and the plash of water in the fountain or gazed curiously on the throng of celebrities.

That curious survival of superstitious absurdity, called "palmistry," was in full force, and credulous ladies were able to show their delicate hands and hear the "palmist" tell their fortunes on terms which would make the poor gypsy's mouth water. But we fine the gypsy who persuades an ignorant girl to cross her hand with silver, while her richer sisters can carry on their deceit under the ægis of the press. "All for the charity, and of course it is only nonsense," said one; but I know educated ladies who are influenced by this folly. The gambling spirit of the age found vent in the usual devices employed on these occasions, and visitors enjoyed the mild stimulus of losing their money for the benefit of the sick poor.

The success of the bazaar has equalled the expectations of its promoters, and will give about £10,000 to the London Hospital.

A unique feature of this remarkable entertainment, and one which will interest you as an editor, was the establishment of a daily newspaper on a scale never before, I believe, attempted, and to last only for two days. This was called the *Press Bazaar News*, and the two copies lie before me. It was produced in a room which would not accommodate a third of its staff; for although one compositor sufficed to set up the little four-page sheet, it boasted of engaging the thoughts and care of nearly two hundred editors and contributors! A linotype machine was set up for the work, and here a curious difficulty arose. The furnace to melt the metal for this might be a source of danger, and the catastrophe of the Paris Charity Bazaar be repeated. Accordingly electricians were appealed to, and contrived a furnace for the occasion which completely solved the problem of melting the metal without an open fire. With the enterprise thus displayed, you may imagine that other mechanical difficulties were fully met.

Among the editorial arrangements, science was committed to the care of Dr. Hopkinson and Mr. T. A. Edison, while Mr. Herman E. Dick undertook to advise them of the developments that occurred on your side of the water. Col. John Hay, the United States ambassador on this side, accepted the post of American correspondent, and his daughter contributed a poem to the paper. Art criticism was intrusted to Lord Ronald Sutherland Gower, the sculptor of the Shakespeare memorial at Stratford-on-Avon; music to Sir A. Sullivan, and the Wagnerian department to Lady Charles Beresford; the drama to Sir H. Irving (who contributed a criticism on one of his own performances) and Miss Ellen Terry. These are samples of the literary staff. In politics Lord Dufferin was foreign editor, and Lord Charles Beresford undertook naval affairs.

The price of the *News* was one shilling each copy—and it boasts of being the dearest and tiniest paper ever produced.

The Medical Council has been defeated in another prosecution. "John Hamilton, M.D., New York," was charged with falsely pretending to and using the title of doctor of medicine, he being unregistered under the medical acts. Mr. Muir Mackenzie prosecuted. The defence was that defendant had never described himself as other than he was, and two previous prosecutions against him had failed. The magistrate said there was no evidence that he had used the title with intent to deceive, and dismissed the summons. The law advisers of the council have not much to boast of, though no doubt they do their best. Still their best does not seem so successful as the methods of the Defence Union. What seems to be wanted is some further legislation to make it clear that an unregistered person is liable to the penalties for engaging in practice. A foreign gentleman with a genuine Vienna degree was lately convicted, and this man escapes. The "glorious uncertainty of the law" may well be a proverb.

Another legal case is of interest to the profession. Dr. M. Dockrell sued one Dougall for libel, in that the latter had circulated statements to the effect that the doctor prescribed "Salyco water" for habitual use, and had said, "Nothing has done my gout so much good." This last assertion seems to have been made in conversation with Dougall, the proprietor of the water—and shows how dangerous it is to hold any communication with the venders of any nostrum. Promises to withdraw the circulars were made, but not

carried out, and Dr. Dockrell was obliged to appeal to the law. The water contains colchicine, and the danger of recommending it for habitual use was urged, as well as the injury to any doctor of using his name without authority. The judge said that to order it twice daily for a fortnight, as had been admitted, was equivalent to habitual use! The jury found on this that there was no libel. An injunction to restrain Dougall from using the doctor's name was refused, but there will probably be an appeal, when it is to be hoped that the army of quack-medicine venders will not be authorized to advertise the names of regular practitioners against their consent.

A sort of drawing-room meeting was held last week at the house of Sir W. Broadbent, with a view of eliciting opinions as to whether the time had come for forming a society to disseminate knowledge as to the propagation of tuberculosis. The promotion of sanatoria was also suggested as a possible outcome. The question whether the society in contemplation should be a purely medical one or whether it should embrace others who were interested in the subject was also put before the meeting. As to this, it was urged that the society would strengthen the hands of medical officers of health and that it might be well to enlist the sympathy and co-operation of the chairmen of boards of guardians. It was resolved to form the society, and a provisional committee was appointed to arrange for holding a public meeting.

OUR PARIS LETTER.

(From our Special Correspondent.)

THE NEW INSTITUT PASTEUR — DISPOSAL OF THE BARONESS HIRSCH'S GIFT—BUILDING BEGINS—PROFESSIONAL PARIS BEGINS TO SHOW SIGNS OF THE APPROACHING SUMMER VACATION—AN ADDITIONAL EXAMINATION IN OBSTETRICS REQUIRED TO OBTAIN THE FRENCH M.D. DEGREE—INTERESTING MEETING OF THE MEDICAL SOCIETY OF THE HOSPITALS—MIXTURE FOR GASTRO-ENTERITIS IN CHILDREN.

PARIS, July 2, 1898.

THE lengthy discussion with reference to the disposal of the gift of the Baroness Hirsch has been closed by a decision of the council of administration of the Institut Pasteur. The amount of the gift was two millions, full liberty being left the administration to employ it as they should judge best. Construction of a new biological institute has been after mature deliberation agreed upon as the most wise and useful means of employing the money, and a visit to the institute grounds will now discover the building actually going on in the Rue Dutot. The foundations are laid and the work in general is being actively pushed forward. It will take, nevertheless, two years to finish the new institute; that is, to have it ready for occupancy: and it is hoped to time the inauguration with that of the universal exposition of 1900. The new institute will comprise lecture rooms, amphitheatres, and a hospital, in which cases will be cared for, observed, and studied that it is not desirable to keep in the Institut Pasteur proper.

The new institute will be of immense value to the science and practice of medicine, and will permit us to subtract from psychology and restore to biology the study of certain intellectual and moral functions. These really do not belong to biology directly, but bear the same relation to it that physiological functions do, of which they are the outcome: and the development of this branch of science will have a direct practical application in elucidating the diagnosis and treatment of obscure mental disease. It will be seen that the annex of the Institut Pasteur will be devoted to a higher and greater field of study, embracing more especially the fundamental biological doctrines, with natural philosophy and the real history of the animals as well as man and humanity.

Paris begins to show signs of the approaching end of the academic year, and by the time these lines are read in the MEDICAL RECORD the exodus which is beginning will be in full swing. Professors at the École de Médecine are already admonishing their classes of the close of their courses, and practitioners in the city are informing their patients that the summer vacation is at hand, and that after such or such a day Dr. "So-and-So" will call to see them—when the professor or practitioner will quietly slip off to America or Switzerland to enjoy a well-earned rest from the cares and exigencies of a medical practice.

The new plan of dividing the fifth examination for the doctorate into three parts seems to work very well indeed. It will be remembered that formerly there were only two parts to the fifth, both bedside examinations, followed by questions in another room as regards diagnosis, prognosis, and treatment—the one in medicine, the other in surgery. Now there are three separate examinations, usually a few weeks apart—obstetrical, medical, and surgical—but forming one, the fifth, which is always held at one of the larger hospitals, such as the Hôtel Dieu or the Charité. There was considerable grumbling on the part of candidates when the new law was promulgated, but now it is accepted as a matter of course and cheerfully acquiesced in. It must be admitted that graduates were heretofore sent out without sufficient practical obstetrical examination, the only examination of the kind being the oral one at the third, which was held at the School of Medicine; whereas the obstetrical part of the fifth is held at the bedside, either at the clinique Baudelocque or at the clinique d'accouchements.

The last meeting of the Medical Society of the Hospitals was particularly interesting. Dr. Jacquet presented a syphilitic patient having a gummatous osteitis of the tibia, refractory to very active treatment with mercurial frictions and iodide of potassium, who was cured in several days by an injection of calomel. The nocturnal pains disappeared from the next day, and at the end of eight days the nodosities of the tibia had been resorbed.

In a case of pulmonary gangrene, sufficiently specified by the odor of the breath and by the aspect of the sputa, Dr. Gaillard and Professor Blum performed pneumotomy. The nidus, situated at the right base, was opened by a large incision. It was then established that its volume was that of a fist. The following days the wound suppurated abundantly and its borders reddened. Nine days later the patient died, and at the autopsy they found a pleural suppurative collection, encysted in the anterior portion of the lung, that had escaped operation. Moreover, there was pericarditis. It is lawful to suppose that this patient succumbed to a secondary septicæmia.

Dr. Florand publishes a fresh case of cerebro-spinal meningitis to be added to those that have been previously reported to the Medical Society of the Hospitals by Professor Netter. The latter can affirm in this respect that he to-day possesses thirty-two observations of this kind, collected since his attention was called to the subject.

Dr. Dalché, returning to the communication of Dr. Sevestre at the last meeting, with reference to the cure of meningitis, noted a case observed by himself in an adult, who, during eight days after a pneumonia, had attacks of Jacksonian epilepsy: in this case the hypothesis of a meningeal "plaque" is at least probable. And there is no doubt about the cure, because since that time—and it is now ten years—the subject in question has been entirely free from cerebral accident of any kind.

A good mixture in the acute gastro-enteritis of children is the following, proposed by Dr. Dutt:

℞ Subnitrate of bismuth ..... 2 gm.
Elixir paregoric,
Tincture chamomile.....āā gtt. xl.
Glycerin..... 8 gm.
Distilled cinnamon water..... 50 gm.
M. f. s. a. To be taken by small teaspoonfuls every three hours.

CARBOLIC-ACID INJECTIONS IN CARBUNCLES.

To the Editor of the Medical Record.

Sir: In my late brief contribution to the Medical Record on the above topic, an omission was made which I now hasten to correct. It is this. In my search through the literature on carbuncles, I was unable in any journals, American or foreign, to discover who first employed or recommended the hypodermic injection of pure carbolic acid for this lesion. I am now in receipt of a personal communication from the medical director of the navy, Dr. C. J. Cleborne, United States Naval Hospital, Norfolk, Va., in which he states that he has so employed carbolic acid for more than twenty-five years, and that he was "the first to introduce it to the profession" for treatment of carbuncle.

I notice, however, that he recommends it "in the treatment of buboes, abscesses—in fact, in all collections of pus." My own claim for it was in "carbuncles," in the treatment of which its powers are magical, safe, secure, and permanent in results. The doctor attaches great importance to the necessity of always employing "the pure concentrated carbolic acid," in which I entirely agree, though in my own hands a ninety-five-per-cent. solution has answered equally well. It is scarcely possible that Dr. Cleborne would recommend this potent remedy "in all pus collections." My own impression is that, exclusive of the specific inflammation of anthrax or carbuncle, its employment is of doubtful propriety. For this alone I have ventured hypodermically to employ pure carbolic to the exclusion of all other remedial agents of every description, and hence, until there is proof that there are others in the field who have anticipated on these lines, I must defend my claim of being the first to record the results of carbolic acid in carbuncle.

Thomas H. Manley, M.D.

115 West Forty-Ninth Street, New York.

APOMORPHINE.

To the Editor of the Medical Record.

Sir: Permit me through your columns to indorse the suggestions made by Dr. S. A. Visanska in the Medical Record of July 2d, on the subject of "Apomorphine and its Uses." As regards its use in general practice I have had but little experience, though the physiological action of the drug, as I have often observed it, is undoubtedly such as to warrant its much wider recognition and application by the profession at large. But I wish to emphasize its undoubted value in throat practice. In catarrhal laryngitis, as pointed out by Dr. Visanska, the hydrochlorate of apomorphine is a most valuable preparation. This is especially true in those cases in which the spasmodic attack has been brought on by gastric disturbances.

Another important indication, and one apparently overlooked by the author of the paper, is the presence of a foreign body in the œsophagus. In such a case a hypodermic injection of one-tenth of a grain of the hydrochlorate produces prompt emesis (usually within five minutes). An additional advantage of the emetic is that it does not pass down the œsophagus, sweeping the foreign body farther down, and also that it is non-irritating to the gastric mucous membrane.

I disagree with Dr. Visanska when he says the drug is not well known. Its existence is widely known, and it is treated of in every modern text-book, but for some undiscernible reason its advantages have never been widely recognized; consequently it does not hold the prominent position in practical therapeutics to which its properties clearly entitle it.

J. Wilkinson Jervey, M.D.

Charleston, S. C.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending July 16, 1898:

	Cases.	Deaths.
Tuberculosis	153	134
Typhoid fever	15	4
Scarlet fever	125	11
Measles	154	10
Diphtheria	172	23
Laryngeal diphtheria (croup)	8	3
Cerebro-spinal meningitis	0	12
Small-pox	1	0
Chicken-pox	4	0

Stuttering.—According to Dr. Gutzmann, whose report has been adopted and published by the German government, involuntary mimicry plays a great part in stuttering. Like yawning it is catching. The quicker a child is and the more imitative, the more apt it is to imbibe any defects of speech on the part of those by whom it is surrounded. Conclusive evidence of the contagious nature of stuttering is to be found in the fact that the number of stutterers in a school increases steadily as the children pass upward from class to class. In the public schools of Berlin, for instance, the number of stutterers among the children in the lower class was 0.52 per cent. of the total force of the class. This proportion rose from year to year, as the children passed upward in the educational scale, until in the highest class the percentage was discovered to be 1.61, or more than three times the number found when the same children were in the lowest class.

New Elements in the Air.—The atmosphere has been made the subject of special study by chemists during recent years. The liquefaction of oxygen, nitrogen, air, and lastly of hydrogen followed closely one upon another, and at the same time made possible the production of an intensity of cold, by means of which many mysteries have been already laid bare and which have also rendered possible the discovery of many other important secrets of immense practical value. Professor Ramsay has now discovered that the atmosphere contains at least two more elements than had been known or suspected. Until quite recent years science stated that air was a mixture of oxygen and nitrogen, together with a small quantity of carbonic-acid gas. To these Professor Ramsay and Lord Rayleigh added argon, which they detected some three years ago, and now within the preceding two months krypton, neon, and metargon have been revealed, the last two discoveries having been made public within the past few days. According to *The Sun*, "all the new gases, krypton, neon, and metargon, possess the peculiar characteristics of argon inertness. Physical combinations of them, *i.e.*, mixtures, easily exist, but chemical action is entirely lacking as far as is known. It is not too much to say, how-

ever, that a new department of chemistry has just been opened. Its possibilities of knowledge are as yet only vaguely indicated, but already they are of vast scientific importance, and a series of fascinating revelations will soon be forthcoming."

The Laughing-Plant.—In the *Montreal Pharmaceutical Journal* for May is a description of the laughing-plant and its effects upon man. It grows in Arabia and derives its name from the effects produced by eating its seeds. The plant is of moderate size, with bright yellow flowers and soft velvety seed pods, each of which contains two or three seeds resembling small black beans. The natives of the district where the plant grows dry these seeds and reduce them to powder. A small dose of this powder has effects similar to those arising from the inhalation of laughing-gas. It causes the soberest person to dance, shout, and laugh with the boisterous excitement of a madman, and to rush about, cutting the most ridiculous capers for nearly an hour. At the expiration of this time exhaustion sets in, and the excited person falls asleep, to wake after several hours with no recollection of his antics.

Entente Cordiale.—The friendliness of the rivalry between the faculty of the old University Medical School and that of Bellevue Hospital Medical School has long been recognized. Still there are degrees of intimacy that pass the point of endurance, and when the members of these two rival faculties found themselves one year ago sitting in each other's laps in the professorial chairs of the combined institution, the limit seemed to have been reached and they flew from each other's presence like pith balls charged with opposite electricity. Now that their distinct paths have been marked out and lie in parallel lines at a sufficiently safe distance, we find them again falling on each other's necks, after the manner of imperial personages. When the Czar of all the Russias and the Emperor of Germany meet they signalize their friendship by appearing in each other's clothes. Behold! our medical friends adopting the same custom and presenting themselves in each other's domicile. Upon the opening of the fall session of the medical schools, Bellevue will be domiciled in the old buildings of the University faculty and the University faculty, under the designation of the Medical College of Cornell University, will have its temporary home in the old Bellevue buildings on the grounds of the hospital.—*Medical News.*

Cairo as a Resort.—The last winter season at Cairo was crowded enough to satisfy all the hotel keepers. About seventy-five hundred tourists, mostly English, Americans, and Germans, landed in Egypt between November and April. This number almost reaches that of the maximum year. Medically speaking, the season was a very healthy one, slightly marred by dengue in the autumn, while in the spring, as in many past years, influenza was imported by patients from Europe. The weather was decidedly cold throughout, being the exact reverse of the winter of 1896–97.—*The Lancet.*

An Influenza Baby.—While the influenza was at its height in New York some time ago, in a family where all were suffering with the disease a boy baby was born, and by unanimous consent was named Agrippa.—*American Hebrew.*

The Spanish Red Cross in Cuba.—*The Lancet* says that in the course of the first two years of the Cuban insurrection, members of the Spanish Red Cross Society nursed about fifteen thousand soldiers in the hospitals and some twenty-five thousand on the battlefield and in temporary shelters or ambulances. The question may be asked, how many Cubans this society has aided.

Bacteriology and its Triumphs.—In the theatre of the Royal Institution Dr. G. F. Klein, lecturer on physiology at St. Bartholomew's Hospital, recently gave the first of two lectures on achievements in bacteriology. In the course of his remarks the speaker quoted some remarkable statistics concerning the microbe and its manners. Its dimensions were so insignificant, he said, that a postage stamp would accommodate 500,000,000 of the typhoid species. Its fecundity was prodigious, so much so that if fifteen drops of water polluted with bacteria were allowed to fall into a cup of broth, the germ population would have increased in twenty-four hours to 80,000,000. So profound had been the researches of the scientists who made the matter a special study, that not only had the bacteria associated with various diseases been discovered, but their weight had been estimated. As an instance of this fact Dr. Klein said that it would take 122,000,000 specimens of bacillus typhi abdominalis to weigh one gram. So penetrating had been the studies of the bacteriologist that he could now detect one part of sewage, even if it were contained in as many as 500,000 parts of water.—*Sanitary Record.*

The Prejudice against the Tomato.—The tomato alarmists are at their old tricks again. Dr. Andrew Wilson, of London, says: "I have received several letters of late, reiterating a question I might well be tired of answering, 'Do tomatoes cause cancer?' But for the fact that one takes a pleasure in stamping one's foot on a misleading statement calculated to prejudice people against a vegetable food which is entirely healthful and safe, I should grow weary of asserting that not a jot or tittle of proof has ever been offered in support of the outrageous statement noted above. One might as well allege that cabbage causes cancer, for there would be no more proof of that assertion than there is proof to be had concerning the tomato myth. I can only repeat that the tomato is an excellent vegetable enough, and may be partaken of by those with whom it agrees, without any fear of its initiating any disease whatever."

Health Reports.—The following statistics concerning small-pox, yellow fever, and plague have been received in the office of the supervising surgeon-general of the Marine Hospital service during the week ending July 16, 1898:

		Cases.	Deaths
Small-Pox—United States.			
New York, Dansville	May 2d to July 7th	3	
Geneva	May 21st to July 7th	6	
Ithaca	May 19th to July 7th	1	
Moravia	May 17th to July 7th	3	
Locke	July 7th	1	
Union Springs	May 18th to July 7th	2	
Westfield	April 28th to July 7th	3	
West Sparta	July 7th	2	
North Carolina, Reidsville	June 30th	1	
Ohio, Van Wert	July 8th	10	
Tennessee, Hamilton	May 1st to 31st	1	
Knox County	May 1st to 31st	21	
Norton	May 1st to 31st	9	
Small-Pox—Foreign.			
Belgium, Antwerp	June 4th to 11th	3	
England, London	June 11th to 18th	1	
London	June 18th to 25th	..	
Sunderland	June 11th to 18th	1	
India, Calcutta	May 21st	..	
Russia, Moscow	June 11th to 18th	6	
St. Petersburg	June 11th to 18th	4	
Warsaw	June 11th to 18th	..	
Yellow Fever.			
Brazil, Bahia	May 2d to June 7th	6	
Para	February 28th to June 15th	..	
Rio de Janeiro	June 4th	33	
Colombia, Colon	June 6th	Sporadic cases.	
Cuba, Siboney	July 11th (9 United States soldiers and 5 citizens)	14	
San Salvador	June 4th to 11th	12	2
	June 11th to 18th	15	3
Plague.			
India, Bombay	June 1st to 7th	..	44
Japan, Osaka and Hiogo	May 21st to 28th	1	1

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Original Articles.

RECENT EXPERIENCES IN MILITARY SURGERY AFTER THE BATTLE OF SANTIAGO.

BY LIEUT.-COL. N. SENN, M.D., U.S.V.,

CHIEF OF OPERATING STAFF WITH THE ARMY IN THE FIELD.

Wound Infection.—Military surgery differs in no essential respect from emergency surgery in civil practice. The surgeon in daily practice has learned long ago that every accidental wound must practically be regarded and treated as an infected wound. In this respect the military surgeon of to-day has the advantage over his colleague in civil practice in knowing that the small-calibre bullet inflicts wounds which *per se* are more often aseptic than septic. Our recent experience in Cuba has shown that the small jacketed bullet seldom carries with it into the tissues clothing or other infected substances. Most of the wounds of the soft tissues uncomplicated by visceral lesions, which in themselves would become a source of infection, healed by primary intention in a remarkably short time. If infection followed, it usually did so in the superficial portion of the wound in connection with the skin, and, what is more than suggestive, the wound of exit was more frequently affected than the wound of entrance. This can be readily explained from the larger size of the wound and more extensive laceration and tearing of the tissues. In many of the cases ideal healing of the wound did not occur, owing to a subsequent superficial suppuration of the wound. The deep tissues were seldom implicated in such cases. I have reason to believe that some of the compound fractures which are now suppurating had such a source of infection; that is, the extension of a superficial infection to the seat of fracture.

Two weeks have elapsed since the battle of Santiago was fought and we are now in a position to inquire more critically into the manner in which the wounds became infected. The many failures in protecting the more serious wounds against infection are attributable to three principal causes: 1. Inadequate supply of first dressings. 2. Faulty application of first dressing. 3. Unnecessary change of dressing. The medical officers with the regiments and in the field hospitals were hampered in their work by an insufficiency of proper dressing-material. The rapidity with which the invasion was planned and executed, the difficulties encountered in transporting the hospital supplies to the front, and the unexpected large number of wounded readily explain the lack of dressing-material where it was most needed. Most of the dressings were too small and not sufficiently secured to keep them in place during the transportation of the wounded from the front to the field hospitals. As a rule, not enough attention was paid to the immobilization of the injured part, an important element in securing rest for the wound and in guarding against displacement of the dressings. It is a source of regret that plaster-of-Paris dressings were not more frequently employed in the treatment of gunshot fractures of the extremities.

Another palpable evil in causing infection was the too common practice of unnecessary change of dressing. The transfer of patients from one surgeon to another could not be avoided. Patients brought from the first dressing-station to the field hospital usually were subjected to a change of dressing, and, when a few days later they reached the general hospital at Siboney, they had to undergo the same ordeal, and often not only once, but whenever they came into the hands of another surgeon. Patients not thus treated were dissatisfied, as the laymen are still laboring under the erroneous impression that the oftener a wound is dressed the quicker it will heal.

It is difficult to eradicate such a deep-rooted and time-honored belief and patients will continue to clamor for a change of dressing, and the good-natured and hard-working surgeons only too often yield to the unreasonable requests. The evil of meddlesome surgery has become very apparent during our brief Cuban campaign and has taught us an important lesson that must be heeded in the future. Our military surgeons must learn to realize the value and importance of the first-aid dressing. In all cases in which the first examination does not reveal the existence of complications which require subsequent operative treatment, the diagnosis tag should convey this important instruction: "Dressing not to be touched unless symptoms demand it." Such instruction is significant and must be followed to the letter by all surgeons in subsequent charge of the patient. I am satisfied more than ever of the necessity of including in the first-aid dressing-package an antiseptic powder. For years I have used for this purpose a combination of boric acid and salicylic acid, 4 to 1, with the most satisfactory results. I am also partial to sterile absorbent cotton in place of gauze for this particular purpose, as it constitutes a more perfect filter than the loose gauze. A teaspoonful of the powder mentioned dusted on the wound forms with the blood that escapes and the overlying cotton a firm crust which seals the wound hermetically. Should the primary dressing become saturated with blood, the same powder should be dusted over the wet dressing and an additional compress of cotton be added to the dressing. After the first dressing has been applied it should not be removed, except for good and substantial reasons. Much can be done in the after-treatment in the way of readjusting the bandage and in immobilizing the injured part, but the first dressing must remain unless local or general symptoms set in which would warrant its removal. Malaria and yellow fever, that crept in upon us so insidiously, are responsible for many unnecessary changes of dressing. The appearance of fever in a wounded man naturally leads to the suspicion that there is something wrong in the wound. Many dressings were changed on this ground; nothing abnormal was found in the wounds, and a day or two later the nature of the fever was recognized and the patients were either given quinine or were sent to the yellow-fever hospital, in accordance with the final diagnosis made. Every change of dressing, more especially in military practice, is attended by risk of infection, and must be scrupulously avoided unless local or general symptoms indicate the existence of complications

which demand surgical intervention. In writing the above it is not my intention to cast any reflection on the work of our surgeons; on the contrary, I willingly bear witness to the ability, faithfulness, and unselfishness with which they have done their duty. A better and more conscientious group of medical officers it would be difficult to select anywhere. The results on the whole are excellent, but I am hopeful that they can be improved in the future by placing more stress upon the value and importance of the first dressing, and I wish to repeat again and in the most forcible way the language of the late Professor von Nussbaum: "The fate of the wounded rests in the hands of the one who applies the first dressing." If this be true in civil practice, its meaning cannot be misinterpreted in military surgery.

Effects of Bullets on the Soft Tissues.—In recent cases the small tubular wound made by the Mauser bullet was surrounded by a narrow zone of contused tissue and the wound space itself filled either with liquid or with coagulated blood. A few days later the wound itself was found surrounded by an area of suggillation which varied in extent according to the nature of the injured tissues and the amount of extravasation. In cases in which the bullet passed through the tissues some distance and not far from the surface of the skin, the location and direction of the wound canal were indicated by a discoloration of the skin a few days after the injury occurred. In a number of cases of aseptic wounds, in which the bullet had lodged in the tissues and was removed a week or ten days later, I had an opportunity to study the remote effect of the injury on the tissues. In all cases the swelling of the tissues at this time had nearly or entirely obliterated the tubular wound, the location of which was indicated by a dark discoloration, parenchymatous extravasation, remains of fluid or coagulated blood, and a limited area of œdema and infiltration. These conditions served as a useful guide in following the course of the bullet. The bullet itself was usually found loose in a small cavity filled with liquid blood or bloody serum, while a more extensive zone of infiltration indicated the early stage of encapsulation. I have no further doubt that the new bullet will become encapsulated and remain harmless in the tissues as readily or more so than the old-fashioned leaden bullet. In isolated cases late suppuration at the seat of the bullet resulted in the formation of a circumscribed abscess, a complication which aided the surgeon in locating, finding, and removing the missile. It was a surprise to us all to find that in more than ten per cent. of all the wounded the bullet was lodged in the tissues, a vastly greater number than we had any reason to expect. The cause for this became apparent when we began to study the condition of the bullets recovered. A large proportion of the bullets recovered were found deformed, showing that they were deflected bullets which had struck a hard object, or had passed through a resisting medium before they reached the object for which they were intended. The ground upon which the battle was fought is stony and covered with trees and thick underbrush, furnishing the most favorable conditions for deflection of the missiles. Some of the firing was done at a great distance, so that occasionally a spent ball was found in the soft tissues without injury of the bone. One of these bullets was a nickel-encased Mauser projectile, natural size, the jacket perfect, that was removed from the leg about four inches above the ankle-joint. It had entered the calf of the leg below the popliteal space and never touched the bone. I have another bullet of the same kind, the point of which is flattened and much rounded, which was removed from the head of the tibia. This bullet was probably fired from a great distance, and the deformity was produced by the bone. Another was a nickel-clad bullet very much deformed. It was found lodged in the deep tissues of the thigh, about two inches from the wound of entrance, slightly overlapping the femur near the middle of the shaft. The bullet evidently struck a stone behind its point and was deflected before it entered the tissues. It was much flattened and curved. The convex side and point of the bullet and jacket were perfect, the lead being exposed between the edges of the case.

The Value of the X-Ray in Military Practice.—The value of the probe as a diagnostic instrument in locating bullets has in modern military service been almost entirely superseded by dissection and the employment of the *x*-ray. If from the nature of the injury and the symptoms presented the bullet is located in a part of the body readily and safely accessible to the knife, and it is deemed advisable and expedient to remove it, this can often be done more expeditiously and with a greater degree of certainty by enlarging the track made by the bullet than by relying on the probe in finding and on the forceps in extracting the bullet. If, as is often the case, the whereabouts of the bullet is not known, its presence and exact location can by the use of the *x*-ray be determined without any pain or any additional risks to the patient. All of the bullets removed on board the hospital ship *Relief* were located in this manner. Dr. Gray, an expert in skiagraphy, who has charge of the scientific work of the floating hospital, has been of the greatest service to the surgeons in enabling them to locate bullets and in guiding them as to the advisability of undertaking an operation for their removal. His large collection of skiagraph pictures will also furnish a flood of new light on the effect of the small-calibre bullet on the different bones of the body. Dr. Gray's work will constitute an essential and enduring cornerstone of a much-needed modern work on military surgery. The skiagraph has enabled us to diagnosticate the existence or absence of fractures in a number of doubtful cases in which we had to depend exclusively on this resource. In fractures in close proximity to large joints the *x*-ray has been of the greatest value in ascertaining whether or not the fracture extended into the joint. In one case of gunshot wound at the base of the thigh, in which the bullet passed in the direction of the trochanteric portion of the femur, opinions were at variance concerning the extent of injury to the bone; some of the surgeons made a diagnosis of fracture, while others contended that there was no fracture, but believed that the bullet had made a deep groove in the anterior portion of the bone and had possibly opened the capsule of the joint at the same time. The *x*-ray picture clearly demonstrated the absence of fracture and the existence of a deep furrow with numerous fragments on each side. The *x*-ray apparatus also proved of the greatest practical utility in showing the displacement of fragments in gunshot fractures of the long bones, and enabled the surgeons to resort to timely measures to prevent vicious union. The fluoroscope has greatly added to the practical value of skiagraphy. In the light of our recent experience the *x*-ray has become an indispensable diagnostic resource to the military surgeon in active service, and the suggestion that the chief surgeon of every army corps should be supplied with a portable apparatus and an expert to use it must be considered a timely and an urgent one.

The Wounded of the Battle of Santiago.—It will be of interest to the profession to know something definite of the nature of the wounds and of their more remote results on the victims of Spanish bullets in the battle of Santiago. Two weeks have passed away since the battle. A considerable number of the wounded have died since and many have left for the United States on the *Olivette*, *Solace*, and transport ships.

From among the one hundred and twenty-seven wounded now on the way to their homes on the hospital ship *Relief*, I have selected a number of cases of more than usual interest, for the purpose of studying the effects of the small-calibre bullet, immediate and remote, on the different organs and regions of the body. It is my intention to give the course of the bullets by marking on the diagrams accompanying the report of each case the wound of entrance and exit. A study of the diagrams will show that deflection of the bullet in the body is exceptional; as a rule, the wound canal was in a perfectly straight line from one wound to the other. By following the track of the bullet it is not difficult to determine the organ or organs implicated in the injury. I shall classify the cases so as to embrace gunshot wounds of, 1, the head; 2, the neck; 3, the spine; 4, the chest; 5, the abdomen; 6, the extremities.

Gunshot Wounds of the Head.—To my own knowledge a number of sufferers from gunshot wounds of the head who survived long enough to be transported to the general hospital at Siboney died within twelve days after the receipt of the injury. In all of the cases intracranial infection was the immediate cause of death. Encephalitis and leptomeningitis constituted the fatal complications. The beginning of the intracranial inflammation was always announced by cerebral hernia, which in size was proportionate to the extent and intensity of the inflammatory process. The surgical treatment resorted to in most cases proved powerless in limiting the infection. If these cases had been studied with a little more care during life and if post-mortem examinations had been made more frequently, valuable material could have been obtained for the advancement of the as yet imperfectly developed science of cerebral localization.

Case I.—Fred. Shockley, company D, tenth cavalry, wounded July 2d. When the injury was received the patient was lying on his abdomen with chest and head extended, at the base of the ridge occupied by the enemy, which position readily explains the unusual course of the bullet. The bullet struck the occipital bone at a tangent, producing a comminuting fracture with depression; it made a deep groove in the back of the neck and then entered the body on a level with the first rib to the left of the seventh cervical vertebra, passed through the chest, and escaped in front through the second intercostal space, a little to the left of the mammary line. Soon after the injury was received he coughed up a small quantity of blood; no hemorrhage since or any indications of hæmothorax, pneumonia, or pleuritis. The chest wounds healed by primary intention. At first he had convulsions for a few moments; no loss of consciousness, but clonic spasms of both arms. At present intellect is unimpaired; has some headache and a sensation of throbbing in the head; some impairment of motion and sensation of right leg and complete loss of motion of toes of right foot. Had some pain in eyes and slight dimness of vision.

Case II.—Patrick Ward, company I, third cavalry, admitted from hospital at Siboney to hospital ship *Relief*, July 11th. Injury probably received in the same manner as in Case I. A large defect in the occipital bone marked the wound of entrance and exit in the skull; the opening was enlarged by operation. The linear wound between and extending as far as the last cervical vertebra was undoubtedly made in following and removing the bullet. A cerebral hernia projects from the opening, and a deep-seated cerebral abscess was recently discovered, opened, and drained. In part the hernia is covered by skin. Both parietal bones are the seat of a comminuted fracture. Mental faculties not impaired; no focal symptoms. The patient is losing strength rapidly and will soon succumb to the intracranial lesion.

Case III.—James Russel, company A, thirteenth infantry, was wounded July 1st. When he was brought on board the *Relief*, a cerebral hernia about the size of a hen's egg was found over the sagittal suture, an inch in front of the occipital protuberance. The opening was evidently the wound of entrance, and by operation has been connected with the wound of exit by a channel an inch in length and half as wide. The hernia occupied the wound of exit. A number of loose fragments of bone have been removed at different times. There is marked hemiplegia on the left side; the forearm is strongly flexed and in close contact with the chest. Sensation not diminished; speech clear but ideas confused; pupils react to light; incontinence of urine; extensive decubitus over sacrum; temperature, 100.5° F.; pulse and respiration normal.

Case IV.—B. C. Parker, company C, fourth infantry, was wounded July 1st. The bullet entered the left temporal region, comminuting the bone in that region extensively, and escaped over the left frontal eminence. The cranial defect was increased by the removal of a number of loose fragments. There has been quite a profuse sero-purulent discharge from the wound. The only focal symptom consists of a prickling sensation of the right foot or chest when the wound is being dressed. Mind clear most of the time; occasionally slight confusion and wandering. The absence of cerebral hernia in this case is the surest indication that the infection is local.

Gunshot Wounds of the Neck.—Case V.—Lieut. Albert Scott, company C, thirteenth infantry, on July 1st, while standing with his company at the foot of a hill during the advance on Santiago, received a wound in the neck. The bullet entered the neck on the right side, just below the inferior maxillary bone, an inch in front of the angle of the jaw. The wound of entrance is a clean-cut hole about the size of a lead pencil. The course of the bullet was backward and slightly downward, emerging at the back of the neck on a level with and to the left of the fifth cervical vertebra. At the moment the injury was inflicted he felt no pain in the wound, but he experienced a sensation as if he had been grasped by the wrists and thrown violently to the ground. The wound of exit is of the same size and appearance as the wound of entrance; very slight hemorrhage. A few minutes after receiving the injury he was carried from the firing line by members of his company and was soon transported to the first division hospital, where he remained for ten days, after which he was removed in an ambulance to the hospital at Siboney, a distance of seven miles over a very rough road, and a day later was transferred to the *Relief*. He first became aware of the existence of the wound on the way from the field to the hospital. At the time he came on board the hospital ship he was voiceless and made constant efforts to clear the bronchial tubes of mucus. Complete paralysis of right arm and leg and partial loss of power in left arm and leg; respiration normal but an almost constant spasmodic cough; no control over sphincters; involuntary passages from both bladder and bowels; great debility and profuse sweating. Complains of pain all over the body. Morphine and atropine to subdue pain. A radiograph taken by Dr. Gray shows an injury of one of the cervical vertebræ, probably the fifth. Injury seems to be to the left of the body of the bone. Has received no treatment other than complete rest and a nightly anodyne as noted above, which secures a good night's sleep and markedly diminishes the sweating. Has regained control of the sphincters and is able to use bed pan and urinal. July 19th—during the past six days there has been a decided improvement in the general condition of the patient. He is bright in appearance; he can articulate more distinctly and there is a decided return of power in the right leg. The

right hand is still absolutely powerless, but the grip of the left hand is decidedly stronger. Appetite and circulation good. July 21st, improvement in general condition still continues. The external wound healed by primary intention and the scar can be seen only by making a careful inspection. Trional and sulphonal have been substituted for the morphine.

Case VI.—Oscar C. Buck, company F, second infantry, was shot by a sharpshooter hiding in a tree, July 1st. The bullet passed through the neck, from side to side. The first and only evidence that the patient had that he was injured was bleeding from the throat; the hemorrhage at first was quite profuse. Stiffness of the neck and pain on movement have been the only symptoms complained of since. The bullet entered over the sterno-cleido-mastoid muscle on the left side, about two and a half inches from the mastoid process. The wound of entrance was circular and very small; the wound of exit on the same level and about half an inch nearer the spine. Three days later a small superficial abscess formed in the wound of exit, which was evacuated by dilating the wound. Both wounds were perfectly healed July 20th. Judging from the course of the bullet, it is difficult to understand how the principal nerves and large vessels of the neck escaped injury. This is one of those cases that require careful watching, as a traumatic aneurism may develop in the event the bullet injured the external tunics of either carotid artery.

Case VII.—Charles F. Flickinger, company C, fourth infantry, was wounded July 1st, while lying down. The bullet entered the left posterior cervical triangle on a level with the spinous process of the fifth cervical vertebra, midway between the spine and the posterior border of the sterno-cleido-mastoid muscle, and emerged opposite the spinous process of the seventh dorsal vertebra, and equidistant from that point and the posterior border of the scapula. The patient complains of severe pains in the shoulders on attempting to move, but is free from any symptoms that would indicate any injury to the spinal cord. He was within one hundred yards of the enemy when he was wounded.

Gunshot Wounds of the Spine.—All who received gunshot wounds of the spine in which the cord was seriously damaged have died or will die in the near future. The immediate cause of death in such cases is either a septic leptomeningitis or sepsis and exhaustion from decubitus. Death from the first-named cause takes place early, as the result of infection of the wound and extension of the inflammation at the seat of the visceral injury along the meninges and surface of the spinal cord. The first case of this kind I saw at El Caney, a few days after the battle of Santiago. The patient was a Spanish prisoner. I found him lying on the bare stone floor of the village church. The bullet had entered over the centre of the spine at the junction of the dorsal with the lumbar vertebræ, its course apparently being directly forward. Complete paraplegia below the seat of injury. Bladder distended, reaching nearly the level of the umbilicus; incontinence of urine. The neck, trunk above the wound, and upper extremities rigid; fever; pulse rapid and small; countenance extremely pale. The wound was protected by a small, dirty dressing, and was suppurating. I doubt not the patient died in less than twenty-four hours after I saw him. Wounds of the spine without injury to the cord frequently gave rise to temporary paralysis, varying greatly in degree and duration.

Case VIII.—George Kelly, company C, seventeenth infantry, was shot July 1st, while lying in a prone position. The bullet, which was fired from a blockhouse on the summit of a hill, at a distance of about six hundred yards, entered the body at a point a little below and at the middle of the right ilium, and emerged from the opposite side about three inches below the crest of the ilium. The patient asserts that he suffered intense pain immediately after he was shot, and that he is now free from pain except when he attempts to walk. The pain thus caused he refers to the sacro-coccygeal articulation. The wounds are healed, and the absence of paralysis is the best evidence that the contents of the spinal cord escaped injury, although the bullet must have passed transversely through the first sacral vertebra.

Case IX.—John Robinson, company C, twenty-fourth infantry. The bullet entered the supraspinous fossa of the left scapula and escaped from the right lumbar region, having perforated in its long course the lung, spinal cord, diaphragm, and liver. Wounds healed in ten days. Expectoration bloody. Complete paraplegia. Beginning extensive decubitus over sacrum and spinous processes.

Case X.—Otto Derr, company A, twenty-first infantry, was wounded July 2d. Bullet passed through the chest from side to side, from the postaxillary line on the right side to a corresponding point on the opposite side on a level with the seventh intercostal space. Complete paralysis of motion and sensation below the seat of spinal injury. The wound healed, but life was threatened at the time from a commencing septic decubitus.

Case XI.—Lewis M. Carlisle, company K, seventy-first New York volunteers, was hit by a shrapnel in the back on a level with the third lumbar vertebra, the spinous and left lateral processes of the same being shattered. The missile was removed as soon as the patient reached the division hospital. As profuse suppuration set in and continued, the patient was anæsthetized on the 18th and a number of fragments of bone were removed. A large abscess cavity in the right lumbar region communicated with the wound. The cavity was drained by making a counter-opening in line with Simon's incision. Impaired sensation in the right leg was the most important focal symptom in this case.

Case XII.—Charles J. Reardon, company C, sixteenth infantry, was wounded by a fragment of shrapnel which struck him as he lay on his back with his shoulders raised, ready to fire. The wound was directly over the spine, on a level with the fourth dorsal vertebra; the missile evidently opened the spinal canal and injured its contents. The foreign body remains embedded in the tissues; its location so far has not been determined. Paraplegia is complete below the level of the umbilicus. On the 18th the patient was still alive, but an extensive moist decubitus will become the direct cause of death in the course of a few days.

Gunshot Wounds of the Chest.—It is well known that during the war of the rebellion men had a better chance for life when the bullet passed through the chest than when the chest was opened and the ball remained. The same remains true now, although not to the same extent, as the small-calibre bullet is less likely to carry with it into the chest clothing or other infectious material. The number of those with chest wounds who have lived long enough to reach the hospital on the coast is astonishing, and, what is still more surprising, is the fact that unless the hemorrhage was severe the symptoms were mild, some of the patients being confined to bed only for a few days. All of these cases were treated on the expectant plan—that is, by dressing the external wound or wounds; in no instance was the pleural cavity opened for the purpose of arresting the hemorrhage.

Case XIII.—William A. Cooper, company A, tenth cavalry, was wounded July 1st. The bullet entered an inch below the left nipple and escaped from the

body an inch below the costal arch in the mammary line. It is questionable whether the bullet opened either the pleural or the peritoneal cavity, as the injury was not followed by any symptoms referable to visceral wounds of the chest or abdomen, although the course of the bullet was such as to give rise to the suspicion that either or both of these cavities might have been invaded.

Case XIV.—Edward O'Flaherty, company C, sixteenth infantry, was wounded, July 2d, by a ball, forty-five calibre, from a bursting shrapnel. The projectile entered below the angle of the right scapula, passed through the lung, diaphragm, liver, and lodged beneath the skin in front between the seventh and eighth ribs. Bloody expectorations for some time and slight elevation of temperature. July 12th, temperature normal. July 21st, patient suffers but little inconvenience from his wound. No peritoneal or pleural effusion. General condition promises an early and complete recovery.

Case XV.—John B. Senica, company G, twenty-second infantry, was wounded, July 1st, by a bullet which entered his back just below the angle of the left scapula, passed upward through the lung, neck, and jaw, and emerged through the alveolar process of the right bicuspid tooth, cutting the tongue slightly. All the wounds healed in a short time by primary intention. Hæmoptysis profuse immediately after he was shot, and slight for the following few days. Left arm at first nearly powerless, with desquamation of the skin of the hand. Function of the arm returning gradually. In three weeks the patient was able to sit up for a short time each day. Physical examination of the chest at this time revealed nothing abnormal.

Case XVI.—Winslow Clark, company G, first volunteer cavalry, was wounded, July 1st, by a bullet which entered the chest after perforating the left scapula through the infraspinous fossa, three inches above the angle and an inch from the spinal border. No wound of exit. The probable course of the bullet was downward and forward. Some hæmoptysis and fever. No vomiting of blood. The hæmothorax was quite extensive, and was relieved by tapping a week after the injury. He is now (July 22d) convalescing rapidly.

Case XVII.—Arthur Fairbrother, company C, third cavalry, sustained a perforating gunshot wound of the chest, July 1st. The bullet entered the chest just below the middle of the right clavicle. No wound of exit. Hæmoptysis rather profuse, followed by hæmothorax. Has had fever off and on, probably malarial. Patient was admitted to the *Relief*, July 15th. Wound not completely closed. On coughing, dark fluid blood escapes. Nearly the entire pleural cavity filled with blood. Two days later three pints of dark fluid blood were removed by tapping and siphonage. Sputum at this time still bloody. July 22d, patient much improved. No signs of empyema. Hæmothorax diminished, but may require a second tapping.

Case XVIII.—Scanlon, company K, third cavalry, was wounded on the second day of the battle of Santiago. The ball entered the chest through the third rib, midclavicular line, on the right side, passed downward and backward, and escaped in the gluteal region on the same side, after perforating the ilium. The ball must have passed through the lung, diaphragm, and liver. Hæmoptysis slight, but distressing nausea, vomiting, and pain. Admitted to the hospital ship *Relief*, July 15th. At that time he had a temperature ranging between 100°–102° F., vomiting, diarrhœa, and rapid emaciation. Great pain over the liver and along the ascending colon. Hæmothorax and marked swelling in the region of the liver and abdominal cavity on the right side. Examination of the urine negative. Owing to the great debility and pronounced anæmia, it was not deemed advisable to resort to laparotomy.

Case XIX.—Henry Mitchell, company C, seventh infantry, was wounded July 1st. The bullet entered over the right acromion process, passed through the apices of both lungs, and escaped through the second intercostal space above the right nipple. No hæmoptysis at any time, dry cough, and a moderate hæmothorax on the right side. Has suffered from quotidian form of malarial fever, which is yielding to quinine. A speedy and complete recovery is expected.

Case XX.—Lieut. John Robertson, company G, sixth infantry, received a gunshot wound of the upper third of the right thigh at about three o'clock July 1st. The profuse hemorrhage was partly controlled by an improvised tourniquet applied by an officer of the line. He was carried to the rear by men of his company, and while thus conveyed he was shot in the left breast, the bullet entering just below the left nipple and passing through the chest in an antero-posterior direction. He was wounded a third time, the bullet grazing the inner side of the left knee. The first dressing was applied in the first division hospital. The fracture of the thigh was dressed by the use of a long splint. From here he was sent, on the 9th of July, to the third division hospital, and two days later was brought on board the *Relief*. At this time both chest wounds were healed. The thigh wounds remained aseptic. A radiograph showed great displacement of the fragments by overlapping. The fracture was then treated by confining the limb upon a double inclined plane, consisting of a hollow posterior splint made of the sheath of the leaf of the cocoa palm, to which was added an anterior thigh splint of wire gauze. After being dressed the limb was suspended in a sling. No pulmonary or pleuritic complications.

Case XXI.—Henry T. Darby, company D, thirteenth infantry, received a perforating gunshot wound of the chest, July 1st. The ball entered on the right side above the angle and at the outer border of the right scapula, passed through the chest, and escaped through the fourth intercostal space in front on the opposite side, two inches outside of the mammary line. When the patient came on board the *Relief*, July 9th, he complained of great difficulty of breathing; he was pale and greatly prostrated; temperature, 102° F. The physical signs indicated the presence of a copious pleuritic effusion on the left side. The chest was opened by an incision through the sixth intercostal space in the axillary line, July 11th. About three pints of fluid blood escaped. Gauze drainage. The lung expanded rapidly and the patient commenced to improve.

No further doubt remains in regard to the difference in the mortality of gunshot wounds inflicted with the large and the small calibre bullets. The cases related above appear to prove that the danger incident to gunshot wounds of the chest made by the small projectiles consists in complicating injuries involving the heart and large blood-vessels, and that in the absence of such injuries the progress is favorable. It seems that empyema is a rare remote result of such injuries. Rib resection and free incision and drainage of the chest must be reserved for cases in which a positive diagnosis of empyema can be made. The safest and best treatment for hæmothorax requiring operative interference is tapping and evacuation by siphonage.

Gunshot Wounds of the Abdomen. — Our recent experience in Cuba has more than ever confirmed my convictions that not infrequently cases of penetrating gunshot wounds of the abdomen will recover without active surgical interference. For years I have maintained, as the result of clinical experience and experiments on the cadaver, that a bullet may pass through the abdomen on a level with and above the umbilicus in an

antero-posterior direction without producing visceral injuries demanding operative intervention. Elsewhere the results of my experience and experimentation concerning such injuries have been published. If the bullet traverses the small-intestine area, it is more than probable that from one to fourteen perforations will be found. Four laparotomies for perforating gunshot wounds of the abdomen were performed at the first division hospital, the only cases to my knowledge during the Cuban campaign. All of the patients died. This unfavorable experience should not deter surgeons from performing the operation in the future in cases in which from the course taken it is reasonable to assume that the bullet has made visceral injuries which would be sure to destroy life without surgical interference. In other cases the employment of diagnostic tests for the purpose of determining the existence or absence of intestinal perforations will enable the surgeon to determine what course to pursue. Abdominal section is always justifiable in cases of internal hemorrhage sufficient in amount to threaten life. A number of gunshot wounds of the abdomen have been related in connection with gunshot injuries of the neck and chest, in which the cavities of the chest and abdomen and their contents were implicated at the same time, and which are on the way to recovery without laparotomy having been performed. I have seen a number of cases of perforating wounds of the abdomen in the first and third division hospitals that were on a fair way to recovery without operation, before they were sent home on transports. In most of these instances the bullet wounds were either in the umbilical region or in one of the iliac fossæ. The following case presents features of more than usual clinical and surgical interest:

Case XXII.—J. F. Taylor, company D, tenth cavalry, was wounded July 2d. At the time the injury was received he was in the ventral prone position. The bullet entered the left shoulder in the infraspinatus fossa of the scapula, and passed downward and inward and lodged under the skin in the median line, two inches above the umbilicus. Hæmoptysis considerable during the first day, when it gradually subsided. He complained of great pain and tenderness in the right side of the abdomen. No vomiting or symptoms of more than a circumscribed peritonitis. An abscess formed in the abdominal wall, which was opened July 20th, and the bullet was removed. From this time on the patient improved rapidly.

Gunshot Wounds of the Extremities.—It is a source of gratification to know that few primary amputations were made for gunshot injury of the extremities. All of the surgeons realized the importance of conservative measures in the treatment of such injuries, and limited amputations to cases in which the condition of the soft tissues precluded any other course. A number of secondary amputations became necessary to save life in cases of infected compound fractures complicated with injury and infection of the adjacent joint. Two cases of traumatic aneurism are now on board the *Relief*—one an aneurismal varix, the other an aneurism of the femoral artery.

Case XXIII.—Captain Mosher, company G, twenty-second infantry, received a bullet wound July 1st, during the advance on Santiago. Those who saw the patient first assert that the hemorrhage was severe and that he lost consciousness. He was removed to the first division hospital and transferred, July 10th, to the third division hospital, and the following day he was brought on board the *Relief*. I examined the patient at the front four days after the injury, and confirmed the diagnosis made by the attending surgeons, who had recognized the anatomical nature of the aneurism. The wounds healed by primary intention in less than two weeks. One wound was in the middle of Scarpa's triangle, and the other at the level and one inch posterior to the great trochanter on the same side. From the fact that there is shown by the radiograph a piece of the jacket of a bullet in the right popliteal space, it is probable that he was wounded by a plunging fire and that the bullet inflicted the latter wound after emerging from the wound in Scarpa's triangle. The wound in the popliteal space is suppurating. The patient is very anæmic and weak. In the triangle directly under the wound there is a pulsating swelling in the direction of the femoral vein, which extends to Poupart's ligament. Fremitus and the characteristic bruit extend a considerable distance above and below the communicating opening between the artery and vein. The treatment consists in rest and tonics. The general health of thepatient is improving, but there is no change in the local condition. The mental condition, much impaired since the injury, is gradually improving.

Case XXIV.—John J. Welch, company M, second Massachusetts volunteers, was wounded July 1st. The bullet entered Scarpa's triangle three inches below Poupart's ligament, directly over the femoral artery, and escaped at a point corresponding with the gluteal crease and to the outside of the femur on the same side. Not much hemorrhage. A well-marked aneurism developed, presenting all of the physical signs characteristic of such a pathological condition. The swelling is somewhat elongated, a little larger than a hen's egg, and has not increased in size since the patient came on board the hospital ship. The leg is somewhat œdematous and painful.

A number of gunshot fractures of the thigh and leg have become infected, and are now being treated by establishing free tubular drainage and resorting to frequent or continuous antiseptic irrigation. Owing to the want of reliable plaster of Paris, we had to resort to various kinds of splints, simple and double inclined plane, in effecting immobilization. The sheath of the leaf of the cocoa palm has served as an excellent material for this purpose. There is every prospect that most of these cases will ultimately recover with useful limbs.

In conclusion, I desire to thank Acting Assistant Surgeons Metcalfe, Torney, Greenleaf, Morrow, Hartsock, and Schultze, for valuable assistance in preparing this communication.

On Board the Hospital Ship "Relief,"
July 22, 1898.

THE ETIOLOGY OF GASTRIC ULCER, AND AN OUTLINE OF ITS THERAPEUTICS.

By A. A. BERG, M.D.,
new york.

Of late years the diseased conditions of the stomach have received more than their quota of attention from the specialist, the surgeon, and the general practitioner; and justly so, for, although the recent excision by Schlatter of the entire organ has conclusively shown that its presence is not vital, yet its importance to the general well being of the individual is of the highest; and in its diseased state the comfort, the economy, and the nutrition of the patient suffer greatly.

Its normal chemical and mechanical functions are at the present day fairly well understood, and the knowledge we have of its working in health has enabled us to carry out a rational form of therapeusis when it is diseased; but while our attention has been directed to the chemistry and functions of the stomach in health and disease, little thought has been given to the prevention of gastric affections, and in these days of preventive medicine more care should be given to

the avoidance of those causes and factors which result in pathological states. This can be accomplished only when we are fully aware of the pathogenesis of the disease we wish to prevent.

It is with this idea in view that I have been led to consider the etiology of gastric ulceration. The subject has been recently much discussed abroad by both the physician and the surgeon; and owing to the highly meritorious labors of such men as Leube, Carle, Mikulicz, and Doyen we have come to consider gastric ulcer in a new light. It is no longer to be classed as entirely in the domain of the internal medical diseases, and the recent statistics of Doyen, Mikulicz, and others prove that much can be done for those cases of ulcer which have resisted all attempts of diet and drugs to bring about healing.

Our earliest works on medicine took notice of what we understand to-day as idiopathic or primary gastric ulcer, and from these earliest times up to the present day succeeding generations of medical men have attempted to explain the pathogenesis of this condition; so that our literature abounds with theories as to the cause of this primary ulceration of the stomach wall. Some of them can be fitly applied to a class of the cases; others have not stood the test of time at all, and have been consequently abandoned for more rational theories.

Let me rapidly review some of the more prominent of the previous explanations. The theories which have received greatest support up to the present day may be classed under the following heads: Due, first, to changes in the blood and vascular system; second, to changes in the gastric juice; third, to disturbances of the nervous system, including the spinal cord.

As regards the changes in the blood, they may be considered under two distinct headings: (*a*) changes in the amount of the blood; (*b*) changes in the chemical relations of the blood.

It was shown experimentally by Quincke and Detwyler that when acute anæmia was induced in an animal by venesection an artificially produced lesion of the gastric mucosa did not heal; whereas Griffin and Vassale have demonstrated that artificially produced ulcers of the gastric mucosa in healthy animals healed very quickly. The only conclusion we can draw from these experiments is that when the nutrition is poor, as must be the case in a severe acute anæmia, healing, if it occurs at all, must necessarily be a slow process. These experimenters do not say whether such lesions healed if the animals experimented upon were allowed to regain their normal condition.

As regards the importance of chemical changes in the blood, much has been said and written. To Pavy belongs the credit of first suggesting the importance of changes in the chemical reaction of the blood as being of causative relation to the pathogenesis of gastric ulcer.

In the healthy individual the normal gastric juice is prevented from digesting the gastric mucosa by its neutralization with the alkaline blood, as soon as it penetrates the mucous membrane; such digestion is possible, according to this idea, only when one of three conditions attains: (*a*) hyperacidity of the gastric juice, and hence its neutralization by the alkalinity of the blood being no longer possible; (*b*) when the circulation in the stomach wall is so poor that neutralization of the gastric juice is not possible by the small amount of blood circulating in its walls; (*c*) when the alkalinity of the blood itself has been diminished.

The first of these conditions, viz., such hyperacidity of the gastric juice that its neutralization by the blood is not possible, can scarcely be referred to as a causative factor in the production of gastric ulcer; because, firstly, not all cases of gastric ulcer are attended with hyperacidity[1]—thus, out of eighteen cases in Eichhorst's clinic, eight had normal HCl, four hyperacidity, three hypacidity, and three anacidity; secondly, if such neutralization were impossible, why does not the digestion extend to the entire gastric wall?

This latter objection would apply equally well to the other two conditions just referred to, viz., diminished alkalinity of the blood or poor gastric-wall circulation. At this point we can also mention the importance of changes in the vascular system and their etiological influence in the production of gastric ulcer.

Pavy showed that ulcer could be produced by ligation of the vessels of the stomach wall; Miller, by ligation of the gastric and portal veins; and Panum, by artificial embolism of the gastric vessels. Such experiments merely indicate a local gangrene of the parts supplied by the affected vessels, and when such disease exists in the human body we would expect a lesion such as was produced by these experimenters. But such an ulcer is evidently not what we mean by primary gastric ulcer, nor are such diseases of the vascular system demonstrable in the vast majority of cases of gastric ulceration. Then, again, the theory of Klebs, that gastric ulcers are due to disturbances of circulation attendant upon spasm of the blood-vessels, is hardly tenable; for such spasm would have to be of long duration and localized to a small area of stomach wall. Again, the opinion of Axel Key, that ulcers are due to a circulatory disturbance following a spastic condition of the muscularis, is non-applicable, for the same reason. The local necroses of the mucosa that follow upon ecchymoses into its substance will explain only those cases in which a hemorrhage into the mucous membrane can be distinctly proved. But this condition, again, can hardly be classified along with the primary ulcers of the stomach, for they are of entirely different causation, and entirely different in their clinical behavior.

The importance of disturbances of the nervous system in their etiological relation to gastric ulcers is gaining recognition by many. Koch and Ewald, Schiff and Ebstein, have shown that section of the spinal cord, injuries to the anterior horns of the spinal cord, and section of the medulla are followed by gastric hemorrhage and ulceration, and hence infer that spinal-cord lesions are often factors in gastric ulceration. But such spinal-cord disease has not as yet been demonstrated in the human being as attended with gastric ulcer. Micro-organisms have also been assigned as a cause of gastric ulcer. Thus Boettcher isolated colonies of micrococci from the surface of the ulcers; Letulle isolated streptococci, which he thinks produce ulceration in one of two ways—either directly, when they are deposited on the mucous membrane; or when they are brought by the blood as emboli to the stomach from inflammations in distant organs.

From this rapid survey of the theories heretofore advanced as the causative factors in the production of the pathological condition under consideration, we see at once, first, that gastric ulcer has been considered as a unique condition, bearing no similarity or relation to ulceration in other parts of the body; but as long ago as 1859 W. Brinton, in his treatise on gastric diseases, said: "We have no more right to talk of the ulcer of the stomach than of the ulcer of the leg;" and, while he does not explain the true pathogenesis of gastric ulceration, we are commencing to see the full truth of his remark; secondly, that no one theory will explain the etiology of all cases of strictly primary gastric ulcer; and thirdly, that the clinical history of these cases is ascribed to the presence of the ulcer. But why some cases of ulceration of the stomach are

[1] Jaworsky and Korczynski (Zeitsch. f. klin. Med., Bd. xii.) and Riegel (Deut. med. Wochensch., 1886) asserted that all cases of gastric ulcer were attended with hyperacidity.

never attended with any or at the most only slight clinical manifestations is not accounted for.

Before I go on to state what I consider to be the real pathogenesis of gastric ulcer, let me review the site of these ulcers in the stomach wall, the age at which they are most frequently met with, and the geographical distribution of the disease.

In the first place, many facts tend to show its close relation to a diminished functional activity, viz., (*a*) its greater predominance in the female sex; (*b*) its very frequent association with anæmic and tuberculous conditions; (*c*) its absence in regions where the people are sturdy and vigorous—for example, the Alps, Russia; and (*d*) its presence in many of those who follow a sedentary life—for example, shoemakers, weavers, tailors, etc.

As regards the site of gastric ulcer, we find here a striking fact, viz., that the ulcer is situated most commonly on the posterior wall of the pyloric portion at or near the lesser curvature. Surely this would point to the pylorus as the offending member in the production of the majority of these cases, for there is certainly no other reason for the site of the ulceration being at this part.

Let us now consider the physiology of the stomach as a muscular organ. When food is introduced into the stomach, the pylorus closes and the stomach becomes a closed pouch in which the food is churned thoroughly with the gastric juice. This churning-process goes on until the requisite changes have been wrought in the food, when it is ready to be propelled onward into the duodenum. The plyorus now opens and the stomach resolves itself into two distinct parts: (*a*) the fundus, which continues to act as a churn; (*b*) the pyloric end, which becomes a pump in its action and pumps the chyme into the duodenum.

This physiological fact is again very important to bear in mind in considering the pathogenesis of gastric ulcer. In the normal stomach we find that about seven hours after eating it has emptied itself, and upon the completeness with which this takes place depends to a great degree its condition of health or disease.

The stomach may fail to empty itself from one of two causes: (1) Imperfect opening of the pyloric orifice. (2) Imperfect functional activity of its muscular coat.

The causes which lead to imperfect opening of the pyloric orifice are: (1) Fibrous change in the pylorus, resulting from a pyloritis or inflammation in the neighborhood extending to the pylorus. (2) Spasm of the muscular fibres of the pylorus, depending on changes in the mucous membrane of the stomach, *e.g.*, ulcer or fissure, or changed secretion, as occurs in chronic gastritis—the latter being especially important.

The functional inactivity of the muscularis is of less importance than pyloric stenosis. Complete atony is of rare occurrence, but incomplete muscular power of the stomach wall by delaying gastric digestion can reflexly provoke pyloric spasm.

The operation of either of these two factors is able to cause a stagnation of stomach contents; and so important is the absence of this stagnation to a healthy state of the stomach wall and its secretion that it has been well said: "The cause of all disturbances of the stomach, whether attended by excessive or diminished HCl, is stagnation" (Carle).

Of the two factors essential to the production of stagnation, the pyloric stenosis is probably the more important. Doyen says, in this connection: "The pylorus is the enemy—its excessive irritability is the cause of the most varied gastric disturbances and the most persistent of the anatomical lesions that accompany it."

Assuming, then, for the present that, on account either of a stenosis of the pylorus or of an insufficient action of the muscular coat, there is stagnation of chyme in the pumping-portion of the stomach, need we go any further to explain the pathogenesis of gastric ulcer?

Let us look for a moment to other hollow viscera where there is stagnation of the contents of the canal—the result, for instance, of a stricture. Do we not find in almost all cases of long-standing stricture an ulceration of the mucous membrane above the site of the stricture? In stricture of the rectum is there not ulceration above the site of stricture? In strictures of the œsophagus is there not ulceration of the œsophagus above the stricture? In strictures of the urethra is there not ulceration behind the stricture? Furthermore, such ulceration is similar in many respects to gastric ulceration: it is circumscribed, does not extend marginally as a malignant ulcer, but rather tends to extend into the depths of the viscus. Again, like gastric ulcers, they have sharply cut edges and are in the immediate vicinity of the strictured portion, just as gastric ulceration is in the immediate vicinity of the stenosed pylorus.

The presence or absence of hyperchlorhydria is entirely independent of the production of gastric ulceration. The gastric wall is as well protected from its own digestion by the gastric juice as the blood is prevented from clotting in its own blood-vessels.

I assert, therefore, that the pathogenesis of primary gastric ulcer depends, as ulceration in other hollow viscera, entirely upon the mechanical cause of stagnation; that when an impediment is offered to the outflow of gastric contents, be such impediment a stenosis of the outlet or a deficient propulsive power of the organ itself, then only will ulceration result; that the presence of the gastric juice has no material influence upon the production of gastric ulcer; that auto-digestion of the gastric wall is not necessary to produce a gastric ulcer, and if it were essential it would be as impossible as it is for blood to clot in the healthy living blood-vessels.

We must, then, only find a cause for stagnation of stomach contents in order to explain the pathogenesis of this condition. As I said before, such stagnation is due either to pyloric stenosis or to muscular insufficiency. It has been proven that the condition of the gastric juice in chronic gastritis is such that it cannot carry out its functions either properly or in the required time. Such disturbance and delay in gastric digestion are one of the most frequent causes of evoking pyloric spasm, and this results in stagnation of chyme in the stomach, with consequent dangers of ulceration from purely mechanical causes. Changes in the gastric juice, whatever their nature, if they interfere with the proper functions of the juice, can provoke pyloric spasm and so give rise to ulceration of the stomach wall. In impoverished conditions of the system, such as occur in anæmia, tuberculosis, etc., when the gastric juice is not able to carry out its proper functions, we can readily see how ulceration results; and when we consider in addition the poor muscular condition we have another factor to aid in causing stagnation of chyme in the stomach.

Fissures, when they exist in the gastric mucosa, are of themselves able to evoke pyloric spasm, and so give rise to ulceration of the stomach wall. Furthermore, an ulcer once formed increases the pyloric spasm, and so aggravates the local condition.

We must admit from these premises that gastric ulceration is simply dependent upon purely mechanical laws, just as ulcerations behind strictures in other hollow viscera depend on stagnation behind the stricture; that the presence of the HCl is entirely unnecessary in explaining its pathogenesis.

Let us now look at the clinical picture of this dis-

ease, and see whether its symptomatology harmonizes with this condition. We know very well that many cases of gastric ulcer run their course and never give rise to any clinical symptoms; the patient is never aware of the presence of an ulceration of the stomach, and were it not for the scars which are left behind and which are found on the post-mortem table, their existence during the life of the patient would never have been known. We must infer, therefore, that the ulceration *per se* is not the cause of the clinical manifestations associated with ulcer of the stomach; for why should a certain train of symptoms follow one case of gastric ulcer and not another? The symptoms must evidently be dependent upon another factor, and that factor is stagnation, which was pointed out before as being the cause of most gastric disturbances. In the majority of cases this stagnation is the result of pyloric stenosis, which in turn is most frequently consequent upon some hindrance or disturbance in gastric digestion—a frequent result of chronic gastritis, with the changes it produces in the gastric juice.

What are the symptoms associated with ulceration of the stomach?

(*a*) Pain. This depends to some extent upon the presence of the ulcer, but is increased by pyloric spasm and when there is also present hyperchlorhydria.

(*b*) Hyperchlorhydria, *i.e.*, an excessive amount of HCl in the gastric juice. This is not an invariable symptom, as pointed out before, but is present in about one-half of the cases. Out of forty-four recent cases reported by Carle in Langenbeck's *Archiv*, hyperchlorhydria was present in twenty cases; in nine, normal amount of HCl; in eight, hypochlorhydria; in five, anachlorhydria.

It can be explained as follows: The constant irritation of undigested fermenting food in the stomach provokes an excessive secretion of the gastric juice, and so gives rise to hyperchlorhydria. When there is an atrophy of the peptic and pyloric glands, as is often found in chronic gastritis, we would expect hypochlorhydria or anachlorhydria. It has been suggested that the hyperchlorhydria is the first result of stagnation, and that the excessive HCl causes digestion of the gastric mucosa and so produces ulceration. But this would leave unexplained the fifty per cent. of cases in which there is no hyperchlorhydria, but even hypochlorhydria or anachlorhydria; whereas, if we consider the ulceration as due simply to the presence of stagnation of food behind a stenosed orifice, and the hyperchlorhydria or hypochlorhydria or anachlorhydria as merely an associated phenomenon and the result of the irritation of the glands of the stomach mucosa, we explain all cases on a rational basis. Hyperchlorhydria, then, when it exists, is entirely independent of gastric ulcer, but follows stagnation of food in the stomach.

(*c*) Vomiting depends partly on the stagnation of the food, for by this means the stomach attempts to empty itself. When due to this cause alone the pyloric stenosis must be of a rather considerable degree. It also depends to some extent on the hyperchlorhydria, the excessive HCl irritating the gastric nerves and so producing vomiting reflexly.

(*d*) Hemorrhage. This depends on the ulcer, and occurs when a blood-vessel has been eroded by the ulceration.

(*e*) The symptoms of dyspepsia are dependent entirely on the chronic gastritis, which is usually associated with the ulcer.

Of this train of symptoms, then, that of pain and hemorrhage alone can be ascribed to the ulcer—the former only to a limited extent, the latter entirely. Of the other, the chronic gastritis is usually the forerunner of the entire story. The hyperchlorhydria when it exists is entirely independent of the ulcer, but, like the vomiting, is due chiefly to the stagnation of food in the stomach. If the stagnation is slight in degree, the ulcer is apt to be small and the symptoms are but little marked—the severity of the symptoms being entirely dependent on the extent of the pyloric stenosis or muscular atony and the consequent stagnation which they produce.

Having thus set forth the grounds upon which I consider the pathogenesis of gastric ulcer to be the result of pyloric stenosis, or, in rare cases, muscular atony, and the consequent stagnation which they produce, I would like to say a few words as regards the therapeusis of gastric ulceration, considered from this standpoint of its etiology.

Until quite recently gastric ulcer was claimed to be entirely in the domain of the internal physician, but the pendulum is commencing to swing in the opposite direction and the surgeon's aid is commencing to be more and more invoked in the treatment of those cases which have not yielded to the healing powers of medicines and diet; and his calling has not been in vain, as recent statistics well show.

In laying down a rational therapeusis of this affection, let us see what are the conditions that must be satisfied and how we deal with them in other parts. When we wish to heal an ulceration behind a stricture or stenosis in any hollow viscus, we do away with the cause of the ulceration, *i.e.*, divide the stricture or remove the stenosed part. We should be but rarely successful in our endeavors to heal the ulcer if the cause for the ulceration were left behind. And yet we have treated gastric ulcers in just that way—we have considered the ulceration as an entity in itself and have treated it in that light, whereas, from the foregoing considerations, we see it is not a pathological entity, but only one result of gastric stagnation. What, then, must we consider to be the rational therapeusis of gastric ulcer? Firstly, we must remove the pyloric stenosis; secondly, increase the functional activity of the muscular coat. If these two factors are met and satisfied, the stagnation in the stomach will be removed, and the ulcer, the result of stagnation, will heal spontaneously. How, then, are we to meet these two factors? (*a*) By medical means; (*b*) by surgical means.

Medical Therapeutics.—We have said that chronic gastritis is a very frequent cause of pyloric spasm. Our efforts, then, must be directed to the alleviation of the chronic gastritis, if we would do away with the spastic condition of the pylorus. If we interview our patients with gastric ulceration, we will find that the majority of them give an initial history of quite severe pyloric pain, gastric distress, and noises in the stomach for several hours after eating—a history pointing to pyloric spasm and commencing gastric stagnation. This is the stage when ulceration can be avoided if the proper prophylactic measures are taken. These measures are: (1) Regulation of diet; (2) aiding digestion by ferments; (3) increasing the muscular tone of the stomach wall.

When an ulceration exists, our therapeutics must be directed in the same channel, *i.e.*, attempting to remove the stagnation by doing away with the pyloric spasm. The chief method we rely on is the regulation of the patients' diet. I do not consider it necessary to exclude all solid food from the regimen of these patients, but only such food should be allowed as can be easily passed through the spastic pyloric orifice. This includes (1) general fluids; (2) soft, mushy articles of diet, such as zwieback, toast, and raw eggs.

All food which tends to leave large pieces in the stomach, to be propelled onward into the duodenum, must be carefully withheld. All food which does not mix well with the gastric juice must also be avoided, and all irritating articles of diet which increase the gastritis must be forbidden. The food must never be

taken in large quantities, but in small amounts and frequently.

Lavage of the stomach is often of value in those cases in which the symptoms of chronic gastritis are very marked. Hemorrhage, or indications of deep-seated ulceration, *e.g.*, local peritonitis, would of course contraindicate such procedure. Lavage not only serves to benefit the gastritis, but also removes the stagnant material from the stomach. In performing lavage we should never distend the stomach to its utmost, but, having found out how much the organ will hold, pour a little less than this amount into it at each filling.

As regards medication, I consider only such medication to be warranted as will directly benefit the condition of the stomach. The use of bismuth or other insoluble salts, on the theory that they will form a coating to the ulcer beneath which healing will occur, is to me entirely without basis, for healing will occur without these protecting coats of insoluble salts if the head and front of the offending are removed. Similarly the use of nitrate of silver, with the hope of forming a coating of albuminate of silver for the ulcer, is without *rationale*. When, however, the plyoric spasm is intensified by the presence of the ulcer, as indicated by intense pyloric pain, the use of the insoluble salts by protecting the surface of the ulcer will do away with the reflex spasm, and so serve a useful purpose.

Besides this, medication should be directed to aiding gastric digestion with the artificial ferments and improving the tone of the gastric muscle. The symptomatic treatment should be carried out as the symptoms arise.

Leube has recently advised the use of hot fomentations to the gastric region, continued for ten or fourteen days' time. I have had no experience with such extended use of local heat, but should surmise it to be of value in reflexly lessening pyloric spasm.

Rest in bed, if the general tone of the patient is a poor one, *e.g.*, in overworked anæmic individuals, restores that tone to the patient, improves the condition of the gastric juice, and so aids digestion and propulsion of food contents into the duodenum. Otherwise a fair amount of exercise should be demanded of these patients.

Surgical Treatment.—I have already said that the treatment of gastric ulceration is being more and more looked at from a surgical standpoint. I do not by any means wish to convey the idea that all cases of gastric ulceration must be subjected to the knife. Leube has given the statistics of four hundred and twenty-four cases of gastric ulcer, seventy-four per cent. of which were healed by medical means. It would obviously have been wrong to have subjected these cases to operation; but in cases in which medical measures have been tried and found wanting the surgeon's aid should be enlisted. Mikulicz says in this connection that "one needs only to see such a patient before operation and six months after operation to be convinced of the value of surgical interference."

The special indications calling for surgical interference have been so well expressed by Leube, in a recent article, that I will quote them in full. He considers them as relative and absolute.

"(*a*) Hemorrhage. (1) Absolutely indicated by continuous oozing of blood, especially if there is an associated gastrectasia. (2) Relatively indicated by profuse hemorrhage, but operation is contraindicated in a single profuse hemorrhage, when opium and ice should be used.

"(*b*) Progressive inanition, dependent upon severe pain and continuous vomiting, constitutes a relative indication for gastro-enterostomy.

"(*c*) Perigastritis, adhesions between the stomach and neighboring parts, subphrenic and other peritoneal abscesses, constitute indications for surgical aid; absolutely, when an accompanying abscess exists and when the walls of the ulcer are so much thickened as to be felt through the abdominal wall.

"(*d*) Sudden perforation into the free abdominal cavity absolutely indicates surgical interference, and that as early as possible after the initial shock; but operation is not indicated in cases of gradual perforation, accompanied as they are with adhesions to neighboring viscera. Here opium and rest are to be preferred."

The indications for surgical interference having thus been laid down, the question next arises, What should such interference be? One of two procedures is open to the surgeon: (*a*) pyloroplasty (Mikulicz-Heinecke); (*b*) gastro-enterostomy—that is, a procedure which will do away with stagnation of the stomach contents. Of these two procedures, the pyloroplasty whenever it is possible should be done; but it may happen, on account of adhesions to the neighboring parts, that the pylorus is not accessible and cannot be drawn out of the abdominal cavity. In these cases a gastro-enterostomy is to be preferred. The recent statistics of Mikulicz on pyloroplasty and gastro-enterostomy for ulcer are:

1891–1897.	Cases.	Healed.	Died.	Mortality Per Cent.
Pyloroplasty and gastroplasty..	76	66	10	13.2
Gastro-enterostomy	68	57	11	16.2

The ulcer itself, unless it has given rise to hemorrhage or abscess, needs no treatment; the removal of the cause will be followed by its spontaneous healing, for it has been proven by Mikulicz that when the pyloric stenosis accompanied by ulcer has been relieved, thus securing a complete and rapid emptying of stomach contents into the duodenum, the ulcer without any other treatment healed spontaneously.

In concluding this paper, I would like to sum up the principal points I have mentioned:

1st. That gastric ulcer is not a unique condition, but bears a strong resemblance to ulcers in other parts which have a similar pathogenesis.

2d. That auto-digestion of the living gastric walls by gastric juice is as impossible as for the blood to clot in the healthy living blood-vessels.

3d. That gastric ulcer is due to stagnation in the pumping-part of the stomach behind a stenosed orifice —be such stenosis a spasm or an organic stricture of the plyorus.

4th. That hyperacidity and the other clinical manifestations are dependent on the stagnation.

5th. That the treatment, whether medical or surgical, must be directed to the cause of the ulcer, *i.e.*, in removing the pyloric stenosis.

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Cause of Death after Extensive Burns. — The cause of death after burns is a toxic ptomain, and is not due to the toxins which may be produced in the burns by bacteria, or to anatomic changes which the blood corpuscles or the organs of the burned area may have undergone.—Agello *and* Parascandolo.

CEREBRAL HEMIPLEGIA FOLLOWING DIPHTHERIA, WITH REPORT OF A CASE.[1]

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Paralysis in some form is a very frequent sequel of diphtheria. According to Gowers, one-fourth of those who do not die from the primary disease suffer subsequently from paralysis. It is as frequent after mild as after severe attacks. The most common form is paralysis of the palatal muscles, causing regurgitation of food and nasal voice. Paralysis of the ocular muscles, especially those of accommodation, is not infrequent. The lesion, though not always the same, is generally considered to be a peripheral neuritis. The extremities are sometimes affected, the neuritis then being multiple. Recovery is the rule in all of these forms. The case I have to relate is of another kind and of a much more serious character.

The case is that of a young woman of nineteen, who was sent to the Reception Hospital in Sixteenth Street, on June 3, 1896. She had been ill for several days, under the care of Dr. Packard. She appeared to be fairly strong, but rather anæmic and of a nervous, excitable temperament. During her first two days in the hospital she had several hysterical attacks. The diphtheria was of a severe type, affecting the nasopharynx, with profuse nasal discharge. There was albumin in the urine, and it persisted up to the date of her discharge from the hospital. There were no other symptoms of nephritis, such as suppression, casts, or œdema. The heart was normal throughout, and the pulse was of good quality.

As the patient had been ill for several days previous to her admission to the hospital, Dr. Packard thought it as well not to give antitoxin. The treatment consisted of frequent irrigation of the nose and throat, according to the usual method employed in the Willard Parker Hospital, and free stimulation with whiskey and strychnine. The throat was clear of membrane in a week and there were no unfavorable symptoms, with the exception of the albuminuria, which was slight. The mother of the patient was at the hospital with her, and was most anxious to take her to her home in Meadville, Pa., at the earliest possible moment. The cultures from the throat were free from bacilli on June 18th, fifteen days after her admission, and on that day the patient left with her mother. She had been up and about her room for three or four days, and just before she left it was noticed that her voice had a slight nasal tone. The mother understood that we did not approve of her daughter's leaving so soon, and promised to keep her as quiet as possible after reaching home and to place her under the care of their family physician.

About two weeks later I heard indirectly that the patient had been suddenly seized with paralysis of the leg and arm on one side, accompanied with loss of speech. Bearing in mind the hysterical character of the girl, I was not inclined to believe that the paralysis was genuine. I accordingly wrote to the mother that that form of paralysis did not occur after diphtheria, and that it would probably soon pass away. A few days later, however, I received a letter from the attending physician, Dr. W. D. Hamaker, which promptly convinced me of my error. The letter is so well expressed that I give it in full:

"When Miss ——— arrived home she seemed to be doing very well, but a few days later she developed symptoms of postdiphtheritic paralysis, shown only in the throat muscles—some difficulty in swallowing and a nasal tone to the voice. A few days later I was sent for early in the morning, and found her right arm completely paralyzed. This passed away entirely in about two hours. On the two following days she was very well, and could not be induced to observe care—she felt so well. That evening she was seized suddenly, while preparing to retire, with paralysis of the right arm and right side of the face, with loss of speech. By morning the paralysis was complete on the right side. Up to the present time (July 4, 1896) she has had no return of speech, the arm is helpless, but she is able to move the foot and leg a little. The tongue protrudes almost straight; swallows well; some appetite. General condition fair. Some albumin in urine. Anæsthesia of arm and leg almost complete at first; at present not marked. Our diagnosis has been hemorrhage in left side of brain."

It was evident that there was a vascular lesion in the left hemisphere, but I was inclined to think it rather of the nature of a thrombosis, considering the youth of the patient and the transient character of the first attack of paralysis affecting the arm.

On July 14, 1896, I received a second letter from Dr. Hamaker, stating that the patient had improved somewhat; she was able to speak one or two words, and had regained some power over the leg. The right side of the face showed some improvement: no power had returned to the hand or arm. Albumin had disappeared from the urine. He thought the case was one of hemorrhage, because there had been no history of rheumatism and there were present no symptoms of any heart disease. The valvular sounds were normal.

A letter received yesterday from Dr. Hamaker informed me that the patient was now able to walk with a very slight limp, but that she had little use of her hand. Mentally she was as bright as ever, but there was not much improvement in her speech. On two occasions she had had severe convulsions—once after some unusual fatigue, the second time on rising in the morning.

As I have already intimated, postdiphtheritic paralysis of cerebral origin is extremely rare. Most writers on nervous diseases and on diseases of children fail to mention it at all. Gowers gives it four lines, although he devotes sixteen pages to the usual forms of paralysis following diphtheria. There are thirty-five cases in all recorded in medical literature. The case I have just reported is the only known instance among the thousands of patients treated at the Willard Parker Hospital during the past few years. As the paralysis does not occur, as a rule, until convalescence is established, it is quite possible that it may have occurred in some of the patients after they had left the hospital.

The cause of the paralysis is not always easy to determine. In the thirty-five reported cases the lesion was thought to be hemorrhage in seven cases and embolism in fourteen; in the other fourteen the diagnosis was uncertain. Six cases have come to autopsy: in one of these a hemorrhage was found in the internal portion of the lenticular nucleus, with destruction of the neighboring part of the internal capsule. In the other five cases there was embolism of the Sylvian artery. Whether the vascular lesion be hemorrhage, thrombosis, or embolism, it is probably situated in the internal capsule in the great majority of cases. Postdiphtheritic cerebral hemiplegia is most common in children from eight to fifteen years of age. The prognosis is grave, as in similar lesions in adults. In the total thirty-six cases, there was complete recovery in four, death in seven; in all the others there was permanent paralysis of greater or less extent.

[1] Read at a meeting of the Practitioners' Society of New York, May 6, 1898.

Tetanus.—Of twenty-four patients treated with antitoxin, twelve recovered and twelve died. The less violent the symptoms the better the results.—Webber, *Lancet*, 1897.

THE STUDY OF EPILEPSY.

By EDGAR J. SPRATLING, B.Sc., M.D.,

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This should be undertaken with the full appreciation of the fact that the seizure or fit is only one of a group of symptoms; it is the pathognomonic sign, and should be studied as such and not as the disease itself. Its appearance at this or that time would not by any thinking man be ascribed to accident; neither would he think of it as being *ipso facto*, but rather as the culminating phenomenon of a series of abnormal, or at any rate untoward conditions, which may not individually be pathologic, but when taken together reach the one inevitable climax.

A function may be simply perverted by extraneous circumstances, without its parent organism being actually diseased; and so a condition of tissue predisposing to a certain disease may be congenital, yet the disease never develop. One may have intestinal glands peculiarly fitted for the lodgement of the typhoid bacillus and yet never become infected. And so we might go through a whole catalogue of negative conditions, and what applies to any disease applies just as forcefully to epilepsy. There must be present the necessary histological formation of the cells, together with an inciting cause, to make it a possibilitity in any given subject. This histological formation must be developmental, most likely prenatal, or degenerative, in the elements of at least one set of brain cells, and some physiological function be perverted to act as the immediate incentive; probably in every case more than one such factor is present.

Among such derangements of physiological functions causing epilepsy, malassimilation with its parent dyspepsia holds without dispute in my mind first place. This is particularly true of the cases prone to pass into the so-called "epileptic state," which is largely a resultant maniacal delirium with exhaustion, complicated by toxic infection, giving high temperature; if not promptly relieved, generally resulting in death. The writer has found by experiment in many cases that as soon as the intestinal tract was made absolutely clean the epileptic state would have disappeared, leaving a sound sleep and a quiet awakening. The matter ejected by the cleansing of the alimentary tract would be found highly acid, while the normal secretions would be very scarce. Badly digested and imperfectly assimilated food mean a systemic poison, just as truly as any ptomain received into the body would be poison.

Probably the inciting cause next in importance is an abnormal arrangement or disarrangement of some portion of the body; certainly each case of the so-denominated Jacksonian variety has such origin. It may be the remains of an old neuritis, the scar of a gastric ulcer, an obstetric injury, or any other injury, or it may start from an ear disease, an eye strain, or a tumor, and a partial convulsion caused thus may become general and obscure the real type to which it should be referred. We see by that that the history of every case must be inquired into minutely; a great many more cases than are generally supposed begin in this way, and by the time they are studied by the neurologists the real type is lost and often even the aura itself has ceased to recur, and the convulsive habit has been so firmly fixed that the real origin may have ceased to exist without being missed. In this group syphilis plays its greatest rôle; and here also belong most of the senile and postparaplegic cases.

Let us put mental activity third in our list of causes, and we shall be surprised to find it covering such a multitude of factors, only a few examples of which need be mentioned. Remember how many cases begin in childhood at fright, and in youth from ill-advised or excessive work, disappointment in love or honors. This type is particularly liable to be confused with hysteria, nearly always so in the female; and the immediate cause is the suspension of higher control or the depression of vitality.

And giving the same causative effect as this will be our next group—physical overwork, insufficient food or lack of variety, continued illnesses, and like conditions.

It does not seem necessary to make other divisions, as every possible case can find its home in one of the four given above. Probably in every instance will be found more than one factor in the immediate etiology, the necessary strength of these factors to produce a convulsion being in inverse proportion to the peculiar developmental fitness of the brain cells. Because a drug may produce a convulsion in any individual is no argument that every one could become an epileptic, as the conditions are entirely different in kind.

Now by these statements of causes we are led to the question, "How should epilepsy be studied?" and the answer could only be, study each case as to its causes. And now let us comment briefly on a few indicative signs and symptoms.

Heredity of course plays its part by a prearrangement of the tissues. It is true that a fœtus may be epileptic, and to be so its cell development must be strongly inclined that way, together with an immediate aid, such as bad nutrition, an uncomfortable position, or an injury. On the other hand, the mother may be affected independently of the fœtus; but the child of an epileptic would stand less chance of passing through life untouched than would the offspring of a normal parent. That is likewise true of the child of an alcoholic or of a person in active tuberculosis or cancer.

After these prenatal and other histological factors are duly considered, we should observe closely the kind of aura or onset when it is sufficiently removed from the spasm to admit its being noted separately, and even in cases usually said to have no aura by close observation we shall find that there is generally some special sensation or act that precedes unconsciousness and the pronounced spasm. If this be referred to the gastric, cardiac, or encephalic regions, or vaguely to the skin, we most likely have to deal with poor nutrition and its accompanying disorders. Feelings of heat, cold, or muscular twitchings, visual and auditory disturbances, and subjective vertigo are peculiarly apt to go with bad nutrition.

While pain, itching, heat, or cold, referred habitually to some definite region, will most likely be indicative of an old trauma, remains of an old neuritis or perineuritis, or something allied, always note carefully for syphilis here.

Indications for causes within the third group will at once be seen to be the most indefinite and the hardest to utilize in making a diagnosis; but feelings of sudden fright, of vague, causeless fear, of depression or elation, would lead us in that direction. We ought here to have also the aid of an accurate history.

Flashes of light and objective vertigo would point to some cause within the fourth group; and here we generally have irritated stomachs, dilated, irregular, or irritable hearts.

The examination of every epileptic should include each point mentioned above, and special attention should be given to following out any indicative sign or symptom. By studying the seizure itself closely, we shall often find in it some peculiarity which will lead us to the real nidus of the spasm.

The pathology of epilepsy *per se* is as yet hidden from us; it is only when insanity or some other complication has set in that we find pathological con-

ditions gross enough for our comprehension by the means at present at our disposal. But that there is an organic difference in the brain cells cannot be seriously doubted. The seizures produce no change beyond exhaustion, and direct medication to prevent them must in the long run be futile. Only by modifying the conditions can we hope for success in the highest sense, but by the removal of the immediate causes we may prevent the seizures and cover most of the other symptoms; to outward appearance recovery has been achieved, and still the future is filled with pitfalls into which we may at any time blindly step, the seizures returning with renewed force.

As to the treatment, we defer consideration of that to some future season. In the mean time let us feel that the work of the neurologist in our time is so to improve the histological structure of the cells themselves as to make the epileptic condition an impossibility.

SUBJECTIVE THERAPEUTICS.

By W. P. HARTFORD, M.D.,

CASSVILLE, WIS.

Our duty, pleasure, and profit as regular physicians lie in curing our patients, and we should use any and every means at our command to attain that result. The brightest lights of the medical profession are at work discovering new remedies for disease, new surgical operations, and new uses for old remedies. But, in spite of all, there is still a class of patients who drift away to the quack, the mind cure, the Christian science cure, the Keely cure, or the hypnotist, and return cured. We say "Bosh!" "Humbug!" and "Hysterics!" But that does not convince the patient or deter him from sending a few of his acquaintances to the same cure. It would certainly be more profitable to us if we should investigate those cures and discover the underlying principle of them, turning it to our own use, instead of leaving it in the hands of the charlatans.

A careful analysis of all the methods that have been in vogue show the utmost divergence in everything except two points—faith on the part of the patient and suggestion on the part of the healer. Mind curers boast that faith is unnecessary. A close analysis, however, shows this boast to be in vain, for this mere assertion that faith is not needed would be the best method in many cases of causing the patient to think there might be something in it. Then a potent factor in awakening faith is seen in the practitioner who dispenses with all medicines and manipulations, and gravely assures the patient that he is not sick, never was sick, and never will be sick. Then there is a silence of fifteen or twenty minutes, during which time the patient watches the confident expression of the healer's countenance and wonders if there can be anything in this. "There must be. Lots of people have taken this treatment and are well. I believe it will help me." Then the words of the healer on departing are encouraging, and, the entire treatment being pleasant rather than otherwise, he longs for the next treatment. After a while he believes that he is better, and the stronger that belief becomes the better he feels, until finally he is well and goes forth a very active advertisement for the mind curer.

The Christian scientist proceeds in a slightly different manner. The association was organized by Mrs. Mary Baker Glover Eddy, who claims to be the great, only, and original metaphysical healer. She was cured of some mysterious malady in 1862 by a mesmerist, Mr. P. P. Quimby. Later, she says, she met with a terrible accident and received injuries which physicians pronounced fatal, but God in answer to her prayers healed her in a few hours. She organized the Christian Scientist Association in 1876, and a mind-healing church called the Church of Christ in 1879. She has written a number of pamphlets. The fees in the original Christian science college are $300 for the first twelve lessons, $200 for the next six lessons. Six lectures teach metaphysical obstetrics at the nominal price of $100, and to be a full-fledged Christian scientist the six lectures in theology and the Scriptures must be crammed into the already overflowing brain at an additional cost of $200. Several of her students have started colleges of their own, and have cut prices to such an extent that some of them agree to tell all they know for $25 and to throw in a diploma.

Mrs. Eddy has had a great deal of trouble with these impostors, but in the fundamental principles they agree with her, differing only in minor points. Her theory is: Nothing is real except the divine mind; matter is not real, therefore does not exist; it is impossible for disease to exist where there is nothing; therefore there is no disease. And, silly as this whole system is, she and her followers have cured hundreds of cases by the mere suggestion that there could be no disease present. An examination of the works of Mrs. Eddy, Evans, Grimke, Stuart, Arens, Tayler, Baldwin, Hazzard, Nickols, and Marsten will convince the most sceptical that their cures are accomplished entirely by suggestion.

Other cures owe their success to the same cause, but the suggestion may be made more or less striking, according to the mental peculiarities of the patient and by the most diverse methods. All, however, have the same end—that is, to suggest to the patient that the disease is about to be cured. Mesmer healed by stroking the affected parts with magnets, suggesting to the patient that the magnetism would so permeate their bodies that it would cure them. He practised this for ten years, when he learned that Gasner obtained the same results without the use of magnets. So Mesmer discarded magnets and claimed that the magnetism emanated from his own body in quantities sufficient to cure any disease. To give the utmost force to his suggestions, he had his consulting-apartment dimly lighted and hung with mirrors. Soft music broke the silence. The patients sat around a simmering vat of supposed magnetism. A wire carried the subtle fluid from the vat to each patient. Then, when they were sufficiently impressed, Mesmer, dressed as a magician, would enter and glide among them, making passes and suggesting that their diseases were passing away.

Joseph Smith, the founder of the Mormon church, cured his followers by prayer and the laying on of hands. All the priests and missionaries of that faith practise the same thing yet, as I know to my sorrow, they having captured several delightful old chronics that I thought I had for life.

The miraculous spring at Lourdes cures many each year. Prince Hohenlohe cured thousands. Many of his cases are as well authenticated as any facts in history. Gasner also cured by suggestion. Father Mathew's power did not die with him, for people are still cured by merely touching his tomb. In all parts of Europe are churches in which may be seen stacks of crutches, splints, and canes, thrown away by the happy souls who have been cured by the sight or touch of sacred relics. I know a man who makes a very comfortable income by magnetizing pieces of tissue paper. His patients tie them around the great toe, and they cure the rheumatism in that half of the body. Knock Chapel, in Ireland, has many cures to its credit. W. E. Boardman, in his establishment called the Nursery of Faith, in London, cured paralysis, rheumatism, consumption, and cancer by prayer and anointing the body with oil.

Hypnotism holds a place as a purely suggestive therapeutic agent, ridiculed by its enemies and lauded as

all-powerful by its friends, both of whom are laboring under delusions in regard to its efficacy.

Among the semimedical, semisuggestive cures may be mentioned some sanatoriums, quacks, patent medicines, and, last but not least, that ubiquitous individual who has a wonderful remedy that cured somebody that had just exactly the same symptoms. I do not wish to deny the fact that almost invariably the cures by suggestion have been exaggerated—the relapses and failures have not been reported. Many reported cures were not cures at all: for instance, the case of a boy with a broken arm, cured in twenty-four hours by prayer, on being investigated proved to have been a greenstick fracture that had been diagnosed and straightened by a physician. A man who had been walking on crutches six months threw away his crutches and walked away cured instantly by Schlatter. He had been under the care of a noted surgeon, who treated him for a fracture of the femur. The truth was, his leg had been perfectly well for months, but he imagined he could not bear his weight on it, until Schlatter suggested that he was well.

These cases were advertised as miraculous cures. In fact, people seem prone to magnify any cure that partakes of the suggestive. The regular physician or surgeon seldom receives more than a fraction of the praise bestowed on the charlatan. His cures are taken as a matter of course, and he can remove a tumor or cure a fever without eliciting any comment, when if the same results had followed a prayer or the laying on of hands or an hypnotic *seance*, it would have been deemed a miracle. Patients would flock to the healer. All who had implicit faith would be more or less relieved by the suggestions received, and go forth spreading the joyful tidings and recommending that particular method. Those who received no benefit would say nothing, or would deny they had been silly enough even to try such a humbug. The healer, if moderately sharp, would in a week treat more patients than the average physician would in a year, and the aggravating part of it is that the confirmed old hysterical grunter, who has made herself and all her neighbors believe she was at death's door with a mysterious malady that the doctors were all powerless to diagnose or relieve, is cured. We say we are glad to get rid of the hysterical old nightmare, but in reality we should be far better pleased had we cured her ourselves.

There is a class of cases that these humbugs cure by suggestions. It is a legitimate remedy, and has its limitations, which can be as well defined as those of any other remedy. I can assert without fear of successful contradiction that the involuntary acts of the body can be influenced by the mind—that the mind has an effect on the action of all the organs supplied by the sympathetic nerves. The emotions, joy, fear, etc., can accelerate or retard the action of the heart, lungs, stomach, etc. The emotion fear has caused instant death. Sorrow has killed many. Joy has a beneficial effect. All the emotions play an important part in controlling bodily functions. Hudson claims that man has two mental organizations—an objective mind that reasons, and a subjective mind that is controlled entirely by suggestion. It is the seat of the emotions, cannot reason inductively, and has complete control of all the purely vegetative functions; it believes every suggestion not positively contradicted by the objective mind. Allowing this theory to be true, all cases of suggestive healing are easily explained. The subjective mind receives the suggestion, and, not being able to reason inductively, believes it and at once proceeds to cure the disease.

Faith is really nothing more than auto-suggestion. Faith and suggestion play a very important part in the practice of the regular practitioner. The patient thinks the doctor can help him; he believes the treatment will be beneficial; and the stronger his faith is, the more good the treatment will do him. Many of our most progressive physicians are advocating the use of fewer drugs and more suggestion. All of us have seen cures that the treatment would not account for, but that the theory of the subjective mind and suggestion will explain. In fact, we can by that hypothesis analyze the mind of any one, foretell what he will be liable to do under any combination of circumstances, whether we can better control him by reason or suggestion, whether he needs drugs or advice, or both.

A person with the objective mind in preponderance will be cool and calculating, will believe nothing he cannot reason out. Explain his disease to him, explain the action of the drugs, give him a complete diagnosis and prognosis, and prove both to him in the strongest manner possible. His reason dominates his soul—or, in other words, his objective mind controls his subjective mind—and it will receive nothing but auto-suggestions.

At the other extreme is the person with the subjective mind in control. This person will be emotional, poetical, musical, and religious; will believe anything reasonable and almost everything unreasonable. Say little about the disease, but a great deal of the wonderful efficacy of the treatment. Take great interest in the case, ask a great many questions, look as wise as an owl and as sympathetic as you can, but by all means impress upon her the belief that you understand her case thoroughly. There are a few to whom you may explain the action of the mind and let them help themselves by auto-suggestion. Many of us fail to comprehend what a powerful ally we have in the subjective minds of our patients, and what an important part suggestion plays in the cure of disease. When our patients come to know that we understand the underlying scientific principles governing these cures and are able to use the same means supplemented by the proper medical treatment, a hard blow will be struck which will cripple the faith healers; and if we, with our powers of diagnosis and mental analysis, our knowledge of drugs, our ability to select the proper cases for suggestion, cannot far surpass any of the army of healers, I am very much mistaken. None of them, so far as I can learn, has the slightest idea of the manner in which their suggestions act on the body. They are unable to diagnose or select their cases. Each has his or her pet method of suggestion, and, hit or miss, hysteria or cholera morbus, old or young, male or female, all have to take the same thing. Of course the failures are many, the real cures few; but they are as successful as we would be were we to confine ourselves to a single drug for all cases; and it is a fact that cannot be refuted that, however different their methods are, they all agree in one thing and one only—that is, suggestion. Lack of space has prevented me from presenting arguments and illustrations to prove the various assertions I have made, but I hope they are so self-evident as to require no such arguments.

But most psychological subjects, if carried far enough, enter the domain of the unprovable, and this one is no exception, although I think the following assertions are as near proved as is the action of any of the remedies we make use of, and if allowed to be true explain many points that have heretofore been deemed undemonstrable. No one who has ever had a dream or participated in a hypnotic *séance* but will admit that we still possess a mental organization when the reasoning faculties are in abeyance. Let us, for lack of better terms, call the reasoning faculties the objective mind, and the mind that is amenable to suggestions the subjective mind. Let us admit that the subjective mind has more or less control of the bodily functions.

The London Society for Psychological Research, in a carefully conducted series of over three thousand experiments, has proved beyond a doubt that it is possible for one person to communicate thoughts and emotions to another by what is termed mental telepathy, and, as this can be done most successfully in the hypnotic state, it stands to reason that the subjective mind receives the message. Allowing these theories to be tenable, we have a clear explanation of the occasional success of "absent treatments." Again, if the subjective mind or soul is a part of the great Supreme Intelligence, a part of Deity, and returned to Him at the death of the body, it is possible that our subjective mind may receive suggestions from that source, and thus disease be cured directly by divine interposition. From our earliest childhood we are taught that our principal duty is to prolong life, that health is a blessing to be sought for by all means. The subjective mind, under this battery of suggestions from all sources, naturally tries to keep the bodily functions up to par, and I think this theory may explain why the tendency of all disease is toward recovery. When reason decides that life is not worth living and conveys this idea to the subjective mind by auto-suggestion, death will often ensue. The homesick soldier or sailor will die of injuries that would be recovered from at home. The death rate of a defeated and discouraged army is always great. The young girl disappointed in love and the bankrupt business man are invariably in poor health. Take two men identically the same physically, give them precisely the same food and hygienic surroundings, let one be happy and contented and the other prostrated with trouble, and it requires no prophet to tell which one will live longest. The theory that the subjective mind controls the bodily functions and is itself controlled entirely by suggestion, explains all these hitherto unexplained problems. It is the true theory, but, like all new ideas, it is destined to run the gantlet of adverse criticism.

It has been suggested to us in every way from our earliest recollections that the soul is a mysterious something that cannot be reasoned about, and it strikes one as something bordering on sacrilege to be told that it can be analyzed, its powers and functions described. Any one will admit he has reasoning faculties, that it is possible for him to become insane or demented and lose the power of reasoning inductively. Nearly every one will admit that he has a soul, and that the idiot that cannot reason has a soul, but when we tell them there are an objective and a subjective mind they call us cranks; but this hypothesis has been proved true. It solves every psychological problem that can be brought up, but, as with all great discoveries, it will be years before it is generally accepted. In the mean time I see no good reason why we should allow the army of irregulars to carry away the best part of our business. If a patient once knows that the miracle cure is no miracle, that we not only understand the miracle but the scientific reason for it, we have saved him, pocketbook and all. We are supposed to temper the wind to the shorn lamb, but we can better afford to do so if we have a hand in the shearing.

Chronic Intestinal Obstruction.—There may be an acute appearance. This late-coming acuteness may be mistaken for an early acuteness, and the fact that the mischief is probably in the large intestine may thus be overlooked.—Jacobson.

Appendicitis.—I will give it as my conclusion that the safest plan of management of all cases of appendicitis, take them as they come, is the immediate removal of the appendix and the drainage of the infected cavities.—Bernays.

WHEN LANCET WAS KING AND CALOMEL PRIME MINISTER.[1]

By James Weir, Jr., M.D.,
Owensboro, Ky.

Mr. Smith returned to Smithville by water from Cincinnati on Saturday, the 3d of May. I saw him on Sunday morning and observed to him, I think, that he looked more fleshy and in better health than I had ever seen him. He informed me that he had been very much exposed, on the ride up, to bad weather, it having rained on him every day for a week, and that he had suffered a good deal of fatigue from a very indifferent riding-horse, but that, nevertheless, he felt pretty well except for a rheumatic affection of one of his knees, which I observed to stiffen his walk some little.

On Monday (the 12th) in passing his store he called me in, and complained of some headache, which he said was an unusual thing with him, and proposed bleeding for it. Knowing his partiality to the lancet in all cases, and not conceiving that the state of his pulse particularly required it, I suggested to him the use of a purgative. This he assented to and took a tablespoonful of Epsom salts. As well as I can recollect, upon inquiring into the state of his knee he informed me that he had the day before applied the essence of mustard freely, and that his knee was better, the swelling having already entirely subsided.

On Tuesday (13th) he sent a message to my house, desiring me in returning to my shop after dinner to call on him. I did so, when he informed me that the salts had operated freely, that his head was easier but still somewhat pained, but that he felt generally more unwell. Upon feeling his pulse there was evidently an increase in its force and frequency; and I then suggested to him the propriety of bleeding, to which he readily assented, and twelve or sixteen ounces of blood was taken. He was directed to make use of a warm bath to his feet and legs, and to drink freely on going to bed of some warm herb tea.

On the next day (Wednesday, the 14th) he told me that he had rested pretty well through the night, that the bath and tea had succeeded in producing a free perspiration, and that he thought he had no fever through the night. His pulse, however, when I saw him this day was feverish and I prescribed a dose of calomel at night; he took twenty grains.

Thursday (the 15th) I visited him and was informed that the calomel had operated freely, having produced considerable nausea at the stomach. In the evening there was considerable increase of fever and he was again bled, to the extent, I suppose, of nearly a pint.

Friday (16th), some feverish state still remaining, he was directed to use freely the cream of tartar, to drink through the day, to observe light diet, etc.

Saturday (the 17th) he was up (having, indeed, never been confined to his bed) and at his store nearly all day, and thought himself much better. He called on me in the shop in the evening, and, upon feeling his pulse, I found them a good deal increased in frequency from his exercise, beating near 100 in the minute. His tongue was also somewhat furred. I thought it best he should take more calomel, and fifteen grains were presented, to be taken at bedtime.

Sunday (18th) he professed to feel better, but the calomel not having operated to his satisfaction, he took in the morning a dose of Epsom salts, by which his bowels were freely opened. He walked about his house and lot the greater part of the day, and eat some, perhaps a saucer full, of strawberries and drank a little buttermilk.

[1] This "report of a case and its treatment" was taken *verbatim et literatim* (names only being substituted) from the notes of a celebrated physician who died some ninety years ago.

Monday (19th) I saw him quite early in the morning, when, for the first time, he showed me a small inflamed spot on his foot, which he said had been considerably painful through the night; that he had been feverish and had not slept well. He complained also of some uneasiness in the joint of the larger toe of the affected foot. His pulse when I visited him in the morning was beating somewhat upward of 90 in the minute, and was full and strong. I bled him again to the extent of about twelve ounces, when I discovered a manifest reduction in the frequency of the pulse, having fallen to about 64 in the minute. Before I left the house, however, I discovered a disposition in it to rise again, and with the wish of keeping down the fever I prescribed the ordinary cooling antimonial powder, one of which he took at 8 A.M., and another at 11 A.M. About 1 P.M. I was sent for and found him laboring under considerable pain of the bowels, and was told it had been the case for an hour, during which time he had had three or four brisk operations on them. I immediately gave him thirty drops of laudanum with ten of peppermint essence, and repeated nearly the like quantity in half an hour, shortly after which, by the aid of hot applications locally, he became easy. I left him about four o'clock in the afternoon, as I, having occasion to go into the country, did not see him again until nine o'clock, and was then told that the pain had returned shortly after I went away, which was again relieved by the means before used. While I remained with him he continued easy and I left him at ten, with the prospects of his spending a good night from the sleepiness which the laudanum had already produced. Little did I anticipate the dreadful nights and still more dreadful days which awaited him! I was to see him in a short time, and found him in agony so great as to force from him the exclamation, "Doctor, I shall die!" The pain in his bowels, about the navel, had returned with increasing violence, and extended occasionally to the privates. There was, however, at the time no tumefaction whatever. I requested the aid of Dr. Hunter in consultation, who came over immediately, and we determined upon evacuating his bowels freely as the most immediate promise of relief. We commenced giving him large draughts of castor oil, purgative glyster, and put him in the warm baths. And here I may observe that the first alarming symptom which showed itself to me was the insensibility of his lower bowels to the stimulus of the injections. Nevertheless, we were in no apprehension, but that the means then in use, if persisted in, would ultimately relieve him. Under this idea Dr. H. went home and I remained with him. He became somewhat easier after the first bath and fell into a slight doze, from which, however, he was soon aroused by a return of pain; for which the bath was again used, the oil in large doses repeated, and the glyster again resorted to, nothing, however, making any impression on his bowels in the way of evacuations.

It is needless to go through the long details of repeated and increasing sufferings. Suffice it to say, that between nine o'clock at night and the ensuing morning he had swallowed four large portions of castor oil, two ounces of Epsom salts, and sixty grains of calomel, besides the exhibitions of innumerable glysters of different sorts, and the almost constant use of the bath, sometimes warm and then almost hot. These means having entirely failed in producing the wished-for evacuations, and the pains continuing to increase, while his strength was gradually failing, I sent for Dr. Hunter again and was anxious to avail ourselves of further aid by calling in the assistance of Drs. Abernethy and Harvey, but I regret exceedingly that neither of these latter gentlemen were in town. Dr. Hunter came about sunrise, at which time our patient's sufferings were at their highest pitch of agony; his system was sinking under their influence and his own fatigue in rising so frequently to the bath. We at once determined it inadvisable to persist longer in the attempt to open his bowels, but to endeavor immediately to lull his sufferings and recruit his exhausted system. With this view, opium in large quantities and in quick succession was administered. Hot brandy toddy with peppermint and hartshorn, and without them, was exhibited liberally; mustard poultices applied to his abdomen and to his extremities, and shortly afterward a large blister to his bowels—but all in vain! His pulse continued to decline, his strength went with it, his extremities grew cold, his breathing became short and difficult, and his end was obviously fast approaching. He retained his senses without the slightest interruption until a half-hour before he died, frequently inquiring if nothing more could be done, and apparently fully conscious of his approaching dissolution, which took place about nine o'clock on Tuesday morning, after twelve hours of indescribable agony, such as I have rarely witnessed.

Progress of Medical Science.

Children's Foods. — The effects of foods upon infants has been investigated by Russow in Oldenburg Hospital. Some infants were nourished exclusively at the breast and others were given a mixed diet. At the end of fifteen days the average weight of the first class was 3,564 grams and of the last class 3,255 grams. At the end of the year the infants nourished exclusively at the breast weighed on the average 9,930 grams, and those on a mixed diet 8,480 grams, showing a difference of weight of 1,450 grams. The breast-nourished infants increased 150.7 per cent. of their weight at fifteen days, and those of the mixed diet, 140.7 per cent. Camerer shows that in the middle of the year breast-fed children were heavier, but concludes that whatever the nourishment during the first year, nevertheless all children at the end of the year reach about the same weight. Camerer gives about fifty individual cases, tabulating weights by weeks, and there is no evidence of the effects of differences of food, judging from the compared results at the end of the first year. If anything the results favor artificial foods, at any rate so far as their weight-giving properties are concerned. —*American Journal of Psychology.*

Parasites of Malarial Fever.—Dr. Ziemann (*Centralblatt für Bakteriologie*, Abth. i., Bd. xx., Nos. 18, 19) gives the results of his observations on the blood of fourteen persons suffering from agues of home origin and of seventy with acute and fifteen with latent forms of tropical remittents contracted in the Cameroons. The details of the growth of the amœboid forms appearing in the red blood corpuscles at the commencement of the hot stage, undergoing pigmentation and nucleolation, and finally, toward the end of the cold stage, sporulation by fission into two or ten or even sixteen separated nucleated cells or resting spores, is clear and interesting. He could neither verify nor refute, though he was inclined to doubt, Golgi's statement that tertian and quartan agues were marked by different forms of the parasite, nor Mannaberg's as to the quotidian and tertian; for his German cases were tertian only, and his African quotidian or irregular. He recognized two only—a larger in the European cases, and a smaller in the tropical; this was mostly ring shaped, and underwent subsequent development in two directions—either (*a*) sporulation as the European, or (*b*) into a large endoglobular cell, spherical, semilunar, or with handle-like protuberances.

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THE ARMY AND THE QUARANTINE.

IT is quite evident, in view of the imminent danger of yellow fever entering our ports by the government transports from Santiago and elsewhere, that our quarantine regulations should be most rigidly enforced. We have had several scares already, and the fears of the public have been allayed only by the prompt and energetic efforts of the health authorities at the different ports of entry. The laxity of precautionary measures at the front and lack of forethought in selecting safe and proper transportation have been lamentably manifested in the deplorably filthy condition of the *Seneca*, which arrived a few days ago in New York. It would have been thought to be impossible that such a state of affairs could exist, save that the shameful demonstration to the contrary was so clearly made. Such a disgraceful object lesson cannot be studied too thoroughly to awaken us to the possibility of its repetition, especially in such times as these, when danger from a waiting pestilence threatens us almost daily from infected quarters. The medical department of the army has often asserted, with becoming pride, that it was abundantly able to care for the sanitary condition of our troops; but what excuse can now be offered for the *Seneca*, crowded with sick and wounded, without adequate surgical attendance and without suitable medical supplies? That this should be possible under such apparently well-organized supervision gives a new cause for alarm, which is as reasonable as it was unexpected. Either the department in question is too much hampered by restrictions in the performance of its bounden duties, or else it is incompetent rightly to comprehend the real gravity of the situation.

In any event, suspending judgment while the attempt is being made to fix the blame of neglect where it should rightly belong, it is quite plain that the present methods of organization are by no means what they should be, and the authorities who are thus responsible for the proceeding cannot claim that confidence from the public which otherwise they would have enjoyed. Official etiquette and red tape may hinder the prompt performance of obvious duty, but the public looks at the result and judges accordingly.

Fortunately in the present dilemma we need not look to the army department alone for guarantees of safety. The Marine Hospital service has been and is doing splendid work in all the ports where it has jurisdiction. It has demonstrated its right to be and to do on many former occasions, but on none more clearly than on the present one. We have every belief that Surgeon-General Wyman will rise to his opportunities and prove more directly than ever before the real necessity of a national quarantine law which, by its breadth, strength, and general effectiveness can give the greatest possible safety to the largest districts of country.

THE WOUNDED AFTER SIBONEY.

A DETAILED description of the care of the wounded after the battle of Siboney, as given in a recent issue of *The Sun*, casts some very severe reflections on the war department for its shameful neglect of duty in preparing for and in meeting the emergencies of the hour. If the report is true, and there seems to be no good reasons for doubting it, the army medical department appears in a very unenviable light. It is said that there was a total lack of everything necessary for the proper care of the stricken soldiers. Why this was so it is hard to explain, especially in view of the fact that the war department has constantly declared, in declining voluntary assistance from charitable organizations, that it was abundantly able to cope with any possible emergency in the field. And yet this is the result:

"When the wounded came in, the needs of the hour were overwhelming. The situation cannot be described. Thousands of our men had been hurried to the front to fight. It was well understood that it would be a hard fight. The dead would need only burial, but the wounded would need care. And yet, with the exception of a few stretchers, no preparation had been made—neither cots nor food, and practically no bandages for wounds. Is it strange that surgeons were desperate and nurses distressed?"

Farther on the correspondent says: "It was evident that the medical department of the army had failed absolutely to send hospital supplies, or by this time they would have been landed. On the one hand, it was pitiful. On the other, it was negligence that could have been the result only of incompetence."

The boasted hospital facilities are thus described: "The wounded were carried back from the fighting-lines on stretchers, and laid on the ground to wait until the surgeons could reach them. Many were soon beyond the need of surgical treatment. There were four divisions of the army, and each division was supposed to have its hospital. But as a matter of fact there was but one, the first division hospital of the fifth army corps, under Colonel Wood. There were five surgeons, a hospital steward, and twenty assistants, to care for the wounded—several hundred. They had a number of operating-tables, a small supply of medicines, but few bandages and no food for sick or wounded men. It was comparatively easy to get supplies from the *State of Texas* ashore to the hospital here—but there was no transportation to get them to the front."

Fortunately for the poor men, there was sufficient of

outside aid from the Red Cross and its supplies to balance neglect of preparation in other quarters. Said one of the medical officers, in the desperation of his helplessness: "God knows what we should have done here without the help of the Red Cross—your ship, your surgeons, and your nurses. And there is no other help for us at the front. Our wounded up there must have food, bandages, anything you can let us have in the line of hospital supplies."

It is right and proper that the surgeon-general should resent any interference with his prerogatives, but he should not directly invite it by making possible such a condition of affairs as here described.

ULCERS OF THE DUODENUM.

The occurrence of duodenal ulceration from certain causes has long been recognized, and the fact that we may have in the duodenum ulceration of the same kind as the so-called peptic ulcers in the stomach is well known. The behavior of these ulcerations is a matter of great interest and importance in abdominal surgery. A Russian surgeon, Dr. Wanach, in a communication to the *Archiv fur klinische Chirurgie*, vol. lvi., No. 2, gives a review of the cases reported by various surgeons, and also an interesting account of a successful operation by himself.

We are struck by the fact that in no case in which an operation was done was the diagnosis made as to the site of the perforation for the symptoms of which the operation was undertaken. The diagnosis of peritonitis from perforation is of course simple enough, but to locate the perforation before operation is another matter. In many of the recorded cases the diagnosis was made of perforation of the vermiform appendix, and the error is quite comprehensible. It seems to be a pretty uniform symptom to have the pain, at the time when the perforation occurs, referred to the right side and usually high up, though the localization may be in the umbilical region, and thus, if there is much distention, leave us in grave doubt. If the pain is on the right side, we shall almost certainly discover tenderness there also, and the region is near enough to that of the appendix to justify us in supposing that that structure is responsible for the symptoms, because we know what a large proportion of cases of perforative peritonitis do have their origin in it. The patient in the early stage of an acute peritonitis is usually in too anxious a condition to help us in this matter of localizing the pain.

There is one sign of differential diagnosis between appendicitis and perforation from some other cause which we do not commonly see mentioned, and that is that pressure over the inflamed appendix will elicit tenderness in that region and pain referred to the epigastrium. This is not always noted, but in some cases it might be of service in enabling us to decide upon the diagnosis. This sign would not be present in gastric or duodenal perforation. We might have the epigastric pain, but not the tenderness on pressure in the iliac fossa. Unless we see the cases early enough to have our attention drawn definitely to the right side of the abdomen, we must proceed in our operative work upon general principles, if we are to operate with any prospect of success.

Perhaps the most important aid that we can get will come from a very careful clinical history both of the onset and course of the acute trouble and of any disorder of the stomach or intestines in the previous history of the patient. We may get a history pointing toward gastric ulcer, and if an operation is done upon any of these cases we should, in the natural order of things, look for a perforation of the stomach before examining the deeper parts to find a suspected duodenal perforation. The surgeon ought to get valuable aid from the physician in this class of cases, for it is upon the latter that we must depend for our accurate histories and intelligent observation during any previous illness that the patient may have had.

The cases of ulcer of the duodenum so far seen are pretty uniform in their characteristics, and the condition described by those who have seen such cases operated upon for perforation has been that of an indurated thickened area, with a perforation of variable size, but usually round, in the centre of the area, and the site of the perforation has been very commonly at or near the apex of the curvature of the second portion of the duodenum, at a point at which the gastric contents have not lost their acid digestive power by becoming mixed with the bile and pancreatic secretion.

The question of what to do with the perforation, when we have found it, is not so simple as it might seem. If we merely invert the edges by the usual method of intestinal suture, we run the risk of suturing through soft necrotic tissue with the consequent danger of infection and giving way of the sutures; and if we attempt to excise the whole ulcer we are apt to encounter great difficulty in placing our sutures and getting apposition, on account of the depth at which we are working. Of course, if the ulcer has perforated the intestinal wall at a part not covered by peritoneum, a retroperitoneal abscess is promptly developed, and the directions in which such an affair can travel are limited only by the patient's ability to stand the inroads upon his vitality and the involvement of other organs.

In one of the reported cases in which it was not possible to reach the perforation so as to suture it, the operator simply sewed the neighboring omentum, stomach, and intestine together over the location of the perforation, and the patient recovered. Most surgeons, however, would adopt such a measure only as one fraught with great risk, and would probably prefer to trust to a drainage tube and packing for the first part of the treatment.

It has been the universal experience that it is better to treat the abdominal wound in these cases by packing and drainage, chiefly on account of the infected condition of the whole abdominal cavity by the time the operation is done, and the greater security which such a method gives when we are dealing with tissue of such dubious vitality as that in the edge of an intestinal perforation. The question of irrigation is to be decided upon the same general principles which govern all abdominal work.

The whole subject of the surgical treatment of such ulceration is only in its infancy, and every carefully recorded observation helps to add to our knowledge of a necessarily obscure condition. We must hope that by careful observation of such cases by the surgeon and by careful investigation by the pathologist, we may in the future be able to recognize the condition present with sufficient promptness to render important aid in an increasing proportion of cases at best very grave.

MOSQUITOES AND MALARIA.

The theory that certain diseases may be conveyed by means of insects is not a new one. Linnæus was among the first to make the suggestion, although his views in this respect gained no foothold. Dr. Drake and Sir Henry Holland also drew attention to its probability. Latterly many investigators have endeavored to show that the mosquito is indirectly instrumental in the production of many diseases, and especially in that of malaria. Dr. Charles Finlay, of Havana, in 1881 submitted some papers to L'Académie Royale des Sciences Médicales in Belgium, tending to prove that the mosquito under certain conditions may act as the transmittor of yellow fever, and has repeatedly since that time written in support of this belief.

Quite recently Dr. Patrick Manson, who for many years has held the belief that the mosquito may "act as the intermediary host of filaria sanguinis hominis," has stated his opinion that the mosquito plays the part of the extracorporeal host of the plasmodium malariæ. Koch, who has just returned from East Africa, where he has been studying the clinical and etiological aspects of malaria under peculiarly favorable circumstances, is in agreement with these views. He bases this agreement on the ground that mosquitoes are always prevalent wherever malaria prevails, and he mentions one locality in which, mosquitoes being absent, there is no malaria, although the conditions are otherwise favorable to its production. Bignami last year published a paper in which almost identical conclusions were drawn. Referring to the observations of Smith and Kilborne, he drew attention to an example of a disease of the blood due to an intracorpuscular parasite and inoculated into cattle by a suctorial insect, and went on to say: "Malaria behaves itself with regard to man as if the malarial germs were inoculated by mosquitoes." As long ago as 1893 Marchiafava repeatedly asserted in private his belief in this mode of transmission of malaria, but he did not publish this view, as what he regarded as a positive demonstration was wanting. Now, however, the contention that the malarial poison is disseminated by the mosquito is supported by facts which are practically as convincing as those which can be adduced in favor of any other theory as to its cause. The question as to how the fever is contracted is a most important one, for once it is solved the way will be paved for a rational prophylaxis of malaria.

THE "SENECA" CASE.

If the daily papers are to be believed, there would appear to be a disposition on the part of the army medical authorities to shift the responsibility of the *Seneca* scandal on to the two acting assistant surgeons who were assigned to the ship to care for the wounded. It is given out, as though that fact completely relieved the military authorities of all blame, that these young men were not regular army surgeons, but only "contract doctors"—civilians hired by the month to take care of the soldiers. But it may be asked why these doctors were hired by the medical department if they were incompetent, and also why the lives of so many people were intrusted to their keeping; and again, if they were so inexperienced, why some one did not inspect the vessel and the stores to see if everything was as it should be. The responsible persons cannot be exculpated by sneers at civilians, and we cannot believe that the surgeon-general will allow himself to be turned from his avowed purpose to fix the responsibility by any such puerile excuses. Some one who was in authority at Siboney when the wounded were transferred to the *Seneca* from the *Relief* is responsible for this wretched affair. The two acting assistant surgeons may have been and probably were inexperienced, but inexperience is no crime; the crime is rather in intrusting vital matters to inexperienced persons. The "contract doctors" are certainly not to blame for the *Seneca* scandal.

News of the Week.

The Medical Club of Berlin.—We have received a courteous communication from the "Aerztlicher Club von Berlin," informing us that foreign physicians are granted free admission to the clubrooms. Physicians from abroad, resident for a certain period in Berlin, will be welcomed as temporary members upon introduction by a regular member. The club is in the Lindengallerie, Berlin, W.

Alfonso XIII., the little King of Spain, in addition to his other troubles, is now suffering from an attack of measles.

The Governor of Santiago a Physician.—Gen. Leonard Wood, formerly colonel of the Rough Riders, has been appointed military governor of Santiago. The appointment must be regarded as a peculiarly happy one, for one of the first problems that confront us is the sanitation of the city, and General Wood's medical training and experience will enable him to supervise this work with intelligence and good effect.

Abandonment of Camp Alger.—There is some discussion concerning the advisability of abandoning Camp Alger because of the pollution of its water supply. Typhoid and malarial fevers have prevailed in the camp from the date of its establishment, and, indeed, prevailed in the country thereabout for years before the site was selected. This and the fact that the water supply is wholly inadequate lead naturally to a query as to why the camp was ever established at that point.

Death of a Centenarian.—Mr. Elijah Glenn died a few days ago, in Newark, N. J., within a few days of his one hundred and second birthday. He was born in Maryland, August 7, 1796.

The Yellow Fever.—The latest reports from Santiago show no change in the situation there as regards the yellow fever. Despite the filthy condition of the streets, there is but little fever within the city. The new governor, Gen. Leonard Wood, may be depended upon to do everything possible in the way of cleaning the city, and it is believed that a widespread epidemic among the troops may be averted. The type of the disease continues mild, the mortality being very light. Out of 1,000 cases of yellow, malarial, and typhoid fevers and measles reported up to July 25th, there were only three deaths, according to the Siboney correspondent of *The Sun*. Dr. Lesser, of the Red Cross Society, and the four nurses of his staff have recovered. There is no case of the disease in this country, so far as known at the present writing. An epidemic is reported from Merida and other coast towns in Yucatan, brought probably from Cuba by the blockade runners.

Food for the Klondike.—It is reported that a food shortage in the Klondike next winter is greatly feared by those conversant with the conditions in that region. There are many people there without work and without money, and it will be necessary to furnish them with transportation southward this summer or to feed them next winter.

Firing on the Wounded.—Mrs. John Addison Porter, wife of the secretary to the President, who is with the Red Cross at Santiago, has written to her husband a letter describing the events before the surrender, extracts from which have been made public. She confirms the stories of Spanish barbarity in firing on the wounded, and says that in several instances wounded men were shot dead as they lay in Red Cross litters on their way to hospitals. This firing was so continuous that the surgeons performed operations by moonlight, being afraid to light candles or lanterns, as Spanish sharpshooters would have picked them off.

Typhoid Fever is spreading in the Florida camps. The number of cases is not known definitely, but it has become so large that the army medical authorities have found it necessary to accept the services of Red Cross nurses, which were at first refused.

Soldiers' Convalescent Homes.—It is stated in *The Hospital* that the Italian government provides six convalescent homes for sick soldiers. The soldiers are said to be admirably housed in these homes, treated extremely well, and the homes are generally on royal property and in some cases consist of royal palaces. In addition to such convalescent homes for the private soldier—entirely maintained by the government—officers and non-commissioned officers are sent to various baths and medicinal springs in Italy at their country's expense, when their condition calls for such treatment. There is a movement in England for the establishment of soldiers' convalescent homes and also homes for dying soldiers, but the project has hardly gone yet beyond the stage of agitation.

A Hospital Cotton Bale.—The first bale of cotton of the crop of 1898 was sent by H. and B. Beer, of New Orleans, to President McKinley as a contribution to the United States hospital fund. The President forwarded it to Lieutenant-Colonel Kimball, of the quartermaster's department, at the army building in this city, with instructions to have the Cotton Exchange take charge of its disposal. It was sold at auction to the president of the exchange for $500, which sum had been raised by the brokers for this purpose, and the purchasers sent it back with a check for $500 to Lieutenant-Colonel Kimball, that it might be again sold. It is thought that the bale, like a similar bale during the civil war, may now start on a tour of the principal commercial exchanges of the country. It is likely to be sent next to the Boston Chamber of Commerce. The cotton, at this sale, brought about $1 a pound.

The Mississippi Valley Medical Association.—The twenty-fourth annual meeting of this association will be held at Nashville, Tenn., October 11th–14th, under the presidency of Dr. John Young Brown, of St. Louis, Mo. The annual addresses will be made by Dr. James T. Whittaker, of Cincinnati, on medicine; and by Dr. George Ben Johnson, of Richmond, Va., on surgery. Dr. Duncan Eve, of Nashville, is chairman of the committee of arrangements. Titles of papers to be read at the meeting should be sent to the secretary, Dr. Henry E. Tuley, 111 West Kentucky Street, Louisville, Ky., as early as possible to insure a good place upon the programme. Reduced rates on all railroads will be granted on the certificate plan.

Dr. Fenton B. Turck, of Chicago, writes that he has been invited to give a demonstration before the forthcoming meeting of the British Medical Association of his methods of diagnosis, treatment, and experimental work in diseases of the stomach and intestines. He will also read papers by invitation as follows: "A New Method of Treatment of Gastric Myasthenia," and "A New Operation for Gastrostomy and Curettage for Carcinoma of the Cardia."

The Cumberland County (N. J.) Medical Society convened at Hotel Cumberland, Bridgeton, July 12, 1898. The meeting was called to order by Vice-President Dr. J. B. Ware, of Bridgeton. A paper on "Nephritis in Children" was read by Dr. T. G. Davis, of Bridgeton. Dr. H. W. Elmer reported as delegate to the American Medical Association. Dr. L. L. Hand, of Leesburgh, presented an exhaustive report of the meeting of the State Medical Society.

Dr. John Carling, of this city, has sailed on the *Olivette* for Santiago, with orders to report to General Shafter. He will probably be assigned to duty in the yellow-fever camp.

A Prize for Clean Teeth.—A man in Maine, it is said, has offered a number of small prizes to the school children in his town who take the best care of their teeth during the summer vacation.

Poor Santiago!—Spanish rule of Cuba was notoriously bad, but it had at least one redeeming feature. Among the many articles, the importation of which into the island was prohibited by law, were medical preparations of unknown composition. Under American rule this prohibition has been annulled, and now the natives will enjoy the opportunity for unlimited indulgence in the liver ticklers, vegetable compounds, pile remedies, and other delectable nostrums that are swallowed in such generous quantities by the people of this free land.

"The Women's Medical Journal."—In the recent failure of the Recorder Publishing Company of Toledo, Ohio, the *Women's Medical Journal* was included in the assets, and was bought in and will be operated by Miss M. L. Hockedern and others. The present editorial staff, it is understood, will retire.

The German Otological Society held its annual meeting in Würzburg, under the presidency of Professor Bezold, of Munich, on May 31st, and June 1st and 2d. The meeting was attended by eighty-five otologists, of whom six were Japanese. It was voted to erect a memorial to Professor von Tröltsch, who taught in the University of Würzburg from 1864 till his death in 1890. The next annual meeting will be held in Hamburg.

The Health of New York State. — According to the bulletin of the State board of health, just issued, the daily average mortality during the month of June was 288, which is 6 below the daily average of that month for the past ten years. The death rate was 16 per 1,000. Compared with June of last year, the deaths were fewer in every one of the sanitary districts, the decrease being mainly in the infant mortality, although there were also fewer deaths from zymotic and acute respiratory diseases among adults. Diarrhœal diseases caused 375 deaths, which is only half the usual mortality for June. Diphtheria caused 175 deaths, or one-half the number for June, 1897. Whooping-cough caused 111 deaths, double that of last June. Cerebro-spinal meningitis is also very much more prevalent than a year ago, 110 deaths being reported from it, the increase being mainly in the maritime district. The number of deaths from tuberculosis was nearly the same as in June of last year, namely, about 1,000, but it was 120 less than the figures for May.

The University of Odessa.—A medical faculty is about to be constituted in the University of Odessa, and will be formally opened next autumn. Dr. Podvysovski, of the University of Kieff, and editor of the *Russkii Arkhiv*, has been called to the chair of pathology in the new faculty, of which he has also been appointed dean.

Leprosy on the Baltic.—The publication of the official report concerning the prevalence of leprosy in the province of Memel threatens to ruin the business of hotel keepers at the seaside resorts on the shores of the Baltic Sea. The authorities at these places are making strenuous efforts to convince the public that no leper ever saw the waters of this pleasant sea.

The Tri-County Medical Society of Ford, Iroquois, and Vermilion counties (Ill.) held its annual meeting at Paxton on July 6th. Twenty-six members were in attendance. The annual election resulted in the choice of Dr. J. Y. Campbell, of Paxton, *President;* Dr. R. Hemala, of Onarga, *Vice-President;* and Dr. Leroy Jones, of Hoopeston, *Secretary and Treasurer.* Papers were read by Drs. Wylie, Mason, McClintock, Peirce, Strauss, and Lovell.

A Woman Druggist.—A young woman of Keyport, N. J., recently took the written examination before the State board of pharmacy for a certificate permitting her to practise as a registered druggist and pharmacist in New Jersey. If successful, she will be the first woman pharmacist in the State. Forty-four men came up for examination at the same time.

Dr. J. J. Ulloa, of San José de Costa Rica, has come to this city in the capacity of consul-general of Costa Rica. He was recently secretary of state of that country. Dr. Ulloa was graduated in medicine from a New York school about twenty years ago, and served the regular term as interne at St. Vincent's Hospital.

Death of Professor Rokitansky.—Dr. Karal Freiherr von Rokitansky, a son of the great pathologist, died at Gratz, on June 20th, at the age of fifty-eight years. He was born in Vienna, and received his medical degree from the university there in 1865. He became privat-docent in midwifery and gynæcology at the University of Vienna in 1872, and extraordinary professor of gynæcology at the same university in 1880. In 1892 he was called to the University of Gratz to fill the chair of midwifery and gynæcology. He had suffered for some years from the chronic nephritis which was the cause of his death.

Comparative Effects of Bullets of Different Patterns.—A correspondent of *The Sun* at Siboney describes the results of certain experiments made by Major Lagarde, who is in charge of the hospitals at that place, to determine the penetrating power of the bullets used on both sides in the fights that have taken place between the Spanish and American troops around Santiago. The bullet of the Mauser rifle of the pattern of 1895 penetrated 32.5 inches of yellow pitch pine; the Mauser of 1896, 32.54 inches; and that of 1897, 35.125 inches. The Krag-Jorgensen of 1898 penetrated 26.125 inches, but the Springfield rifle could send a bullet only six inches through the same wood.

The Ambulance Ship "Solace" sailed from this port recently. While at the navy yard she had an additional ice machine installed, and was supplied with a carbonater and an *x*-ray apparatus. She will go to Key West and take on board all the naval sick or wounded in the hospitals or on the vessels in port, and will then sail around the island of Cuba, taking on board the sick and wounded from the blockading vessels, and leaving them ice, fruit, delicacies, and stores for the sick. As soon as she receives her complement of sick and wounded, she will bring them to one of the Northern naval hospitals.

Dr. Frederick L. Benton, of Brooklyn, has been appointed assistant surgeon in the navy, and is assigned to the cruiser *Brooklyn*, Commodore Schley's flagship.

The Transport "Olivette" sailed on Wednesday for Santiago. Her cargo is chiefly composed of hospital stores and delicacies for the benefit of the sick and wounded at El Caney and Santiago, but, in addition, she is carrying tents and clothing for the soldiers in camp in and around Santiago. The latter is much needed, as the men—who were for the most part on first landing in Cuba clothed in their ordinary thick regimentals, which they were forced to discard—are in a woefully ragged condition. The *Olivette* will carry an army ambulance corps, with surgeons and thirty-four nurses, twenty of whom are colored.

Scorbutus so infrequently enters our ports of recent years that the arrival of a scurvy-infected vessel a short time ago, four months out from Java, is of sufficient moment to cause comment.

The Army Hospital Ship "Relief," with one hundred and twenty-five sick and wounded aboard, arrived in New York harbor a week ago. On Tuesday about half her patients were transferred to Bellevue Hospital, and the remainder were taken to St. Peter's Hospital and the Long Island College Hospital in Brooklyn. The voyage from Siboney was marked by magnificent weather, and the patients bore the journey remarkably well. There was no case of fever aboard, and the sanitary arrangements more than fulfilled expectations. The *Relief* when off Santiago took on board two hundred and sixty-six sick and wounded, of which number many were transferred to the *Seneca* and other ships, and fourteen died. All the wounded were in the large wards on the main and upper decks. The surgeons on the *Relief* are loud in their praises of her efficiency as a hospital and ambulance ship, and say that, excepting for a few details, notably the insufficiency of water-closet accommodation, she is almost perfect. The opinion in regard to the nature of the wounds inflicted by the Mauser bullets coincides very closely with that of the British surgeons in respect to the injuries inflicted by the ordinary Lee-Metford bullets in the recent campaigns in the Soudan and the Indian frontier war. One somewhat curious feature in connection with the engagement at Santiago is the fact that the majority of the injured were hit in the lower extremities, the explanation of which appears to be that they were wounded by falling bullets fired from a long range. The success attending the application of the *x*-rays in locating bullets has been most gratifying, and it may be said that their practical use has been fully demonstrated. Several major operations were performed on the *Relief*. Taking into consideration the fact that only those most severely injured were brought aboard to be treated, the results were extremely good. Under the modern conditions of naval and military warfare, hospital ships are a necessity, and the experience gained during the present war will be of the greatest use in the direction of evolving the perfect hospital ship.

Sir William Henry Broadbent has been appointed physician extraordinary to the Queen, in the room of the late Sir Richard Quain.

The American Academy of Medicine is said to have a membership of seven hundred and sixty-eight fellows, sixty of whom were admitted in the present year. It has been voted that those joining the society hereafter shall pay a yearly due of $1 in addition to the initiation fee of $5. Heretofore there have been no annual dues, although most of the members were subscribers to the journal of the transactions.

A Wheel Struck by Lightning.—An Irish physician was riding a bicycle near Queenstown recently, when lightning struck his wheel, wrecking it beyond repair. The rider was bruised a little by his tumble but was otherwise uninjured.

The Summer Corps of the Board of Health.—Thirty-eight summer inspectors, the greater number of them from the corps of school inspectors, have been appointed to serve from now until September 10th. Their special duties are to instruct mothers in the care of infants during the heated term and to treat any sick children whose parents cannot afford the services of a physician.

Pure Drinking-Water.—The committee on sanitation of the National Relief Commission, in Philadelphia, is engaged in a most commendable effort to introduce methods of purification of all the water supplied to our troops. It has issued a brochure, setting forth the advantages of boiling and subsequently aerating drinking-water. In view of the epidemics of typhoid fever which prevail at several of the camps, to the discredit of the medical department of the army, the missionary enterprise of this committee is most timely. Dr. M. S. French is the general secretary of the relief commission, and Dr. E. O. Shakespeare the chairman of the committee on sanitation. The office of the commission is in the Drexel Building, Philadelphia.

Foreign Practitioners in Berlin.—The police authorities of Berlin have issued an order which is of special interest to foreign physicians and dentists. It is permitted to display the title of "Arzt" (physician) upon a "shingle," provided it is at the same time designated where that title has been obtained, *e.g.*, "N——, Doctor of Dental Surgery of Chicago," etc. The native medical men have taken stand against this order upon two grounds: First, because German physicians have not the same rights in other countries, especially in Switzerland; and secondly, because it is a useless order in Germany, where, in fact, anybody may practise the healing art. The profession is, however, making strenuous efforts to terminate by legal means and measures this freedom of practice, but the success of such endeavors is at least problematical. Many persons of political influence have come out against the physicians, maintaining that every one has a right to select his own executioner, and may physic himself to health or to death as he may elect or as chance may decide.

Society Reports.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

One Hundred and Thirty-Ninth Regular Meeting, Held on Friday, April 1, 1898.

DR. W. GILMAN THOMPSON, PRESIDENT, IN THE CHAIR.

Some Remarks on Diphtheria Toxæmia and Immunity in Horses.—DR. H. M. BIGGS read a paper with this title. In reply to a question by Dr. George L. Peabody, as to whether the serum retained its antitoxic properties unchanged for an indefinite period, and whether freezing harmed or weakened the serum, the speaker said that when the serum was kept in bottles which were almost completely filled its antitoxic properties remained comparatively unchanged for months, even at the laboratory temperature. Experiments had shown that there was rarely a loss of over ten per cent. in antitoxic power under such circumstances. When the bottles were only partially filled, however, and contained a considerable amount of air, the loss of strength might be much greater, amounting in some instances to twenty or twenty-five per cent. The rule of the New York health department was that after six months the unused serum was replaced by a fresh product. In that length of time it usually showed some precipitation, becoming cloudy and milky, but in spite of this its actual antitoxic properties were not much affected, and it was perfectly safe to administer it, so far as was known. Freezing, Dr. Biggs said, did not affect the strength of the serum, or at least not to any appreciable extent. In reply to a question by Dr. Dana, he said that diphtheria antitoxin administered per os seemed to have little or no effect.

DR. J. W. BRANNAN said that at the Willard Parker Hospital during the past winter the serum which was employed was first filtered through cotton, and this practice had resulted in largely reducing the number of cases in which rashes appeared after the administration of the remedy.

DR. BIGGS said the cause of these rashes was still a mystery. One bleeding from a certain animal might produce a rash in a large percentage of the cases in which the serum was used, and another bleeding from the same animal a month later might produce very few rashes. Again, the serum from one animal might produce many rashes, while that from another animal might produce very few. Roux was formerly of the opinion that the serum from black horses was much more likely to produce rashes than that taken from horses of other colors; experience in this city had not borne out that view. It was more likely that the rashes were due to some individual peculiarity of the animal from which the serum was extracted. The irritant was in the serum, not in the antitoxin. It had been suggested that it might be related to certain abnormal conditions in the animals, analogous perhaps to lithæmia in the human being. In reply to a question Dr. Biggs said that a toxin unit was the amount of toxin which was required to kill a guinea-pig weighing two hundred and fifty grams, in from three to five days, and an antitoxin unit was one hundred times the amount of antitoxin that was required to neutralize a toxin unit.

DR. T. MITCHELL PRUDDEN said that a very interesting feature of the paper was the great tolerance shown by certain animals to the administration of the toxin, and the fact that it produced no effects on the nervous system of such animals.

DR. W. GILMAN THOMPSON said that the paper had a very important bearing on the general theory of immunity, and seemed to add to the difficulties of that subject rather than to simplify. The strength of the serum extracted from horses was apparently not diminished by repeated bleeding, and it was difficult to understand why some animals could resist such large doses of the toxin.

DR. BIGGS said he was unable to explain the extraordinary natural immunity possessed by some animals. In one instance, for example, eighty times the minimum dose of the toxin which had proved fatal to one horse was injected into another horse, and produced scarcely any constitutional disturbance; increasing doses were given until eighty thousand toxin units could be injected at one time. In spite of these enormous doses that animal never produced a high grade of antitoxin. On the other hand, in the very susceptible animals small doses (perhaps five toxin units) brought about a decided reaction, but such animals never produced a very high grade of serum. The varying degrees of immunity possessed by the animals was probably due to the natural resistance of the tissue cells, and had an analogy in the condition which was found in human beings, of whom, out of a number exposed to the same infection to the same extent, some might show its effects to a virulent degree, others to a very mild degree, while still others might escape entirely.

DR. THOMPSON said it was hard to explain the permanence of the antitoxin in the blood, for the latter, as a rule, promptly eliminated all foreign bodies.

DR. BIGGS said that when the injections of toxin were discontinued, the strength of the serum withdrawn from such an animal diminished quite rapidly. In reply to a question of Dr. A. H. Smith, as to whether efforts had been made to isolate the antitoxin from the serum, he said that very extensive experiments had been made in this direction, but thus far they had not proven very satisfactory. It could not be filtered out. It might be preserved in a dry condition, if kept from the air and light and in sealed bottles.

A Case of Cancer of the Tonsil and Pharynx.—The patient, presented by DR. JOSEPH D. BRYANT, was a man, fifty years old, a laborer. His family history was negative. The patient had had rheumatism for the past fifteen years; his personal habits were good, excepting that he had long been an excessive smoker. One year ago he noticed a small movable tumor—as he called it—near the angle of the jaw, which gradually increased in size. It was circumscribed, and was neither tender nor painful. He stated that he had had no throat trouble, and it was not until the early part of February, 1898, that he sought medical advice, and then on account of a severe pain which commenced in his throat and radiated up to his left ear. He consulted Dr. Ed Ferguson, of Troy, N. Y., who found an ulceration of the pharynx and tonsil which he regarded as malignant, and sent the man to Dr. Bryant for surgical interference. When the patient was admitted to Bellevue Hospital on March 3, 1898, he was found to have an enlarged gland, about the size of a big English walnut, just below the angle of the jaw on the left side. An inspection of the throat showed an extensive ulceration, which had destroyed the left tonsil, a portion of the pharynx on its lateral wall, and extended into the deeper tissues down to the base of the tongue, encroaching upon that organ to the extent of about half an inch. On March 7th, under chloroform, three enlarged glands in the submaxillary space were removed through an incision extending from below the lobe of the ear and along the cutaneous border of the sternomastoid to the thyroid cartilage. The dissection was then carried downward, the external carotid was tied, and the lower jaw was divided in front of the last molar

tooth through an incision extending from near the middle of the cheek downward to the middle of the preceding incision, and removed, thereby exposing the outer wall of the pharynx. The hemorrhage following this was so persistent that it was necessary to resort to plugging in order to control it. The tampon was left undisturbed for forty-eight hours. During this interval the patient was as comfortable as could be expected, his temperature never going above 100.2° per rectum, nor his pulse above 80. After forty-eight hours chloroform was again administered and the operation completed. The tampon was removed, the tissues were drawn aside, and the muscular structures divided down to the aponeurosis of the pharynx. The entire diseased tissue was then cut away. The lingual nerve was saved by dissecting it loose throughout its entire length and drawing it out of the field of operation. Another point of interest was a very large pharyngeal vein which was found lying in close contact with the outer wall of the superior constrictor. Since the second operation, which was done on March 9th, the patient had progressed very favorably. His temperature never rose above 101.8° F. (in the rectum), nor his pulse above 104. He was out of bed on the sixth day. The pathologist reported that the case was one of epithelioma. The growth probably originated in the tonsil, and gave rise to secondary involvement of the tongue, pharynx, and glands.

Dr. George L. Peabody referred to a case that had come under his observation in which a large mass of cancerous glands in the neck, which had been regarded by the surgeon as the primary focus of the disease, was found on further investigation to be secondary to an epithelioma in the mouth. In another case a patient who presented himself at the New York Hospital to have an enlarged gland in the neck removed was found to have a large epitheliomatous ulcer in the mouth, of which he was unconscious.

Dr. George F. Shrady said that epithelioma of the tongue, of secondary origin, was a comparatively rare condition. Personally, he could recall but two such cases. One of them was the case of General Grant, in which the disease commenced in the pillars of the fauces and secondarily involved the tongue and subsequently the glands in the neck. The speaker said he thought Dr. Bryant's plan of tamponing the wound at the first operation and completing the work later was an excellent expedient.

Dr. Bryant said that in the case presented the disease had advanced to such an extent that he was at first inclined to regard it as hopeless so far as surgical interference was concerned. By tamponing the wound after removal of the jaw and completing the operation at a later stage he was enabled to remove the diseased tissue much more thoroughly, with less hemorrhage and less danger of infecting the wound.

A Case of Hysteria, with an Interesting Temperature Chart.—This case was reported by Dr. Andrew H. Smith. The patient was a female, a trained nurse, with an unimportant family and personal history. During the three weeks previous to her admission to the Presbyterian Hospital she had suffered from fever and pain in the side and limbs, her symptoms being first attributed to malaria and afterward to grippe. Four days previous to her admission she began to vomit after taking nourishment. After two days her vomiting became almost continuous; she never vomited any blood, but complained of pain and soreness in the epigastrium. Upon her admission to the hospital on February 16, 1898, the patient's most prominent symptom in addition to the vomiting was the temperature. On February 16th, this ranged from 98° F. at 10 A.M. to 102° at 4 P.M., then rapidly fell to 99 F. On the following day it ranged from 97° at noon to 104.5° F. at 8 P.M., and then within two hours fell to 100° F. On the following day it ranged from 97.5° at 8 A.M. to 104.5° F. at noon, falling to normal within four hours. Subsequent to this date the temperature never rose above 100.5° F., and gradually became normal. In addition to her temperature and gastric symptoms the patient had certain stigmata of hysteria, *i.e.*, enormously dilated pupils, retention of urine for long periods, and an absence of the palate reflex. Nothing of importance was found in the physical examination, and no plasmodium malariæ could be discovered in the blood. Large doses of quinine had no effect on the fever. It was finally decided to try asafœtida, and under its administration the temperature rapidly dropped to normal and the vomiting ceased.

Dr. Bryant mentioned the case of a hysterical woman who had a wonderful way of getting her rectal temperature up to 108° and even 110° F., while her axillary temperature remained normal. The patient he referred to was well known in various hospitals in New York. She had a fæcal fistula, and numerous laparotomies had been performed upon her.

Dr. A. H. Smith said he had seen the patient referred to by Dr. Bryant. Among her other hysterical manifestations she frequently vomited fæcal matter which she had surreptitiously swallowed. In reply to a question the speaker said he thought that in his case the woman's gastric symptoms were not sufficiently severe to account for the vagaries in her temperature.

Dr. Charles L. Dana said he did not believe there was any such thing as true hysterical fever. Hysteria was a psychosis—a disease of the mind—and we could not by any disease of the mind raise the temperature to any marked degree. Of course, during excitement the temperature rose somewhat, but the continuous forms of fever seen in hysterical persons must be explained by some somatic complication or else were of artificial origin. The speaker said he had never seen a case of true hysterical fever, and the cases that had been reported of continuous (or more or less continuous) hysterical fever were probably something else. In Dr. Smith's case he thought the exacerbations of temperature might be attributable to the gastric disturbance or to some incidental features.

Dr. Peabody said that Dr. Dana's explanation of the fever sometimes observed in hysterical people added to the obscurity of those cases rather than cleared it up. The fever might be due to some somatic complication, as Dr. Dana had suggested, but, if so, frequently it could not be made out. The speaker said he thought he had seen cases of true hysterical fever—not continuous fever, but intermittent in character, as in Dr. Smith's case. Doubtless, in many instances these were cases of pure deception. In a case which came under his observation some years ago the patient had an axillary temperature ranging from 118° to 120° F. For a number of days the patient's method of producing this temperature remained undetected, but it was finally discovered that she accomplished it by heating a piece of brick on the stove and placing it in the axilla a few minutes before the nurse came in to take her temperature.

Dr. Robert Abbe said that, according to the chart shown by Dr. Smith, the patient's pulse never went above 88° F., even when her temperature rose to 104.5° F. Such a discrepancy, he thought, was incompatible with the usual relations of true febrile reaction.

Dr. Thompson said he felt sceptical about the existence of such a condition as true hysterical fever. A number of cases had come under his observation in which exceedingly clever methods were employed to produce an artificial temperature record. In one case, which was reported some time ago before the Association of American Physicians by one of its members,

the patient had a temperature record of 148° F., for which no explanation could be found. Of course, as an actual fact, this was a physiological impossibility. The patient, who was a clever sleight-of-hand man, subsequently was turned out of two hospitals in New York for malingering and knavery. At the Presbyterian Hospital his temperature record was 109° F., and his pulse 70. He was turned out by Dr. Thompson, who on the following day found him at the New York Hospital, where a surgeon was about to operate on him for a supposed internal injury which he claimed to have met with, and which his high temperature tended to confirm. His temperature record promptly dropped to normal when he learned that he would have to leave the hospital. Dr. Thompson mentioned another case of so-called hysterical fever, lasting eight weeks, which proved to be clever malingering. A third case was one which Dr. Peabody saw about ten years ago and reported in the MEDICAL RECORD as a case of hysterical fever. The patient was a girl who remained in the New York Hospital for six or seven weeks, with a temperature of 105° or 106° F. Dr. Thompson happened to see the patient at that time and subsequently encountered her at the Presbyterian Hospital, where she had been for over a month; she complained of pain over the spleen, had a high temperature, and was supposed to be suffering from an intra-abdominal abscess. On her being accused of malingering her temperature went down and she left the hospital. The speaker called attention to the fact that the ordinary clinical thermometer did not register above 110° F., and when the large thermometer was used, unless its position was carefully watched, the column would record any desired temperature when the instrument was held in a slightly slanting position. In conclusion, Dr. Thompson said that a belief in "hysterical fever" seemed to be in direct opposition to all known physiological laws and the phenomena of fever.

DR. A. H. SMITH said that in the case he had reported the temperature recorded was taken in the rectum.

DR. PEABODY said that with the ordinary clinical thermometer some patients were able to raise the column of mercury by squeezing the bulb of the instrument.

DR. THOMPSON stated that the true internal temperature could readily be ascertained by taking the temperature of a stream of urine as it was being passed.

A Case for Diagnosis: Hysteria or Malingering?—This case was reported by DR. GEORGE L. PEABODY. The patient was a young man, eighteen years old, a Hebrew, who, after having had some trouble with his father, left his home in Philadelphia and came to this city in search of work. While walking along the street he was seen to stagger and then to sit down on the curb. A policeman was summoned, who found that the young man was apparently unable to move his legs, speak, or hear. He was taken to the New York Hospital in an ambulance, and on his arrival there it was found that he had some control over his legs but was still unable to speak or hear. He was able, however, to write an intelligent reply to any question that was put to him in writing. Various methods of surprising him, in order to ascertain whether he was really deaf and dumb, were tried, but all were unsuccessful. A bath, with the water at a temperature of 50° F., was then prepared, and he was immersed in it and kept there until his fingers and lips were blue, and although he resisted a good deal he did not make a murmur. He was then etherized; when he had partially recovered from the influence of the ether he sat up in bed, and on being asked in a loud voice, "How are you?" he replied, "I'm all right." Within an hour he was up and walking about the ward, and had no further trouble with his speech or hearing. He was kept under observation a week and maintained to the last that he was unable to hear or speak when he was brought to the hospital, and that the ether cured him. Dr. Peabody added that in his opinion the case was one of hysteria. The patient had a number of the stigmata of hysteria, among them being anæsthesia of the pharynx and conjunctiva, and of local areas of the integument.

One Hundred and Fortieth Regular Meeting, Held on Friday, May 6, 1898.

DR. W. GILMAN THOMPSON, PRESIDENT, IN THE CHAIR.

Cerebral Hemiplegia following Diphtheria, with Report of a Case.—DR. J. W. BRANNAN reported this case (see page 155).

DR. BEVERLEY ROBINSON said he had never seen cerebral paralysis following diphtheria. Personally he would be inclined to favor embolism rather than hemorrhage as the cause of such paralysis. In diphtheria there was a special tendency to the formation of fibrinous clots, which might remain in the right and even in the left heart for some time. During a recent post-mortem at St. Luke's Hospital a fibrinous clot was found in the right heart, which the speaker said he felt quite confident must have been there for several days before death.

The Utility of X-Ray Work.—DR. ROBERT ABBE made some remarks on this subject, which he illustrated with numerous stereopticon views of *x*-ray pictures from his own work. The speaker said he was now using the *x*-rays frequently, both in his private and hospital work, and that he was much impressed with the utility of the rays as an aid to diagnosis in many obscure cases. Many surgeons still scoffed at the idea of employing this diagnostic aid, because in some cases it told us no more than we should be able to discover by our tactile sense coupled with surgical knowledge and experience, while, on the other hand, its use had thus far not been attended by much success in certain conditions regarding which we were often very much in the dark; such cases, for example, as the possible presence of a renal calculus, or a suspected fracture of the neck of the femur in old people, or in obscure cranial conditions. It was to be hoped, Dr. Abbe said that, success with the rays in those conditions would improve as time went on and the apparatus and technique of radiography were perfected. Dr. Abbe said that, while very excellent radiographs could be obtained with instruments of moderate penetrative power, the best work he had done was with the larger instruments, with more powerful penetration. Whether the static machine or the induction coil would give better results seemed to depend largely on the man who used the apparatus and his method of doing the work. The technique was such an important element that unless it was properly carried out even the best apparatus would prove disappointing in its results. Many excellent instruments were in the possession of physicians and surgeons, in whose hands they were impotent, because their successful use depended on the knowledge of the correct time exposure—for each part of the body, for each kind of plate used, for the working energy of the tube and machine at the time of use—all of which must be studied by the immediate development of the radiographic plate, in the house of the operator, by himself or by his office nurse or assistant. This implied a more or less intimate knowledge of photography, of mechanics constantly to readjust the machine and to obtain uniform power, and

at least an amateur acquaintance with electricity. The speaker said he had devised one expedient, which for more than a year had given him great satisfaction. In efforts to keep exact note of the case, time exposure, and history of each plate, he discovered that heavy lead-pencil writing on the paper enveloping the plate, made before exposure, would be indelibly reproduced on the plate within—inasmuch as the graphite was almost as opaque to the rays as metal. This saved all future confusion as to the subject matter on the plate, and did not affect the picture. He had often been asked as to burning the skin by the rays, and could only say that, after taking many hundred pictures with exposures frequently up to three-quarters of an hour, he had never seen the faintest effect on the skin of the patient. This he believed was due to never allowing the tube to be nearer the skin than twelve inches or, for long exposures, fifteen inches. With the best working of the tube and a twelve-inch coil of the Edison make, which he now used, he had gotten a good impression of renal calculus in a five-minutes exposure. To secure this, however, required careful and prolonged development of the plate.

Dr. Charles McBurney said that, while the possibilities of radiography had been at first regarded as almost unlimited, it was certainly true that up to the present time many of the *x*-ray pictures had been of a disappointing character. Moreover, a large number of conditions which had been beautifully illustrated by the *x*-rays could have been perfectly well made out by other methods of diagnosis. Among the most important uses that had been made of the rays thus far was the detection of foreign bodies and certain fractures. Dr. McBurney referred to one aspect of this subject which he said was frequently overlooked, namely, the value of *x*-ray pictures to patients who wished to set up the claim that they had not received proper treatment at the hands of the surgeon. Many of the radiographs of healed fractures, for example, showed apparently a considerable degree of deformity, and yet the functional results were perfectly good. This deformity, of course, was often more apparent than real.

Dr. Robert F. Weir said he agreed with Dr. McBurney that the *x*-rays had thus far not had a very wide application, their use having been practically limited to the detection of foreign bodies and an examination of the presence and outcome of certain fractures. From the latter experience the fact should be borne in mind that, excepting in very rare instances, a perfect reduction after a fracture was not accomplished. Aside from this, Dr. Weir said, thus far he had not been materially assisted in his surgical work by the use of the *x*-rays, and he still placed his main reliance upon other methods of diagnosis. In one case of foreign body in the œsophagus which he was able to feel with the bougie, a radiograph which had previously been taken showed the foreign body very indistinctly—so much so that he would have been unwilling to cut had he not been able to feel it.

Dr. Peabody said that thus far the use of the *x*-rays in cases of renal calculi had been quite unsatisfactory. In some cases of vesical calculi, however, the pictures had been very successful.

Dr. Weir thought this might be due to the depth and surroundings of the kidney.

Dr. F. P. Kinnicutt said that the *x*-rays had been used to a considerable extent at the Presbyterian Hospital, with rather unsatisfactory results, so far as diagnosis in medical cases was concerned.

Dr. W. Gilman Thompson said that in a case of aneurism of the aorta that had come under his observation the tumor could be made out very satisfactorily with the fluoroscope, while the radiographs did not reveal it at all. They simply showed a distorted chest.

Dr. V. P. Gibney said he thought Dr. Abbe had obtained exceptionally good results with the *x*-rays. Personally he had been rather disappointed with the use of the rays in early joint lesions, and he had come to the conclusion that in such cases palpation was of greater value than the radiograph. He had, however, found the rays very useful in the diagnosis of early sarcomatous tumors. The speaker expressed the belief that in the future this new diagnostic agent would have a much greater application than it had at present.

Dr. McBurney said he had recently operated on a young man of eighteen, who from his earliest infancy had suffered a great deal of pain which was always felt on the left side, below the last rib, just at the edge of the sacro-lumbalis muscle. The pain was boring in character. He had been under the care of a number of physicians, and had undergone various methods of treatment. He also had a slight lateral curvature of the spine, with the concavity of the curve toward the site of the pain, and for some time had worn a spinal brace. The examination of the urine was very suggestive of renal calculus, as it contained pus, blood, and albumin. Thereupon several radiographs were taken, which showed quite distinctly the presence of a stone in the left kidney. At operation, a large calculus was found in the anterior portion of the kidney, near the pelvis; this was removed, and the patient promptly recovered from all his symptoms. In connection with his report of this case, Dr. McBurney showed the radiographs and the calculus he had removed. The speaker said that, while the *x*-ray pictures in this instance were exceptionally good, he thought the diagnosis could have been made without their aid. The stone was of the uric-acid variety. In a number of instances pain and hæmaturia had suggested the existence of calculus in the kidney, and, although operation failed to demonstrate such condition, the symptoms had disappeared.

Dr. Peabody suggested that in those cases the relief might have been due to the fact that a small calculus was dislodged by the manipulation of the organ.

Dr. McBurney thought it more likely that the symptoms were the result of an interference with the circulation of the kidney, which was corrected by the manipulation. Slight malposition of the kidney, causing tension of the renals or ureters or kinking of the latter, might give rise to pain and hæmaturia.

Dr. Weir said the disappearance of the symptoms in some of these obscure cases when nothing definite had been found might perhaps be attributed to the fact that tension was relieved by cutting through the capsule of the organ. This theory had been advanced by Tiffany, and recently Harrison had resorted to this procedure in order to relieve the tension in cases of acute nephritis. There were other cases on record in which the pain was relieved by less drastic measures.

The Reason why Patients Recover from Tuberculosis of the Peritoneum.—It is apparent that when the abdominal cavity is opened and drained, saprophytes which enter through the drainage opening produce toxins which are fatal to or which inhibit the growth of certain tubercle bacilli. In some cases the bacilli are not killed by the toxins, but their growth is probably inhibited for a sufficient length of time, so that nuclein brought by the polynuclear leucocytes in the peritoneum can destroy them. This seems like a rational explanation of the fact that patients recover from tuberculosis of the peritoneum after operation; but on this theory the abdomen should not be closed immediately but should be drained in order to allow the saprophytes to enter through the drainage opening. —Robert T. Morris, "Lectures on Appendicitis and Notes on Other Subjects."

Clinical Department.

A UNIQUE CASE OF APPENDICITIS—OPERATION.[1]

By JOHN YOUNG BROWN, M.D.,

ST. LOUIS, MO.,

PRESIDENT OF THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

I REPORT the following case as clearly substantiating the assertion so frequently made by those surgeons who advocate early operation in all cases of appendicitis, namely, that we cannot be accurately guided, either by pulse or temperature, as to the nature and extent of the pathological conditions going on in and about the appendix in any given case.

I was requested by Dr. Paul Paquin to see in consultation with him Robert R——, aged forty-two years; occupation, fireman. Three days before I saw him he left work and came home suffering from what he termed a bilious attack. When seen by Dr. Paquin he was complaining of great nausea, intense abdominal pain, and great tenderness in the right iliac region. Pulse, 80; temperature, 99° F. Dr. Paquin prescribed for him, and as the patient grew no better he concluded that he had to deal with a case of appendicitis, and on the following morning I was called.

On examination I found the abdomen slightly tympanitic, with considerable tenderness over the seat of the appendix, but no mass could be made out. Rectal examination was exquisitely painful and considerable bogginess could be outlined on the right side. Pulse, 80; temperature, 98.8° F. I concurred in the diagnosis of appendicitis and advised immediate operation. The patient was accordingly moved to the Deaconess Hospital and prepared for operation. Assisted by Dr. Llewelyn Williamson, and in the presence of Drs. Paquin, Straus, and William Williamson, I opened the abdomen. From the date of the attack until the patient went on the operating-table his pulse had never been above 82, and his temperature never higher than 99.8° F. The nausea, however, persisted, and he had the general appearance of being a sick man.

The usual incision was made, and, the abdomen being opened, about a quart of stinking serum was found free in the pelvis. This was sponged out, and I found presenting in the wound a loop of ileum tightly bound down by a band-like adhesion. The presenting ileum was dark in color, and at first I thought would necessitate a resection. However, after the constriction was relieved, the circulation gradually returned. From the adhesions present about the cæcum it was conclusive that the patient had had frequent attacks of appendical trouble. The cæcum was tightly bound down by adhesions, and it was with some difficulty that the appendix was found. It was densely adherent to the cæcum, strictured, and gangrenous at the tip, with a perforation of about the size of a pea. After freeing the appendix, I cut it out to the head of the cæcum, and stitched up the opening with a double row of sutures. This was with difficulty done, owing to my inability to bring the cæcum up into the wound. The abdominal cavity was copiously irrigated with several gallons of hot salt solution and carefully sponged out; after several strips of gauze were placed in different directions for drainage the wound was closed. The patient reacted nicely, the gauze was removed in thirty-six hours, and his recovery was uneventful. In six weeks from the date of operation he was up and shortly after returned to work.

The above case, to me, presents many interesting points. Here was a man with a temperature and pulse almost normal, with every clinical symptom pointing to a mild attack of appendicitis, and yet when his abdomen was opened conditions were found which conclusively proved that had operative interference been delayed twenty-four hours he would have been beyond the reach of surgery to save. Several months ago I saw in consultation with Dr. H. H. Grant, of Louisville, a patient presenting symptoms almost identical with those seen in the case above reported. A diagnosis of appendicitis was made, and, the abdomen being opened, an intussusception was found, necessitating the resection of ten inches of gangrenous ileum.

I know there are those who contend that they can tell just which cases should be subjected to operation and just which should not; but the more I see of this condition the more I am convinced that we should operate in all cases at the earliest possible moment, and that the great danger in this disease is delay. On this point Fowler speaks very emphatically. "As soon as the diagnosis of progressive appendicitis is assured, the abdominal cavity should be opened and the appendix removed. If opium has been injudiciously administered and the progressive character of the case in hand is doubtful, it is better to err on the side of safety and remove the appendix at once. The conditions present are usually beyond the power of nature to remedy, while in the hands of a surgeon who pays strict attention to aseptic details, both preliminary to and in the course of the operation, the latter entails less risk to life than that which is involved in even a mild attack of appendicitis, which remains stationary at the end of twenty-four hours, with all its possibilities of lymphangitis, infection of the peritoneal cavity, retained muco-pus within the tube, and rupture of the latter into an unprotected peritoneal cavity."

Robert T. Morris, of New York, who has perhaps done more to develop the pathology of this disease than any other man in this country, in speaking of the indications for operation in appendicitis, says: "There are no groups of symptoms which will allow us to make a rational prognosis as to the eventual outcome, or the prospective complications, in any progressing case of appendicitis, and we must abandon the hope of having any such classification of symptoms for a guide in the future. Attempts will be made, from time to time, to classify symptoms for prognosis from small groups of cases, but they will fail because of the nature of the disease. I speak then unequivocally, knowing that some patients are to die and others are to suffer, unnecessarily, because their advisers will believe themselves to be upon a prognostic track. There is but one rule to be followed, and that is to isolate an infected appendix as promptly as we would isolate a case of diphtheria, and for practically the same reason, viz.: the infected appendix will probably infect other structures, and the infected throat is likely to infect other throats. An infected appendix is isolated when it is out of the patient. All cases of appendicitis that are otherwise within surgical limitations, and that are in reach of competent surgical services, are cases for prompt isolation of the appendix. Various periods of waiting have been tried, with the effect of proving that the question is wedge-shaped, with the greatest number of deaths at the broad waiting-end, and the smallest number of deaths at the point of isolating an infected appendix, while infection is limited to the confines of the appendix. We are held to our rule by two cardinal principles, viz.: (1) Every hour of progress of any acute attack of appendicitis means increased damage to viscera, and (2) with no infected appendix the patient would have no complications of appendicitis, if we leave him with no infected appendix."

Another point suggested by this case is as to the proper method of disposing of the stump in appendec-

[1] Read before the St. Louis Medical Society, March 12, 1898.

tomy. This question has been very much discussed of late, and many valuable papers have been written on this subject. For quite a number of years Price, of Philadelphia, has been practising a method which I believe to be ideal in the large majority of cases. The operation consists in cutting the appendix out of the head of the cæcum and closing the wound with a double row of sutures. The two methods now most in vogue—the method of Edebohls, which consists in the inversion of the entire appendix, and the method of Dawbarn, namely, the inversion and burying of the stump after amputating the distal two-thirds—with their various modifications possess many disadvantages. As pointed out by Fowler, it not infrequently happens that in gangrenous inflammation of the appendix the gangrene extends to the cæcal wall. Any method which leaves behind appendical tissue thus becomes the seat of inflammation, and is faulty in technique just in proportion to the amount of appendical tissue thus allowed to remain. He reports several interesting cases, in which after careful treatment of the stump by the inversion method there were subsequent extension of the gangrenous process, perforation, and death from general peritonitis. The excision method, as practised by Price and modified by Fowler, is ideal in its simplicity. After the surrounding parts were protected with gauze the cæcum is held between the thumb and index finger of the left hand; an assistant seizes the appendix with a forceps and the operator with curved scissors cuts the entire organ out of the head of the cæcum; the wound in the cæcum is then closed with a double row of sutures; the dirty sinus is removed, and we get a perfect coaptation of healthy tissues.

A CASE OF PARTIAL VAGINAL OCCLUSION IN A WOMAN PREGNANT EIGHT MONTHS.

By CARL F. GISSLER, M.D.,

BROOKLYN, N. Y.

On June 13, 1897, Mrs. M——, aged twenty-four, called at my office with her husband. A midwife sent these people, with the statement that, when Mrs. M——'s time was up she would not be able to deliver the baby, as there was no vagina for its passage. I made a brief examination, and found, half an inch from the introitus, a firm, elastic, and congested hymen, occluding all but a central orifice allowing an ordinary metal catheter to pass. Through this one-eighth-inch opening the sperm had entered and fructified an ovum in the uterus, the latter now being in about the eighth month of pregnancy, according to the woman's calculation. The child's heart could be heard through the abdomen. The urethral orifice was dilated widely, gaping over half an inch, and the lower part of the vulva was very widely separated and deeply congested. I told her to call again for operation at my office.

A number of physicians were invited, and on the evening of June 14, 1897, I rendered the vulva aseptic in the usual way, and with a hypodermic syringe injected a three-per-cent. cocaine-muriate solution in various districts of the field of operation. Crucial incisions were then made with the scalpel and scissors into the hymen, which was one-fourth inch in thickness near the central orifice and thicker near its insertions. The tissue was removed, and the raw bleeding edges were sutured with chromicized catgut to arrest the rather copious hemorrhage. Hot antiseptic solutions were used for irrigation, and the vagina was tightly packed with antiseptic gauze. Some whiskey was given her on account of the hemorrhage. She felt no pain during the operation. At her home next morning the gauze was removed, the parts were irrigated again with the solution, and more gauze was applied with a T-bandage.

Nothing was heard from her until July 1, 1897, when I was called in haste by the husband, who had been sent by the same midwife. Before going there I called upon a neighboring physician, requesting him to deliver the child, as I expected I could not sew up her lacerations so well if I had to do all the forceps traction alone or perhaps a version. The woman was chloroformed by me and the baby delivered by forceps by my medical friend. The baby weighed about nine pounds, and was alive and normal. The perineum was torn only about three-fourths inch, but the narrow vagina was torn some four inches. This rent I sewed up immediately with chromicized catgut, followed by hot antiseptic irrigations, the woman being under chloroform on a table.

The surroundings were of the poorest to be found in the city, dirty in the extreme; a neighboring woman occasionally visited her, and, as the husband could not provide for a proper nurse, septicæmia set in and death followed within less than a week. My advice to the husband on the second day to send her to a hospital, for proper nursing, was not heeded.

23 KOSSUTH PLACE.

AN EXTRAORDINARY CASE OF FOREIGN BODY IN THE LUNG.

By J. HENRY BARBAT, M.D.,

SAN FRANCISCO, CAL.

The following case came under my observation recently, and its history is deemed worthy of publication on account of the unusual and interesting features connected with it.

Fourteen years ago, the patient, then seven years old, was eating cherries and swallowing the stones; some amusing incident caused him to laugh, and during an inspiratory effort he suddenly aspirated a cherry stone into the trachea. This caused a violent fit of coughing, but the stone was not expelled; instead, it passed down deeper and lodged in one of the bronchi of the left lung. It did not cause him much distress until one day, a week after the accident, while sitting quietly, he was taken suddenly with a violent fit of coughing and expectorated a large quantity of muco-pus streaked with blood. The family physician was sent for and made a diagnosis of broncho-pneumonia, not giving credence to the story of the cherry stone. The patient's condition for the next two months remained about the same, as follows: Temperature, from normal to 100° F. in the morning, and from 100° to 104° F. in the afternoon. The pulse was rapid and there was considerable dyspnœa. Frequent coughing-spells occurred, with expectoration of muco-pus having a horrible odor. The patient was losing flesh rapidly and had profuse sweats. After two months the symptoms suddenly subsided and the patient convalesced rapidly. No further symptoms were noted until exactly a year later, when he had several hemorrhages from the lung. At precisely the same period every year for fourteen years these hemorrhages took place. The last ones occurred in the beginning of March, 1897. They were more profuse and occurred as often as four times in one day. His medical attendant advised him to have the lung radiographed, and, if the position of the foreign body could be determined, to have it removed by surgical means.

On March 17, 1897, Dr. Philip Mills Jones took a radiograph of the chest, exposing the patient for twenty minutes; one week later another exposure was made, lasting twenty-five minutes. After the first exposure the hemorrhages stopped, and the patient began to improve rapidly. Nine days after the last exposure

the patient noticed a slight itching on the chest in the region which was exposed to the *x*-ray tube. Two days later a violent dermatitis developed, which lasted six weeks and was accompanied by considerable pain and a good deal of secretion. Medication had but little effect on the dermatitis, which seemed to run its course in spite of all treatment.

The general improvement which followed the *x*-ray burn was little short of wonderful. Ever since the beginning of his trouble the patient had been unable to lie on his left side, as it occasioned coughing. This inability stopped immediately, and he was able to lie in any position without inconvenience. His chest, which was poorly developed, has expanded, and he is able to put his lungs to the most severe test.

On November 15, 1897, while lying in bed, he was seized with a sudden fit of coughing, and raised a solid mass of tissue about as large as a small hazelnut, which on close examination proved to contain the long-lost cherry stone. No further trouble has been experienced since then.

Whether or not the exposure to the *x*-ray or the burn produced thereby had anything to do with the expulsion of the cherry stone, it is impossible to say; but it is certain that some beneficial action was produced by the exposure, and more by the burn. This is further proved by the fact that Dr. Jones had another case of *x*-ray dermatitis at the same time, which also showed a most remarkable disappearance of hemorrhages, which had been persistent for a long while.

803 Sutter Street.

VICARIOUS MENSTRUATION FROM THE UMBILICUS.

By JAMES A. GARDNER, M.D.,

BUFFALO, N. Y.

We are told that vicarious menstruation is a periodical discharge of blood from some part of the body other than the interior of the uterus. It may come from almost any mucous membrane, from the nose, mouth, breast, or it may come from open wounds. I have not been able to find any record of hemorrhage from the umbilicus, so will give a short history of a case which has come under my observation.

Frances K——, aged sixteen years, Pole. First consulted me in February, 1898. Family and previous history negative. The patient complained of not menstruating, and came for relief. She had pain in the epigastrium and almost constant headache.

During June, July, and August, she had hemorrhage from the umbilicus, lasting from twenty to forty-eight hours each month. She became very much frightened, but because of the strange site of the bleeding was ashamed to consult a physician. Since then she had worn a tight band round the abdomen. During the autumn months she had no hemorrhage from the umbilicus, but had severe epistaxis and hæmoptysis. Since November she had had increasing tension of the abdomen and severe pain on pressure, not over the hypogastrium as would be expected, but over the epigastrium. She had had also chronic constipation and headache.

Physical examination shows some anæmia but not marked. Heart and lungs apparently normal. Abdomen very much distended, and painful on palpation. Umbilicus admits of a probe being passed about one and one-half inches. Vaginal examination gives patulous hymen; uterus and appendages are apparently normal, but hypersensitive.

This examination was not entirely satisfactory because of the impossibility of making a bimanual examination, the abdomen being so tense. A mild emmenagogue was prescribed and the patient began to menstruate in forty-eight hours, all symptoms being relieved. On a second vaginal examination, with abdomen lax, the uterus and appendages were found to be normal.

A UNIQUE CASE OF THE COCAINE HABIT.

By JOHN H. BILLINGS, M.D.,

NEW YORK.

I was called several days ago to see A. B——, who was suffering most intensely from abdominal pain, and who informed me that, having a stricture of the rectum, he was in the habit of using daily a large rectal bougie to dilate the contraction and obtain a satisfactory evacuation of the bowels. In the doing of this three hours previously, the instrument had slipped beyond reach, and in addition a small rubber syringe used to fill the rectum with cocaine solution had also gotten beyond control. He confessed to using cocaine habitually in this way, the passing of the dilator causing severe irritation at times. The patient in this plight called for prompt relief, as the temperature was elevated, pulse accelerated, and tympanites developing.

On examination, the syringe was found about two inches above the internal sphincter. No stricture presenting itself it was removed, and after exploring thoroughly the rectal cavity the finger came in contact with a cord. The patient being directed to bear down and make traction on the cord, the blunt end of the bougie was felt, and after considerable traction it came away, it being a large gum dilator, eighteen inches in length and one and one-half inches in diameter. The sphincter was greatly relaxed and presented no resistance to the passage of the foreign bodies.

This case is reported as an illustration of the peculiar method of taking cocaine and as a curious example of perverted sexual appetite.

121 East Fortieth Street.
May 14, 1898.

AN ANTIDOTE TO THE RHUS POISON.

By A. T. HUDSON, M.D.,

STOCKTON, CAL.

In the Medical Record for April 16, 1898, is an article on Rhus toxicodendron, by Dr. Louis F. Frank, of Milwaukee, Wis. The author speaks of many remedies but gives no preference to any. This probably is no oversight, for I find such is the general tone of authors on the subject.

A few years ago my son put a Chinaman to clearing a piece of ground which was infested with a thick growth of poison oak, Rhus diversiloba, which had to be handled and burned. After one day's work the Chinaman reported sick, with hands and face swollen and painful. Remedies from the nearest doctor were obtained and applied. A carpenter who was working about the place was afflicted also. His eyes were closed and very painful. The medicine at hand was used on both patients for several days, with no relief. My son then sent to me, a hundred miles distant, for treatment. I ordered muriate of ammonium, one ounce, to be dissolved in two quarts of warm water. This solution was to be applied with cloth or absorbent cotton, covered with oil silk or rubber tissue. Relief followed quickly and in two days the sufferers were well or able to work.

Ten days later my son, after working a day with the shrub, found at night that his hands were swelling and inflamed. He applied the remedy at once, and by the next morning there was positive arrest of the malady. By frequent washing with the solution he and the others were not troubled thereafter.

Dermatitis venenata is usually self-limited, although

the limit may be twenty-four hours or as many days; hence the long list of uncertain remedies. Any medicine which will relieve pain and arrest morbid progress promptly is a remedy much needed.

The above cases and a history of many others might be cited to show that this drug, hydrochlorate of ammonium, is a pleasant and efficient curative and prophylactic.

DISPLACEMENT OF THE BLADDER CAUSED BY A RAILROAD ACCIDENT—CORRECTED BY LAPAROTOMY.[1]

By F. L. FORKER, M.D.,

BINGHAMTON, N. Y.

The case I report to-day is, as far as I am able to ascertain, unique, for a faithful inquiry and diligent search of medical literature have failed to elicit the fact that such a case has ever before been reported. That the bladder could be displaced upward to within one inch of the umbilicus and firmly held in that position for over one year does not seem credible, but the history I am about to give you will, I am quite sure, convince you that such has been the case.

November 15, 1897, I was called to see Mrs. G. P——, who gave the following history: The patient, aged thirty years, had enjoyed good health until October 10, 1896, when she was thrown from a carriage upon a railroad track, striking her back across the rail, and a woman weighing over two hundred pounds fell upon her, striking with her knees over the lower part of the patient's abdomen. This accident rendered her unconscious for two hours, after which she was placed in a carriage and driven fifteen miles to her home. Excessive flowing from the vagina took place during the journey homeward, but soon ceased after she was placed in bed. The next morning she noticed her abdomen to be nearly as large as a full-term pregnancy and very firm, and the slightest motion or jar would cause her severe pain. But after two weeks' rest in bed the pain and soreness diminished some and she assumed her household duties again. Painful urination and shooting pains through the pelvis, especially in the back, were the only symptoms complained of until March, 1897, when an excessive diarrhœa set in; the stools were very black and very fetid. Some days as many as twelve stools were passed, with a pint or more of thin, black, fetid discharge in each. In spite of cathartics and various other remedies prescribed to stop this diarrhœa, it continued for one month and then ceased of its own accord. Severe chills and fever followed, and the patient was again compelled to take to her bed. About the middle of April a second diarrhœa set in, but this one was described to be different from the first; the stools presented a light appearance, and the woman's physician assigned typhoid as the cause. Her condition then improved, and after a few weeks she was advised to go to the country. But she was no sooner there than her fever and chills returned and she was compelled to come home again. This condition continued from April to the date of my visit, November, 1897, at which time she complained principally of her bladder. She said that from the time her abdomen began to diminish in size, which was at the beginning of her diarrhœa in March, this difficulty in voiding urine had constantly increased, until it was so severe that she was compelled to resort to morphine for relief. At that time in order to void urine it was necessary to take a deep breath and bear down as she would in childbirth, and as soon as she stopped bearing down the urine would stop flowing. After she had expelled all the urine possible from her bladder, there would still remain a sensation of more being present, so she had a constant desire to urinate. She was also troubled with a dragging pain in the centre of the abdomen after voiding urine. This would vary according to the amount passed. When a large amount was passed it would be so severe that she would have to take an opiate for relief. As the abdominal walls were very thick and firm, examination was unsatisfactory, the only fact elicited thereby being that there were in the urethra no obstructions to the outflow of urine and that the pelvic contents were firmly fixed by a mass of adhesions. She was taking morphine steadily; her bowels were constipated, the urine was heavily loaded with mucus and phosphates, and she was in an extreme lithæmic condition. Consequently I ordered the morphine stopped, rest in bed, milk diet, lithia, saline cathartics, and hot applications over the abdomen for relief of the pain.

After this plan of treatment had been carried out faithfully for two weeks and my patient's discomfort instead of diminishing had continued to increase, I advised an operation as the only hope of relief. This advice being accepted, December 1, 1897, at the City Hospital, after the usual preliminaries and with the assistance of Drs. Farnham, Quackenbush, and Seymour, laparotomy was performed. The abdomen being opened, the bladder was found displaced upward, between the peritoneum and abdominal walls, to within one inch of the umbilicus, and firmly adherent to the abdominal parietes in front and to the peritoneum over the summit, sides, and posterior surface. The bladder was elongated and suspended in such a manner that it was impossible for it to empty itself, and, although the patient voided urine at the beginning of the anæsthesia, after the adhesions were separated over one pint was drawn off with the catheter. The pelvic organs were massed together by firm adhesions, some of which around the fundus of the uterus were separated, after which the operation was completed in the usual manner. The progress made by my patient after the operation was very satisfactory up to the middle of the fifth day, when, following a severe chill, her temperature rose in six hours from 99° to 103° F., pulse from 88 to 155, and trouble seemed to be at hand. But the administration of a laxative caused the passing of three fetid stools, after which the temperature and pulse gradually returned to normal and she made an uneventful recovery. During the first two weeks after the operation there was some burning sensation during the passage of urine; but that has now entirely disappeared and her bladder acts in a normal manner.

The history I have given describes the natural course taken by a large pelvic hæmatocele which has been evacuated by perforation into the rectum. The most interesting points in the case are the spontaneous evacuation of the large hæmatocele without causing death and the displaced position the bladder was left in. Perforation into the rectum may be followed by death from exhaustion or from infection caused by entrance of fæcal matter.

The only way I am able to explain this displacement of the bladder is that this large hæmatocele, by pressing upon the urethra, formed an obstruction to the outflow of urine; and as a result the bladder became overdistended, the summit rising up to the umbilicus, and, it being held in that position for some time, the accompanying peritonitis caused the adhesions which held the bladder suspended, when in March, five months later, the obstruction was removed by spontaneous evacuation of the hæmatocele. Operation in this case has been followed by the most happy results. In fact, it has saved my patient from the morphine habit, and changed her condition from one of intense suffering to one of comfort.

[1] Read before the Broome County Medical Society, January 4, 1898.

Therapeutic Hints.

Baths in Typhoid.—The good effects of the baths are: 1, the reduction of the fever; 2, the intellect becomes clearer, the stupor lessens, and the muscular twitchings disappear; 3, a general tonic action, particularly on the heart; 4, insomnia is lessened, the patient usually falling asleep for two or three hours after each bath; and 5, most important of all, the mortality is, under this plan of treatment, reduced to a minimum.—Osler.

Hemorrhage from the Bowel.—

R Liq. ferri sesquichlor	1.5
Aq. melissæ	150
Syr. cort. aurant	20

S. One to two teaspoonfuls every two hours.

—Bamberger.

Ichthyol in Conjunctivitis.—

R Ichthyol	50 gm.
Distilled water	50 "

Or a more dilute solution:

R Ichthyol	30 gm.
Distilled water	70 "

Apply to conjunctiva with a brush, and perform slight massage with the pulp of the little finger for a few moments.—*Pediatrics.*

Hydronephrosis.—

R Liq. potassæ	ʒ ij.
Ol. santali flav	ʒ ij.
Aq. cinnamomi	ad ʒ viij.

M. S. ʒ i. t.i.d.

—Saundby.

Itching in Urticaria.—

R Cocain. muriat	1
Chloral	0.6
Aq. laurocerasi	6
Aq. dest	50

S. Apply.

—Holz.

Stuttering.—Let the patient repeat sentences, drawling the vowels and pronouncing the consonants sharply but distinctly, maintaining the conversational tone throughout without rhythm, and avoid the singing tone. When the patient finds himself thus speaking several sentences fluently at the first sitting, the psychic stimulus is pronounced. The method can be aplied to quite young subjects.—Liebmann.

Eczema Palmare and Plantare.—This condition when chronic is very obstinate. After softening of the thickened epidermis with starch-jelly poultices in which boric acid has been incorporated, changed every four or six hours, the skin being rubbed briskly between times with a rough, soft, dry cloth, the following is to be rubbed in sparingly each day:

R Acidi pyrogallici oxidati	gr. v.–xxx.
Lanolini	ʒ ss.
Ol. amygdalæ,	
Aq. destillatæ	āā ʒ ij.

M.

—W. Allan Jamieson.

Carbolic-Acid Poisoning.—Wash out the stomach with equal parts of vinegar and water; strychnine hypodermatically.—A. Paget Steavenson.

Insomnia.—

R Paraldehyde	2 gm.
Tinct. vanillæ	20 gtt.
Syr. laurocerasi	30 gm.
Aq. tiliæ	70 gm.

M. S. Two or three soupspoonfuls.

Polyneuritis of Acute Articular Rheumatism.—

R Sodii salicylat	5 gm.
Potass. iodid	1–2 "
Aq.	200 "

To be taken during the day in tablespoonful doses.

—Steiner.

Coryza.—

R Cocain. muriat.,	
Morphin. muriat	āā 0.25
Salol	4
Acidi boracici pulv	12

Or:

R Sodii biborat. pulv	10
Thymol. crystall	1
Cocain. muriat	0.20

Or:

R Sodii bicarbonat.,	
Salol	āā 6

S. Use as a snuff.

—*Allgemeine medicinische Central-Zeitung*, No. 17, 1898.

Cystitis and Urine Infection.—Dr. Max Melchior, in his book on "Cystitis and Urine Infection," reaches the following conclusions: 1. Every cystitis is due to microbes, with the exception of rare poisoning with chemical substances. 2. In general, we find in the urine of cystitis a pure culture of a single species, generally in very large amounts. 3. The bacillus which is found most frequently in cystitis is identical with a very common intestinal parasite, the bacterium coli commune; it is pyogenic and infectious, and of varying virulence. 4. In the urethra, the male prepuce, and the vagina, pathogenic bacteria are frequently found—bacteria which when conveyed into the urinary bladder can give rise to a cystitis. 5. The microbe itself does not give rise to cystitis; still there is a bacterium—proteus of Hauser—which by simply entering the urinary bladder may give rise to a cystitis. 6. The microbes can produce a cystitis only when the urinary bladder, on account of the influence of various predisposing circumstances, especially retention or trauma, is made susceptible to the infection. 7. Retention of urine, as well as trauma pure and simple, is incapable of producing a cystitis. The microbe is always the deciding cause. 8. The varying nature of the cystitis depends upon preexisting lesions and upon the character of the substrata in connection with the various peculiarities of the bacterium, among which the virulence must be rendered prominent. 9. In every cystitis the urine contains pus cells, but in very varying amount; the existence of a catarrhal cystitis is to be looked upon as doubtful. Even non-pyogenic microbes may cause a suppuration of the urinary bladder. 10. The ammonuria may be a necessary condition for the occurrence of a cystitis; most frequently, however, it is but a subordinate phenomenon which appears in the course of cystitis or remains away altogether. The majority of cystitis-cases are acid. 11. Besides tubercle bacilli, an acid cystitis may depend upon the bacterium coli commune, the streptococcus pyogenes, and on rare micro-organisms (gonococcus of Neisser, bacillus typhi abdominalis). If the sterile urine does not produce any culture upon the ordinary media, the great probability is that a tuberculous cystitis exists. 12. There exists a real gonorrhœal cystitis, caused by the gonococcus of Neisser. 13. The urinary fever is partly due to transmission of the urinary microbes into the blood, partly—and certainly more frequently—to an absorption of the soluble toxins which occur in the urine. 14. To prevent a cystitis, we must not only be certain of a thorough asepsis of the urethral orifice, but we must also irrigate the urethra with boric-acid solution. 15. In the local treatment of cystitis nitrate of silver is the sovereign remedy.

Excessive Treatment in Disorders of Infants.—Professor Neumann, of Berlin, gives the following warnings: 1. Do not bathe the infant and thus remove the vernix caseosa, which is itself aseptic. The first bath should be given after the navel wound has healed. 2. Avoid too much cleansing of the mouth of the infant by rubbing and scrubbing it out. 3. Refrain from scarifying the gums with the idea that dentition is a pathologic process.—*Medical Council.*

Vomiting Following in the Course of Intestinal Affections.—

℞ Menthol..... 0.50 cgm.
Cognac..... 40 gm.
Tincture of opium..... 10 gm.
M. S. Take twenty drops several times daily.

—Peck.

The Maximum Dose for Children of Various Drugs in the Form of Suppositories.—It is often the case in children that the digestive tract is so irritable that all medication is rejected, while the stronger drugs frequently call forth vomiting and diarrhœa, and thus fail to produce the desired effect. Force is sometimes required for children who refuse to take medicine, and the resulting excitation is harmful; on the other hand, suppositories may be introduced into the rectum unknown to the child. The absorption per rectum is complete, but is altered by various conditions; the process is slower than stomach or intestinal absorption. We can therefore always begin with the same dose as is prescribed per os, and this dose may be increased after the tolerance of the child is ascertained. The drug should be thoroughly incorporated in the suppository to insure gradual absorption. *Der Kinder-Arzt*, 1897, gives the maximum dose of the following drugs in suppository form: Opium: of this powder, 1 mgm. for each year of the child's age; this dose may be repeated in severe cases every two hours; watch carefully for toxic symptoms (narcosis, myosis). Aconite must be employed in large doses in children to produce its effects; to test the susceptibility, give 1–2 drops of the tincture up to 10–12 drops in twenty-four hours for each year of age. Belladonna: for each two years of age 1 cgm. of the extract may be used in twenty-four hours, this quantity to be divided into four suppositories. Digitalis: as the powder is very slow of absorption, the tincture should be employed in maximum dose of 4 drops for each two years, divided into two suppositories. Caffeine may be combined with equal parts of benzoate of sodium, and given in two suppositories of 1 cgm. for each year of age. Quinine is best given in suppository form, the daily dose not to exceed 15–20 cgm. for each year of age; it should be divided in two parts. Antipyrin same dose as of quinine. Salicylic acid, 50 cgm. for each year, in three or four doses. Nux vomica, 1 cgm. for every two years, in three suppositories; children over ten years of age should first receive strychnine. Mercury must be employed in exceptional cases only, and then only in the form of calomel, of which use 5 cgm. in one suppository for each year. Iodine and the iodides are splendidly borne by the rectum, and absorption is complete; 20 cgm. for each year, in two parts, is the maximum dose; 5 cgm. when administered for a long period. Bromides, same dose as of the iodides, except in cases of severe spasm, as in stridulous laryngismus, when 1 gm. for each year should be given in two doses following closely upon one another.

Bronchitis.—

℞ Creosot..... 8
Sapon. amygdal..... q.s.
Ft. pil. No. 80. S. 8–10 pills daily.

—Lyon.

Treatment of Catarrh of the Eustachian Tube and Middle Ear.—Dr. Tschouprina (*Revue de Thérapeutique*, January 1, 1898) reports two rebellious cases of catarrh of the middle ear, in which considerable relief was obtained by intratympanic injections of bicarbonate of sodium and chloride of sodium. The author adds that this treatment gives good results after insufflation has failed. He employs a lukewarm solution of a mixture of equal parts of these ingredients, injecting every day from fifty centigrams to one gram of the solution. He uses a Pravaz syringe fitted with an ordinary auricular catheter introduced into the Eustachian tube.

Alcoholic Anuria Treated by Artificial Serum.—Dr. Dumont (*Le Scalpel*, January 2, 1898) reports the case of an alcoholic individual who was suddenly seized with suppression of urine. This patient was very stout and it was difficult to outline the bladder by palpation and percussion. At the time that the author first saw the patient he had not urinated for twenty-four hours. He had taken great quantities of diet drinks of the diuretic class; his temperature was normal and his pulse very rapid. He passed, at long intervals, a few drops of albuminous urine. The following day his condition remained the same. A sound introduced into the bladder removed only a few drops of urine. The following day his general state became bad; pulse, 140. The evening of the second day the anuria persisted, in spite of large doses of theobromine. The situation became grave, and Dr. Dumont, basing his act on knowing the good effects of artificial serum in cases of uræmic eclampsia, prepared a sterilized solution of salt water. A litre was injected at three different places—the pectoral, abdominal, and axillary regions—at the same time. On the following day the patient was completely transformed. A half-hour after the injection he had a sudden evacuation of gas and he commenced to urinate. At the end of the first day the quantity had reached three litres and the albumin had disappeared.

Rheumatism.—

℞ Sodium salicylate..... gr. xc.–cxx.
Syr. of bitter orange peel..... ʒij.
Distilled water..... ʒij.
Curaçoa..... ʒi.
M. S. This amount to be taken in the twenty-four hours in carbonated water.

—Bricemoret.

Tænifuge.—

℞ Amorphous filicic acid..... gr. vi.
Ethereal oil of male fern..... gr. ix.
Essence of cinnamon..... gtt. x.
Gum arabic..... ʒij.
Distilled water..... ʒiij.
Simple syrup..... ʒiss.
M. S. One-half to be taken in the morning on an empty stomach, and the remainder half an hour later. If no effect is produced within an hour or two, castor oil should be given.

—Van Aubel.

Pulmonary Phthisis.—

℞ Ichthyolate of ammonium..... 10 gm.
Alcohol (65 per cent.)..... 20 "
M. S. Thirty drops in a wineglass of water two or three times a day; increase by two drops until 150 drops are taken daily.

—Branthonne, *La France Méd.*, November 12, 1897.

Favus.—

℞ Chrysarobin..... 5 gm.
Ichthyol..... 5 "
Acid. salicylic..... 2 "
Adipis..... 30 "
Vaseline..... 60 "
M. S. Apply.

—Unna, *Deutsche Medizinal-Zeitung*, November 11, 1897.

Sycosis.—

℞ Gray oil ..... 20 gm.
Zinc oxide ..... 7 "
Starch ..... 7 "
Vaseline ..... 14 "
Ichthyol ..... 1 "
Salicylic acid ..... 1.20 gm.

—Brocq.

Amenorrhœa.—

℞ Peptonate of iron ..... 2 gm.
Lactate of manganese ..... 2 gm.
Scammony ..... 2 gm.
Strychnine sulphate ..... 0.05 cgm.

M. et div. in pil. No. lx. S. Two to four each evening on retiring.

—Lutaud.

For Chapping.—

℞ Salol ..... 2 gm.
Alcoholis purif ..... 80 gm.
Glycerin ..... 35 gm.
Aq. rosæ ..... 30 gm.
Tr. mosch ..... 2 gtt.

M. S. Apply.

—Lutaud, *Le Scalpel*, January 2, 1898.

For Chilblains.—

℞ Ichthyol ..... 1 gm.
Resorcin ..... 1 "
Acid. tannic ..... 1 "
Aquæ ..... 5 "

M. S. Paint the parts.

Or:

℞ Resorcin ..... 2 gm.
Talci ..... 1 "
Mucil. acaciæ ..... 4 "
Aquæ ..... 4 "

M. S. Apply.

—Boeck, *Le Scalpel*, January 2, 1898.

Acne.—

℞ Hydrarg. protoiodid ..... gr. v.–xv.
Hydrarg. ammon ..... gr. x.–xxx.
Ungt. simplicis ..... ℥ i.

M. S. Externally.

—Duhring.

Or:

℞ Beta naphthol 10
Sulph. precip 50
Vaseline,
Sapo. viridis ..... āā 25

M. S. Externally.

—Lassar.

Or:

℞ Calcis ..... ℥ ss.
Sulph. sublim ..... ℥ i.
Aquæ dest ..... ℥ x.

Cook to ℥ vi. and filter.

—Vleminckx.

Or, "lotio alba":

℞ Potass. sulphidi,
Zinci sulphat ..... āā ℥ i.
Aquæ rosæ ..... ℥ iv.

M. S. Externally.

Hebra's Corn Remedy.—

℞ Acid. salicylici ..... gr. xv.
Ext. cannabis indicæ ..... gr. viij.
Alcoholis ..... ♏ xv.
Ætheris ..... ♏ xl.
Collodii flex ..... ♏ lxxv.

M. S. Paint on thrice daily for one week; then soak the foot in hot water and pick out the corn.

Hiccough.—

℞ Potass. cyanid 0.05
Syr. morphin.,
Syr. flor. aurant ..... āā 75

M. S. Teaspoonful every hour.

—Robin, *Semaine Médicale*, February 16th.

Erysipelas.—Alcoholic solution of bichloride of mercury (one-half to one per cent.) painted over the surface.—Voskressenesky, *Nouvelles Remèdes*, January 24th.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

TREATMENT OF CHRONIC BRIGHT'S DISEASE—ROYAL ARMY MEDICAL CORPS—CONVICTION OF COLLINS—LUNACY LAW—"PHOSSY JAW"—UNIVERSITY FOR BIRMINGHAM—BEQUESTS TO CHARITIES—DEATHS.

London, July 8, 1898.

The treatment of chronic Bright's disease was discussed last week at a meeting of the Medico-Chirurgical Society, apropos of a paper by Dr. Ewart, who found the usual methods of dealing with tubal nephritis unsatisfactory, as they do not cure the disease and often fail to relieve the symptoms. On the other hand, the spontaneous recovery of some cases after long periods of ineffectual treatment indicates that the lesions are not necessarily fatally destructive of the renal structure. The cases on which Dr. Ewart founded a proposal for a departure from the usual treatment were of strictly uncomplicated tubal nephritis, which leaves no permanent lesion behind and may be regarded as an inveterate epithelial catarrh. In other varieties this catarrh is only one of the features, and in them the prognosis and treatment are less hopeful.

The features of tubal nephritis are dropsy, anæmia, oliguria, and cachexia, the last disguised by persistent œdema and paving the way to complications or exhaustion. The treatment proposed by Dr. Ewart is directed against the dropsy, which, although it is nature's protection against fatal intoxication, is also a danger; for the œdema oppresses the tissues, chokes the lymphatics, and impedes metabolism—thus hindering nutrition, both local and general. The impeded nutrition of the kidney is aggravated by the absence of a free lymphatic flow, and thus the tubal nephritis becomes a lymphatic disease, and treatment should be directed accordingly. Dr. Ewart's plan is to unblock the lymphatics, to establish a flow into them from the blood so as to remove solid and toxic products, and to quicken artificially the lymphatic circulation. When œdema is general or localized elsewhere, he would bring it to the feet by slanting the bed and giving it exit by Southey's tubes or even by small incisions when they could be made into dilated lymphatics—preferably at the back of the ankle. Antiseptic measures must precede the operation and be kept up by dressings. The skin of the whole foot should be covered with vaseline to prevent soakage. In one case drainage had been kept up for two months. A liberal diet can be adopted during the drainage, though sometimes it may be advisable to return to milk diet for a few days, which tends to promote the flow if there is a tendency for it to dry up. One object of this plan is to restore cardiac energy and nutrition, after which drug treatment might afford better results. Though this plan was devised for dropsy, it may be useful in other cases. In uræmia without dropsy it might supplant venesection. In one case not admitting severe measures Dr. Ewart established an artificial œdema by pressure with the tourniquet and a Martin bandage, and kept up a flow from a single incision for seven days.

Dr. H. Dickenson, without denying the part of the lymphatics, held that the tubes were the most important channels of excretion, as shown by the casts and epithelial débris, often so abundant as to form a deposit visible to the naked eye. Drainage was an old practice, discredited by causing erysipelas or septic cellulitis, but now attended with very little risk under strict Listerian precautions. He thought the relief to the uræmic process must be very slight and that there was some tendency to recovery in all cases, and that

this usually manifested itself contemporaneously with hypertrophy of the left ventricle.

Dr. Norman Moore said it was rare to examine post mortem cases of renal disease, except acute ones, without finding degenerative processes in the heart wall. There was a great difference in the two sexes. Dr. Moore estimated a woman's expectation of life in this disease as three times that of a man, which he attributed to the different ways of life, and suggested that a convalescent man should not attempt active exercise but adopt a mode of life like that of women engaged in domestic duties.

Sir Dyce Duckworth took a less gloomy view of prognosis than Dr. Ewart, and relied on warmth, diuretics, and tonics without restricting his patient to milk diet; but free incisions often gave great relief. The prognosis was worst in strumous persons.

Dr. Ewart in reply insisted that the removal of the dropsy was only a preliminary to feeding up the patient and improving the general condition, which could not be done while all the cells of his body were sodden from the œdema. He could not see how ventricular hypertrophy being associated with fibrosis of the kidney would leave the patient better off. In fact, that hypertrophy seemed to him a very undesirable accompaniment.

The Queen having approved the new warrant constituting the royal army medical corps, it is published in the army orders for this month.

The fashionable abortionist Collins has at length met his doom—seven years' penal servitude. He has had some narrow escapes before and was once convicted of forgery, but in some mysterious manner was not punished. The case is notorious, and no doubt you have heard of it. He had been struck off the "Register" but carried on practice up to now with impunity. He had occupied a good position, held good diplomas, and might, one would suppose, have done well had he not fallen into illegal ways. The trial raised important medico-legal questions.

The lunacy laws are strict and medical men should be well aware of the danger of infringing them. Yet every now and then there is a prosecution against a doctor for receiving into his house a lunatic without the necessary certificates; one has just been committed for trial on this charge, and he seems to have only himself to thank for this consequence of evading the law.

Infringement of the wholesome hygienic laws we have deserve sharp penalties. Since the conviction of the match-making firm for concealing cases of "phossy jaw," attention has been directed to plumbism as equally important. There are other cases, too, which deserve the attention of the public and the legislature. In regard to the phosphorus case, the money penalty inflicted on the company would be a mere trifle out of its pockets, and it may be questioned whether more severe punishment should not be inflicted in such cases. I am sorry to notice that the medical officer of the company omitted to report the cases. The omission cannot be defended, and I hope no other practitioner will thus act as a shield to firms engaged in dangerous trades. The profession has a clean record in such matters, and it is most vexatious to have it broken.

Birmingham desires to have a fully equipped university for the Midlands. With Mr. Chamberlain as one of her representatives and so important a member of the cabinet, she should have no difficulty in obtaining a charter or an act, if her rich manufacturers hasten to provide funds adequate for the purpose.

Under the late Sir Robert Rawlinson's will, St. Thomas' Hospital will benefit to the extent of about £35,000. The late Mr. E. O. Bleackley left £500 to Owens College for a scholarship to be named after him, £500 to the Brighton Hospital, and £100 each to the Children's and the Lying-in hospitals and the dispensary at Brighton. The late Colonel Sylvester l'Amy bequeathed £5,000 to the Edinburgh Infirmary and a reversionary interest in a larger sum. The residue of his estate is to be shared by Guy's, St. Thomas', Charing Cross, the Consumption, Cancer, Queen Charlotte's, and some other hospitals. Altogether the amount he has left for charities will probably reach about £20,000. The late Miss Day, of Oxford, bequeathed £5,500 to Oxford and Portsmouth hospitals.

Henry Case, M.R.C.S., etc., lately medical superintendent of the Leavesden Asylum, died on the 28th ult., aged fifty-five years. Among other recent deaths are those of three surgeons-general—W. H. Adley, aged seventy years, F. M. Clifford, and J. C. Morice, aged sixty-one years, all of the Indian medical service; also those of Surgeon-Lieut.-Col. B. W. Fowler, A.M.S., Brigade-Surgeon-Lieut.-Col. W. A. Barren, I.M.S.

"APOMORPHINE AND ITS USES."

To the Editor of the Medical Record.

Sir: The issue of the Medical Record of July 2d contains a very interesting article from Dr. Visanska, on "Apomorphine and its Uses." He gives apomorphine quite an extended range of therapeutic value, but fails to mention the condition in which, in my practice, it has given the most valuable results.

I refer to hysteria. Apomorphine here is the remedy *par excellence*. It may almost be classed as a specific in the acute hysterical conditions. There are few clinical pictures which present such wonderful and sudden contrasts as that of a patient with teeth clenched, muscles rigid, with opisthotonos, or throwing herself and her anxious attendants about, transformed in three or four minutes by one-tenth grain of apomorphine hypodermically into a docile, relaxed, limp, and vomiting individual, her pride and alleged pains gone together, and a restful sleep in store for her after the emesis is over. I have never seen any unpleasant complication resulting from the use of this remedy, though I have depended almost solely on it for six years and have used it in several cases in which pregnancy coexisted. Instead of a hypodermic, a dose of from one-tenth to one-fifth grain may be given by the mouth, and a satisfactory though less prompt result will be obtained. I regard apomorphine as by far the most prompt, reliable, and, both to the patient and to the physician, satisfactory drug in the treatment of this condition, of which I have any knowledge.

F. J. Campbell, Ph.M., M.D.

Fargo, N. Dak.

To the Editor of the Medical Record.

Sir: Two noteworthy papers have recently appeared on the therapeutic value of apomorphine—one by Dr. Robert H. Babcock (*Medico-Surgical Bulletin*, June 10th), the other by Dr. Samuel S. Visanska (Medical Record, July 2d). Both writers, after ample experiment and trial, agree to the superior merit of this drug in conditions and circumstances under which innumerable other drugs are less advantageously employed. Their emphatic recommendation to widen the application of this effective remedy under appropriate circumstances could be taken as an expression of sincerity based on unbiassed conviction. Aside from the emetic quality of apomorphine, which surpasses every other known emetic in rapidity of action and absence of gastric disturbance, its sphere of usefulness is pre-eminent in diseases of the respiratory organs, acute or chronic. No one who has observed the

action of the alkaloid in those diseases can fail to indorse the claims set forth by the two writers. Given in small doses by mouth, it neither nauseates nor depresses. In infants and children, among whom my experience with this remedy is largest, apomorphine not only produces the desired expectorant effect, but distinctly calms excitement, allays restlessness, and encourages quiet, refreshing sleep. I have seen these effects so often that I have learned to anticipate and count on them. No other drug of that class is possessed of such valuable properties.

The object of this letter is not only to emphasize that which was so well and convincingly put forth by the above-mentioned authors, but to direct attention to an additional and much-neglected use of apomorphine. I refer to its great value in whooping-cough. It does not remove the cause, nor does it shorten the duration of the disease—none of the vaunted remedies does; but it palliates most of the distressing symptoms, such as the frequency and severity of the paroxysms; it induces better rest at night, and, paradoxical as it may seem, it overcomes in some instances the tendency and inclination to vomit. The two remedies which are conspicuous to-day in the treatment of whooping-cough are belladonna and quinine; but the belladonna, in order that it may do good, must be pushed to the point of tolerance, which is practically equivalent to the degree of poisoning; and quinine is possessed of that horribly bitter taste which is objected to by adults and dreaded by the young, to say nothing of cinchonism and gastric irritation which will surely result from its long use.

Apomorphine is free from all these bad features. There is no need of watching the child's pupils; no need of calling in all the neighbors to hold the struggling victim while the bitter potion is poured in its mouth or while the suppository is forced into the rectum. Apomorphine avoids all that.

A good working formula is that which is employed by Dr. James T. Whittaker (Hare's "System of Practical Therapeutics," vol. ii., p. 546) in his treatment of acute bronchitis:

℞ Apomorphinæ hydrochloratis..... gr. ss.–i.
Acidi hydrochlorici diluti..... gtt. x.
Syrupi..... ʒss.
Aquæ menthæ piperitæ..... ʒiss.
M. S. A half to one teaspoonful every two hours.

Next to sunshine and air, apomorphine with me is the staple remedy in whooping-cough, and, until the universal panacea arrives, I recommend it to my brethren as the very best on the long list of remedies for that dreaded disease of childhood—pertussis.

R. Abrahams, M.D.

156 Clinton Street.

NEEDLESS NOISES.

To the Editor of the Medical Record.

Sir: In regard to your timely editorials about street noises, the pertinent question suggests itself: Has not the Board of Health the power to suppress them? The distinct province of this board is to have supervision over the health of the community, and surely the various nuisances you complain of inflict as much damage on the individual—whether sick or well—as many of the diseases which the board of health pronounces contagious. A little more zeal in the direction indicated and less in the line of selling antitoxins would be acceptable to the community.

Egbert H. Grandin, M.D.

36 East Fifty-Eighth Street.

Passive motion after fractures should be postponed from eight to twenty-one days in children, and four weeks in adults.—N. Senn.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending July 23, 1898:

	Cases.	Deaths.
Tuberculosis	167	145
Typhoid fever	18	4
Scarlet fever	87	8
Measles	130	8
Diphtheria	150	19
Laryngeal diphtheria (croup)	7	3
Cerebro-spinal meningitis	0	9

Deaths of Old People.—The obituary list of the London *Times* for June 18th was a somewhat remarkable one. Two children eliminated therefrom, there are thirteen deaths recorded, with an aggregate of ten hundred and five years, or an average of over seventy-seven years; five out of the thirteen reaching eighty-two years.

Out-door and In-door Life.—The admitted advantage of an out-door life in many morbid conditions, and notably in consumption, seems to point to the conclusion that there is something definitely injurious in the in-door life which is now the common existence among civilized people. It is a striking and a startling thing that the mere removal of a patient into the open air should lower his fever, should remove his night sweats, and take away his hectic, and it is difficult to avoid the conclusion that, if these symptoms are removed by the purity of the air outside, they must have been largely caused by the impurity of the air within the house. Nor have we any right to assume that it is the consumptive only who suffers. Doubtless the healthy struggle against and overcome evil influences before which those who are tuberculous succumb, but that is not to say that in the struggle we do not suffer; and, indeed, the facts recently brought forward are sufficient to show that the stuffy life of warmth and comfort which civilized man now "enjoys" is bad for the health, even of the healthiest. We make our windows fit, we pad our doors, we shiver at a draught, we surround ourselves with woollen curtains, dusty carpets, and fluffy, luxurious upholstery. We breathe the same air over and over again, and then we wonder that we are not strong and vigorous. The fact is, we are daily using up the exuberant vitality with which nature has provided us in struggling against artificial conditions. How powerful for evil, how deteriorating these conditions are, are shown by the fact that their mere removal gives back to the consumptive that vitality which enables him to overcome the seeds of disease within him. Fresh air is not a thing to be taken in little doses once a day, but a thing to live on.—*The Hospital.*

Orrhotherapy of Anthrax.—Dr. Sclavo reports the results of seven cases of malignant pustule treated by him with injections of antianthracic serum, previously used with effect on animals. All seven of the patients made a good recovery, but since the disease is not necessarily fatal he considers that more ample statistics are requisite for a final judgment. He points out that in the case of animals the serum is far more active and efficacious when injected into a vein than subcutaneously.

Paper Teeth.—Dentists in Germany are using false teeth made of paper instead of porcelain or mineral composition. These paper teeth are said to be very satisfactory, as they do not break or chip, are not sen-

sitive to heat or cold, and are not susceptible to the moisture of the mouth, and from their peculiar composition are very cheap.

Consumption of Air.—It is computed that when at rest we consume 500 cubic inches of air a minute. If we walk at the rate of one mile an hour we use 800; two miles, 1,000; three miles, 1,600; four miles, 2,300. If we start out and run six miles an hour we consume 3,000 cubic inches of air during every minute of the time.

A Banana Diet in Typhoid Fever.—After a long experience with typhoid patients Dr. Ussery, of St. Louis, regards the banana as the best food for them. The banana is almost wholly absorbed by the stomach, easily digested, and very strengthening.

The Aseptic Influence of Cold.—An English journal says that it is highly probable that microbes do not exist in polar regions and at great elevations. Most probably all of them are killed by intense cold. It is for this reason that frozen meat can be preserved fresh for an indefinite time. The fossil mammoths which have been discovered in the banks of Siberian rivers, embedded in ice, are often quite undecomposed, and their flesh is eaten by dogs. Professor Tyndall experimented on the vitality of microbes by exposing solutions of sugar to the air on the higher summits of the Alps, where he found that fermentation did not take place, whereas at lower levels, where the temperature was higher, the liquids quickly became turbid, owing to the presence of microbes. Dr. Nansen furnishes a confirmation of the truth of the above statements. He informed the writer that as soon as his companions returned to Norway after their sojourn in the extreme north they all caught cold, but had been entirely free from this ailment during their prolonged absence. The inference is that reproduction of the catarrh microbe had been prevented in the severe cold of the polar region. That cold, while repressing activity, does not always kill pathogenic micro-organisms we know, since virulent typhoid bacilli have repeatedly been found in ice.

Health Reports.—The following statistics concerning small-pox, cholera, yellow fever, and plague have been received in the office of the supervising surgeon-general of the Marine Hospital service during the week ending July 23, 1898:

SMALL-POX—UNITED STATES.

Kentucky: Present in epidemic form in Clay, Jackson, and Laurel counties, southeastern part of State.

		Cases.	Deaths.
Pennsylvania, Dunbar	June 23d to July 22d	6	
Tennessee, Memphis	July 14th	1	
Negro settlement six miles from Memphis		1	

SMALL-POX—FOREIGN.

China, Hong Kong	May 14th to 21st	2	
Hong Kong	May 21st to 28th	1	
India, Calcutta	May 28th to June 4th	..	3
Calcutta	June 4th to 11th	..	2
Japan, Awamori Ken	June 6th to 15th	16	2
Fukushima Ken	June 6th to 15th	1	
Miyagi Ken	June 6th to 15th	4	
Shiga Ken	June 6th to 15th	1	
Totori Ken	June 6th to 15th	1	
Yamagata Ken	June 6th to 15th	2	
Yehime Ken	June 6th to 15th	1	
The Hokkaido	June 6th to 15th	1	
Russia, Moscow	June 18th to 25th	9	4
Odessa	June 18th to 25th	4	
St. Petersburg	June 18th to 25th	14	3
Warsaw	June 18th to 25th	..	7
Uruguay, Montevideo	June 4th to 11th	1	

CHOLERA.

India, Calcutta	May 28th to June 4th	..	7
Calcutta	June 4th to 11th	..	14
Madras	June 4th to 10th	..	1
Japan, Osaka and Hiogo	May 21st to 28th	1	
Osaka and Hiogo	May 28th to June 11th	1	1
Tokyo	June 6th to 15th	2	1

YELLOW FEVER.

Brazil, Rio de Janeiro	June 4th to 11th	29	19

PLAGUE.

India, Bombay	June 7th to 14th	..	26
Bombay	June 14th to 21st	..	15
Japan, Nagasaki	June 6th to 15th	1	1
Taiwan, Formosa	June 6th to 15th	115	62

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

TRANSACTIONS OF THE NEW YORK STATE MEDICAL ASSOCIATION. By Dr. E. D. Ferguson. Vol. XIV. 8vo, 646 pages.

THE EXTRA PHARMACOPŒIA. By W. Martindale, F.L.S., and W. W. Westcott, M.B. Ninth Edition. 16mo, 626 pages. H. K. Lewis, London. Price, 10s. 6d.

DISEASES OF THE SKIN. By Dr. J. C. Burnett. Third Edition. 12mo, 264 pages. Boericke & Tafel, Philadelphia. Price, $1.00 net.

NOTES ON MILITARY HYGIENE. By Dr. A. A. Woodhull, 12mo, 181 pages. John Wiley & Sons, New York.

MEDICAL DIAGNOSIS. By Dr. J. J. G. Brown. Fourth Edition. 8vo, 428 pages. Illustrated. P. Blakiston, Son & Co., Philadelphia. Price, $2.25 net.

DISEASES OF THE NERVOUS SYSTEM. By Dr. C. E. Beevor. 8vo, 432 pages. Illustrated. P. Blakiston, Son & Co., Philadelphia. Price $2.50.

DISEASES OF THE KIDNEYS. By Dr. Paul Fürbringer. Translated by Dr. W. H. Gilbert. Vol. II. 8vo, 310 pages. Illustrated. H. K. Lewis, London. Price, 10s. 6d.

THE BLOOD. By Dr. A. C. Coles. 8vo, 260 pages. Illustrated. J. & A. Churchill, London.

INFLAMMATION OF THE BLADDER. By C. M. Moullin. 8vo, 156 pages. P. Blakiston, Son & Co., Philadelphia. Price, $1.50 net.

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Original Articles.

YELLOW FEVER OF THE TROPICS.

By WOLFRED NELSON, C.M., M.D., F.R.G.S.,
NEW YORK.

In the following article, embracing an experience of eight years in the tropics, I shall deal with yellow fever as I knew it at Colon and Panama on the Isthmus of Panama, at Mazatlan on the west coast of Mexico, and at Havana and Santiago de Cuba. No attempt will be made to enter into any minute classification of the disease. Some writers have divided it and subdivided it, to the great and lasting perplexity of many to whom the disease is a new one.

In its every-day conditions in the centres named, it will be found as mild, severe, and malignant yellow fever.

In what follows I have in mind, as a general statement, the new comers within the tropics—men, as a class, from temperate and northern climates, a class particularly susceptible to yellow fever.

Mild Yellow Fever.—The cases under this heading present the following characteristics: Flushed face, well-marked frontal headache, some pain in small of back, general malaise, restlessness, a history of constipation. Man a new comer. Pulse slow and hard, 70; temperature, 101°–102° F. Tongue furred. Urine high colored. In these the history of a chill may not be had. Nausea and vomiting in some cases. Many of them have become ill quite suddenly; previously quite well. On the second day a trace of albumin may be found in the urine. The following day it will have increased. In addition to the usual symptoms, albumin must be present or the case is not one of mild tropical yellow fever.

French writers term the above *fièvre d'acclimation*, or a fever of acclimation. Such it is, and the acclimation means a tissue change.

The mild yellow fever is a disease of a single paroxysm or access. Such attacks mean subsequent immunity from yellow fever.

Severe Yellow Fever.—In this class the clinical picture may be the same for the first day. Later the headache is more severe, frontal or occipito-frontal. Pulse full, hard, and slow for a fever, 70 to 80. Pain in the back, generally lumbar, often of an agonizing kind. Tongue furred; tip and edges often red at outset. The usual history of constipation, often extending from three to four or five days. Man a new comer. The red flush of the face is more marked. It is the well-marked boiled-lobster hue. Later the color extends to trunk and limbs. At outset the eyes may not furnish any information. The conjunctivæ may be quite clear. Later they become suffused, vessels congested. In them the yellow color first becomes discernible. That color of skin and conjunctivæ gives the disease its name. The heat of the skin is very peculiar; the hand when placed on the body tingles as if a gentle current of electricity were playing over its surface. This burning or biting heat has no counterpart in malarial fevers. In this class the history of a well-marked chill may be had, but not always. The duration and severity of the chill have a significance all their own to the physician. Persistent and severe chills, often half a day to a day in duration, mean troublesome and often fatal cases. In some patients the invasion may be very sudden, as by nausea or faintness, with no chill. Many of these are cases in which the nervous symptoms are marked throughout the case. High temperature, delirium, etc.

Symptoms of gastric disturbance set in early. Patient complains of his stomach, often of a burning sensation. Even at invasion, pressure over the pit of the stomach causes pain. The gastric symptoms increase. On the second or third day the vomiting becomes marked—first, a white fluid, called by Dr. Blair, of British Guiana, "white vomit." Any pressure over the stomach now causes intense pain. Urine first day or two high colored and excreted in fair quantity. Frequently on the second day a trace of albumin may be found in it. It must be present if the case is one of yellow fever. It is pathognomonic. Its appearance, *quoad* the symptoms given, constitutes a severe case of tropical yellow fever.

Temperature: In this form it runs up and keeps high—102°, 103°, 104° F. on the second or third day; this while the pulse is slow and hard. The vomiting is almost constant and most distressing; the stomach rejects everything. Constant restlessness. Pain in back often excruciating and indescribable.

The changes in the blood are rapid. Its disintegration has commenced. To detect the yellow color early—that of the skin—pressure is made by placing the hand on the chest; when suddenly withdrawn, the impress of palm and fingers is sharply mapped out in light canary yellow, while the surrounding skin is of its scarlet hue. This is another indication that the case is a severe one.

With the persistent elevation of temperature the general condition of the patient becomes worse. The injection of the conjunctivæ increases. Sordes form on teeth. The breath becomes fetid. Sore throat frequently is complained of, due to stripping of the mucous membrane of throat and mouth. Blood exudes and collects on teeth and lips. The odor of the breath becomes unbearable. This stripping of the mucous surface and exudation of blood are a symptom of bad omen.

The urine becomes scanty; the albumin increases steadily. In many cases the percentage got by boiling is very high. The percentage has a direct bearing on the case—as the life currents are destroyed the quantity of albumin increases. Such are the general symptoms in severe cases. It must be remembered that the symptoms do not appear in any fixed order. No arbitrary law can be made for such cases.

In cases in which the first or initial fever is merged into the "period of calm," the disease runs a course of three stages. The "period of calm," as it is termed, is reached on the fourth or fifth day. It is a mere remission. Temperature may fall two or three degrees. Pulse becomes softer. The patient is better, as far as a layman is concerned—the "period of calm," alas! is most deceptive. It may last twenty or thirty or more hours—when the "secondary fever" comes on. Soon,

in a few hours, it has reached the maximum temperature of the initial fever. Vomiting is renewed. There may be suppression of urine; if any urine may be had for testing, it is laden with albumin. Pulse, 70 to 80; respiration, 30 to 40. Hiccough. Vomiting again sets in, with all of its old violence. In some cases the patients seem dull and wholly indifferent; in other cases the nervous symptoms are marked, and delirium may cause much trouble. The patient frequently requires two or three attendants to keep him in his bed.

The majority die, but when one escapes the change frequently is initiated by a profound sweating. Later it is followed by some sleep. Temperature falls; pulse loses its wiry hardness; the hitherto inactive kidneys renew their function; a little highly albuminous urine is passed; the fever ceases. Convalescence is slow and very tedious.

Malignant Yellow Fever.—In the malignant cases patients die during the initial fever. While the symptoms in the severe form are grave, in the malignant cases they are intensified from the start. The patient is struck down by the intensity of the blood poison. Generally at the close of the second or third day the malignant nature of the case is quite clear to his medical attendant. Nothing checks the vomiting or eases pain—the temperature reaching 106° and 107° F. The latter was the maximum noted by me. Such patients die; the classic exception is lacking. Even when wholly unconscious, any pressure over the stomach—particularly if made just below the xiphoid appendix—will make the patient writhe.

In some of the severe and in all of the malignant cases the yellow tinge of the skin becomes marked before death closes the scene.

Black vomit and black-vomit stools are met in nearly all the fatal cases. A man may have a little black vomit and recover.

The blood has been destroyed. Dr. Girerd, formerly surgeon to the Panama Canal Company, devoted much time to a study of the blood in these cases. It was a mere fluid, having no red corpuscles—a fluid full of débris of corpuscles. Knowing and recognizing the necræmia or death of the blood, many phases of the clinical picture become clear to us.

Such, very briefly told, are the every-day cases of yellow fever in the tropics—mild, severe, and malignant.

At times a physician may have doubts as to the exact nature of the case that confronts him. Is it malaria in a new comer or is it yellow fever? Much invaluable time may be saved by making quinine and sulphate of sodium combined the diagnostic agent. My plan was simple—instant action to clear up the doubt. I gave fifteen grains of quinine with two drachms of sulphate of sodium every three hours until two or three doses had been given. If malaria, the joint action of quinine and sulphate of sodium cleared up the doubt; if not, then I knew that I had to deal with yellow fever.

The treatment of yellow fever as laid down in the text-books leaves much to be desired. There are so many remedies and suggestions that the whole constitutes a general confession that we are lamentably in the dark regarding this yellow foe of the tropics.

After a time I simply abandoned the text-books, as far as treatment was concerned. Consultations were in order, but the patients died. The consultations seemed to be for the safety of the attending physician.

When called to see a patient—a new arrival who had the symptoms described under the head of mild yellow fever—with a view of saving time I gave the quinine and sulphate of sodium. That combination of quinine, dilute sulphuric acid, sulphate of sodium, and water was a mixture of mine born of tropical experience. Recall the history of constipation. Few if any of the cases so treated proved to be malaria, but time in such cases frequently means a life and the doubt had been removed.

My method was a very simple one—one that can be used anywhere. The quinine mixture was given as stated. Next the patient was prepared for a vapor bath. The man was stripped and seated on a chair with a wooden seat. His feet were placed in a bucket of hot water, as hot as it could be borne without burning. A pint of hot lemonade was given him, or as much of it as he could drink. He was covered with blankets. A spirit lamp was lit and placed under the chair, of course under the blankets. They were used for confining the heat and moisture. Soon, very soon, perspiration would show itself; next to roll down face, arms, and body. In a few minutes the hot dry skin lost its angry scarlet hue, the pulse became softer, the headache less. General improvement followed—to the great relief of the patient and his friends. The vapor baths lasted ten or fifteen minutes. They never were pushed to faintness. The man was lifted *en masse* and put to bed and covered with blankets. Frequently he kept on perspiring freely for one or two hours.

If the skin again became dry and the pulse hard, the vapor bath was repeated once or twice if necessary. If the salts acted promptly, the general betterment was increased.

Next in order I gave him freely to drink of an acid mixture—any of the mineral acids largely diluted. It was a grateful mixture. By this very simple treatment two great and to me most important indications had been met—the loaded intestines had been emptied, the hot and burning skin had been forced to act and eliminate its secretions. In the majority of the cases the men had been eating heartily up to the time of sending for me, with constipation extending over several days.

By this treatment the patient had been placed in the best condition to fight the disease. Time, the essential thing in such cases, had been saved.

Mustard over the stomach to check the obstinate vomiting, small pieces of ice, water, and the acidulated water. In the severe and malignant cases patients had no desire for food or broth. Morphine was contraindicated by the condition of the kidneys. The symptoms had to be treated one by one.

In my experience a temperature of 105° F. and upward in many cases meant delirium, sometimes violent. In 1880 I introduced the ice pack in such cases—cloths placed on blocks of ice and applied to the body; they abstracted heat rapidly. No unfavorable results followed their use. When the temperature fell to 104.5° and 104° F., consciousness would return. In one case, despite the fact that the young man brought up a little "black vomit," he recovered. In another case, that of Dr. Allan, then port surgeon to the Pacific Mail Steamship Company at Panama, his temperature, despite the ice pack, rose to 107° F., when he died.

In this article I have not dwelt on the cases assuming a typhoid character. They are of the classic type—initial fever, period of calm, and secondary fever. The so-called typhoid symptoms develop anywhere from the ninth to the twelfth day. These are obstinate cases. Fortunately they are the exception to the rule.

In view of the blood changes and the many tissue changes dependent upon degenerative causes, convalescence is very tedious. Extreme care has to be exercised. Frequently the convalescents have a ravenous appetite. Errors in diet must be guarded against. A full meal of beefsteak killed a man in Panama; he had his own way, and it killed him.

Meat broths, milk, and soda water, etc., are ample until the stomach has recovered its tone. Time and great patience are very necessary. Weeks and sometimes months are necessary to rebuild.

To review the matter, the cases of mild yellow fever consisted of a single paroxysm or access. They entered on convalescence. Frequently even in mild cases convalescence was very slow.

Occasionally a severe case would expend itself in a single paroxysm, when the patient entered on convalescence.

The malignant cases were fatal.

Some of the severe cases ran through all the stages, and entered on convalescence anywhere from the ninth day to the twelfth day. I can only repeat my statements: there are no fixed rules in such cases, the order of symptoms is not regular—the case depending on the man and his previous health and habits. While many young men of excellent life and habits fell victims, occasionally one escaped, thanks to his having been abstemious. I recall recoveries in four desperate cases. All the patients had been in grave peril; one had black vomit. Practically they had been total abstainers.

The period of incubation in yellow fever is a vexed one. No cast-iron law covers it. Three to six days are ample. I knew of a case in which it was all of fifteen days.

The stranger within the tropics drifts into danger, without knowing it. In many of the places the fever is endemic—at Colon, Panama; at Vera Cruz and Mazatlan, in Mexico; at Havana and Santiago de Cuba; at San Juan de Porto Rico, and at Rio de Janeiro, Brazil.

The new comer enters on a new scene, where all is strange to him, including the atmospheric and other terrestrial conditions—excessive heat and excessive moisture, rapid growth in vegetable life and rapid decay; hence exhalations from the earth's surface. He may have lived a perfect life in a temperate or northern climate; when under his usual conditions his internal organs did their work well. The natural equipoise was maintained. Heat and moisture tax the new comer. Nature tries to adapt herself, but it means a serious tissue change. In the tropics his liver becomes rebellious. The hitherto nice balance of power within is upset. The liver has additional work to do.

Many thoughtlessly expose themselves to the hot midday tropical sun. Again, others expose themselves to the excessive tropical dews. Some use liquor and malt; others have a surfeit of delicious tropical fruits, matured on the trees and stalks. The matured fruit juices add to general stimulation. A fever of some kind is a mere question of time. If yellow fever is active at the time, generally it is yellow fever; or it may be a simple malarial fever, a bilious remittent, or a pernicious malarial fever. Malarial fever gives no protection, none. The fact must be borne in mind that healthy men and women are its principal victims.

An attack of yellow fever protects against subsequent attacks.

In all centres where the disease is endemic—such as Panama, Cuba, and Mexico—at certain seasons if the material is present, unacclimated people, epidemics are in order.

At Panama during the work on the Panama canal, some very interesting and instructive work was done by my brother, the late Dr. George W. Nelson. He was resident physician at the canal company's hospitals. He had sets of self-registering dry and wet bulb thermometers, as well as a self-registering barometer. Within the hospital grounds was the fever hospital. While yellow fever was epidemic, the thermometric and barometric tracings were carefully noted. A hot dry wave would be in order, when new cases of yellow fever would develop among the employees. The hot wave would end in rain, accompanied frequently by tropical thunder and lightning. The result was marked, both among the yellow-fever patients in the canal hospital and in the city of Panama. With the fall in temperature and general electric disturbance the severe cases ended fatally. The storm over, a few cooler days would follow, when there would be a lull; then another hot wave with new cases; again rain, more thunder and lightning, during which the serious cases again were fatal.

In another article I shall take up other facts connected with this disease.

A CHEMICAL, PHYSIOLOGICAL, AND CLINICAL STUDY OF PANCREATIC CYST FLUID (FROM THE CLINICAL LABORATORY OF THE UNIVERSITY OF MARYLAND).

By JOHN C. HEMMETER, M.D., Ph.D.,

CLINICAL PROFESSOR, MEDICAL DEPARTMENT, AND DIRECTOR OF THE CLINICAL LABORATORY,

AND

HARRY ADLER, A.B., M.D.,

INSTRUCTOR IN CLINICAL PATHOLOGY.

(With a clinical report of the case by L. M. Tiffany, M.D., Professor of Surgery.)

The pancreatic cyst fluid furnished by Professor Tiffany was shown to be perfectly sterile; cultures attempted on agar, peptone, gelatin, and bouillon were negative. The specific gravity of the liquid was 1.028. It had a chocolate color, and on standing a light gray deposit separated from the dark reddish-gray supernatant liquid. Total quantity received, 980 c.c. It had a neutral reaction.

The chemical and physiological studies were made by Dr. Hemmeter; the histological study was made by his associate, Dr. Harry Adler.

Experiments were made with artificial digestion of proteids, carbohydrates, and fats, and the effects on the curdling of milk and varying quantities of the pancreatic cyst fluid. In testing the digestive power for proteids, sterile blood fibrin and discs of boiled egg albumen were employed.

For testing the amylolytic power we employed freshly prepared sterile starch paste (one per cent.). In the experiments for determining whether the cyst fluid contained any fat splitting or adipolytic ferment (steapsin), we made use of weighed quantities of sterile neutral olive oil.

All of the quantitative digestion experiments were made under aseptic precautions, and test cultures were made from the digesting-mixtures before they were placed in the incubator and after they were removed from it.

The liquid was examined for sugar, albumin, peptone, bile acids, and xanthin bodies, prior to the digestion experiments.

Sugar was absent in the fermentation and reduction tests.

Bile acids were found to be absent.

Albumin, propeptone, peptone-globulin, etc. Fifty cubic centimetres of the fluid was rubbed with Na_2SO_4 in excess; a deposit of globulin resulted. The mixture was filtered. In the filtrate a deposit of albumin occurred on boiling with nitric acid, showing presence of albumin. Ten cubic centimetres of the liquid was acidified with acetic acid, boiled, freed from albumin, and filtered. In the filtrate the biuret reaction could be detected; this meant either propeptone, peptone, or both. Ten cubic centimetres of the fluid was rubbed up with excess of ammonium sulphate; freed from propeptone and albumin, the filtrate gave no biuret tests. This indicated that peptone was absent. Albumin, globulin, and propeptone were present; sugar and peptone were absent.

Xanthin bodies. Twenty cubic centimetres of cyst fluid freed from albumin was made alkaline by ammonia, and, after removal of the phosphates, treated with ammoniacal silver solution. No precipitate occurred; hence free xanthin bodies were absent. Latent xanthin bodies were found to be absent also.

Determination of Solid Residue.—December 20, 1897. Weight of evaporating-dish, 23.9346.

Ten cubic centimetres of pancreatic cyst fluid evaporated on water bath.

Weight of dish and evaporated fluid, 24.352.

Weight of evaporating-dish alone, 23.9346.

One cubic centimetre pancreatic cyst fluid contained 0.4174 mgm. solid residue. Dr. Adler found that the cyst fluid contained ten parts of albumin to the thousand, as determined by Brandberg's method.

According to Esbach's albuminometer, it contained almost eleven parts to the thousand. The presence of blood pigment was shown by the turpentine-guaiacol test and the finding of Teichmann's hæmin crystals on treating with salt and glacial acetic acid.

The conversion of proteid into peptone and of carbohydrates into maltose and dextrose, and also the breaking up of fats into fatty acids and glycerin, will occur under the influence of certain bacteria in the entire absence of unorganized ferments.

In a patient who had received an abdominal injury, having been so horned by a steer that the gastric juice, together with the bile, pancreatic juice, and succus entericus ran out through a fistula, Busch observed that coagulated albumin became dissolved when it was lowered into the intestine, inclosed in gauze bags, which could be withdrawn through the fistula at will by a thread.[1] In this patient there could not possibly have been any secretion in the digestive canal, so that the digestion of proteids can be attributed only to bacteria. In almost all of the experiments conducted by the other observers, cited in this article, no precautions were taken to have the digesting-mixtures sterile. The co-operation of the bacteria in the solution of proteid can therefore not be excluded in these cases. If we therefore desire to find out the digestive power of the pancreatic cyst fluid, *per se*, sterile digestive mixtures are indispensable. As will be seen later on, the cystic fluid presented by Professor Tiffany exhibited marked proteolytic, amylolytic, and adipolytic properties. Most of our digestive mixtures were kept sterile, but others were intentionally infected with pure cultures of the lactic-acid bacillus, the bacillus lactis aerogenes, the colon bacillus, and the bacillus of typhoid fever, and some were permitted to become infected in a general way by exposure to the air. These latter were found to be later on infected predominantly with staphylococci.

There is no doubt that widely differing conditions have been described and classed under the head of pancreatic cysts. According to Virchow, accumulations of liquid in the immediate vicinity of the pancreas, which originally were in no direct causative relation to pancreatic disease, have been classed erroneously as pancreatic cysts. In the surgical literature of the subject one finds almost exclusively reports concerning the simple cysts only; there are undoubtedly multiple cysts also. While the prevailing opinion is that these cysts are caused by stenosis of the duct of Wirsung, by cicatrices, calculi, or invasion of ascaris lumbricoides (Durante); furthermore, through neoplasms arising in the pancreas itself or in the adjacent organs; and while these were considered the only and most important cause of retention cysts—O. Madelung[2] maintains that this mode of causation is comparatively rare, a part of the cysts arising from inflammatory processes of the interstitial glandular tissue (abscesses and purulent cysts), another part from hemorrhages in consequence of traumatism (apoplectic cysts). A portion of the cysts arise through foci of softening in solid neoplasms, such as carcinoma and sarcoma. According to Garrigues, Petrykowski, and Roux, proliferating cysts or cyst adenomata of the pancreas may occur.

Concerning the Diagnosis.—The clinical picture and the position of the cyst, as well as its relation to the surrounding viscera, will depend upon the part of the gland from which it originates; the origin from the tail end of the pancreas appears to be the most frequent. The retroperitoneal cysts as they enlarge push into the bursa omentalis, and when they have filled this out force their way through the foramen of Winslow into the greater peritoneal cavity. The stomach lies above such cysts, the transverse colon and the mesocolon are below, and the gastrocolic ligament is in front of them. In rare instances the cyst grows more superiorly than anteriorly. In this instance the hepato-duodenal ligament is arched forward and the stomach is displaced downward (Riegner). When the cysts grow between the layers of the transverse colon and the mesocolon and the superior layer is arched forward, the transverse colon may be dislocated downward. Schoenborn has reported a case in which the transverse colon passed diagonally across the highest portion of the tumor. v. Hacker and Hersche have reported similar cases. Madelung asserts that pancreatic cysts which have exceeded a certain size and descended deep into the inferior peritoneal cavity, cannot be distinguished from ovarian cysts, except by laparotomy, and even then it is possible only during the extirpation. As important points for the diagnosis he gives the following: origin of the tumor in the superior portion of the abdominal cavity, colicky pains in the epigastrium or left hypochondrium, various intense dyspeptic symptoms, and characteristic state of the stools. Evidence of a cystic tumor in the region of the pancreas, the lower convex edge of which is palpable, and the greatest extent of which from above downward is found to be in the parasternal or mammillary line. From here the dimensions of the tumor suddenly diminish toward the left axillary line; the cyst can be outlined by the absence of tympanitic resonance on percussion. It shows a slight rising pulsation and slight respiratory mobility. Mellituria and stearrhœa as well as brown skin have been observed in rare cases.

Madelung attributes the diseased digestion not to impeded digestive activity through absence of pancreatic juice in the intestine, but to compression of the stomach and intestines; this is also his explanation for the rapid emaciation. In view of the fact that other abdominal tumors, of non-malignant type (pregnancy, etc.), may also compress the stomach and intestines considerably without causing this rapid emaciation, the writer (Hemmeter) is disposed to believe that the imperfect utilization of proteids, fats, and carbohydrates in cases of pancreatic cysts is due to the absence of pancreatic secretion from the duodenum.

Rate of Growth.—The time in which the present cyst developed could not be determined: the patient complained only three weeks. Some cysts reach the size of a man's head within a few weeks; others require a very long time. Riedel reports a case developed in nine years. Salzer, one requiring fifteen years; and Martin, one requiring more than thirty years before the growth assumed considerable dimensions. Some cysts have very thin and friable walls; Beckel, however, reported one having a wall one-half centimetre in thickness.

Capacity.—Riedel's case had a capacity of 10 litres; Bozeman, 11.5 litres; Park, 14 litres; Martin, 15

[1] Virchow's Archiv, Bd. 14. Also cited in Brücke's "Vorlesungen über Physiologie," Vienna, 1885, p. 352.

[2] Penzoldt and Stintzing: "Handbook," vol. iv., p. 212.

litres. In these large cysts the contents did not show the characteristics of normal pancreatic secretion. This may be attributable to the fact that in old cysts the ferments have either been destroyed or entered into combination with the albuminous and other digestible substances contained in the cystic contents.

Results of Examination by Puncture or Aspiration.—In reviewing the literature of the subject, one cannot fail to be impressed with the fact that the results of examination of fluid obtained by aspiration have not come up to expectations. In a majority of the cases the aspirated fluid did not show the proteolytic, amylolytic, and adipolytic properties of pancreatic juice. Senn and Kulenkampf obtained a fluid clear as water, which led them to suspect the presence of an echinococcus cyst; and Kotz obtained a liquid with marked bloody admixture, leading him to suspect an ovarian cyst.

It might be presumed that when a pancreatic cyst is tapped under strictly antiseptic precautions, no harm could ensue even if some of the fluid escaped into the peritoneum. This view was held by Senn, but the experiments of Hildebrand and Rosenbach-Jung have demonstrated that escape of pancreatic fluid into the peritoneal cavity may produce fat necrosis. Rosenthal, Cathcart, and Tremaine have reported cases in which the entrance of cystic fluid into the peritoneal cavity caused collapse and compelled a speedy laparotomy. Kuester and Kocher reported cases in which symptoms of peritonitis were produced, and in Socin's case death was attributed to entrance of the cyst fluid into the peritoneal cavity. As it is possible that the stomach or colon may be pushed between the pancreatic cyst and the abdominal walls, and that when adhesions exist between the cyst wall and the stomach it is impossible to determine to what extent the stomach may be in contact with the anterior abdominal wall even when the stomach is artificially distended, it is intelligible how the trocar may be pushed through the stomach or intestines in the efforts to reach the cyst. In Dixon's case the cyst refilled exceedingly rapidly after it had been evacuated by puncture, and several punctures did not produce a cure in Steele's case.

It cannot be the object to consider the treatment in connection with this study. The treatment, which is mainly surgical, will be found described in the new text-books on abdominal surgery.[1]

One of the most marked and constant symptoms is rapid emaciation. Küster reported a case in which there occurred a loss of fifteen kilograms, or thirty-three pounds, in four months. Leube holds that colicky pains in the gastric region do not occur in connection with other cystic tumors in the upper portion of the abdomen.

The diagnosis must exclude echinococcus cysts of various abdominal organs, dilated gall bladder, hydronephrosis, and ovarian cysts. As far as could be determined from the literature, a positive diagnosis of pancreatic cyst in women has never been arrived at. Diastase is found in all the fluids of tissues; hence this has no diagnostic significance. The following table[2] illustrates the diminution in the solids, organic substances, and ashes which occurs in the fluid discharge from a permanent pancreatic fistula. The juice from a temporary fistula is much richer in these constituents.

Juices from Temporary Fistula.			Permanent Fistula.		
Water	900.8	884.4	976.8	979.9	984.6
Solids	99.2	115.6	23.2	20.1	15.4
Organic substances	90.4	....	16.4	12.4	9.2
Ashes	8.8	....	6.8	7.5	6.1

[1] See Hemmeter: "Diseases of the Stomach," p. 536.

[2] C. Schmidt, nach Maly: "Chemie d. Verdauungssäfte." Hermann's "Handbuch," Bd. v., Theil 2, S. 189.

Christ. Dieckhoff[1] distinguishes between (1) retention and (2) proliferation cysts; of the latter only one typical case has been reported.

Tilger[2] stamps the so-called hemorrhagic cysts as "theoretical assumptions."

Nimier[3] believes that pancreatic cysts may arise from hæmatoma, in which a simultaneous tear has occurred into the duct.

As a result of experiments upon animals, Senn has been led to the opinion that a damming back of the pancreatic secretion, with consequent formation of a retention cyst, is possible only when, in addition to closure of the excretory duct, there is at the same time an alteration in the glandular tissue of such a nature that a resorption of the secretion cannot take place.

In seventeen cases collected by Leith, a period varying between ten days and ten years elapsed after receipt of the injury before the cyst was discovered. Closure of the duct of Wirsung with resulting cyst formation may, it is claimed, be occasioned by a catarrh extending into the excretory duct from the duodenum.

Among the occasional causes are concretions, interstitial connective-tissue hypertrophy, carcinoma, cicatrices after injuries.

Leo[4] asserts that the reaction of contents is always alkaline; the sediment contains fatty and other degenerated epithelial cells; urea in one case; diastase, he asserts, is always found, and a fat-decomposing ferment. He claims to have no reports concerning the presence of trypsin.

The contents when the cysts are recent consist almost of pure pancreatic juice; later on, extravasations of blood occur, and sometimes pus, bacteria, and epithelial detritus. The bacteria may come in by way of the duct or with the primary disease causing the stenosis.

The physiological and chemical properties of the cyst fluid are not constant, and therefore not reliable diagnostically. The diastatic and proteolytic actions have repeatedly been found missing. The adipolytic action has rarely been observed, and even if a diastatic action could be discovered in an aspirated fluid it would not be pathognomonic of pancreatic cyst, as many other animal fluids possess a diastatic ferment. Von Jaksch points out that the physiological properties of the normal secretion will be found missing more and more, the older the cyst is, the more dilute and altered its contents have become, and the more independently the cyst has developed from the physiological organ. This is the case with the cysts of other organs also.

Proteolysis by Pancreatic Cyst Fluid.—The solvent action of the cyst fluid was tested with coagulated blood fibrin and with boiled and fluid egg albumen.

(1) Fresh blood fibrin from the calf, ox, or sheep was washed with water until it was of a pure white color; then it was boiled repeatedly with water, and thereafter extracted with cold alcohol, boiling alcohol, and finally with ether; then it was ground in a mortar to a coarse powder, and rubbed through a sieve under uniform pressure. The particles thus obtained were generally found to be of the same size. The powder prepared in this manner was then dried at 110° C. to bring the mass to a constant weight. This entire process was done under antiseptic precautions, and the fibrin was dropped into the digestive mixture with a sterilized steel spoon.

Two grams of blood fibrin was added to 20 c.c. of

[1] "Beiträge zur pathologischen Anatomie des Pankreas." Aus dem pathologischen Institute der Universität Rostock, 1894.

[2] "Beiträge zur pathologischen Anatomie und Aetiologie der Pankreascysten," Virchow's Archiv, Bd. 137, S. 348.

[3] "Hémorrhagies du Pancréas," Revue de Méd., 1894.

[4] "Twentieth Century Practice of Medicine," vol. viii., p. 387.

pancreatic cyst fluid and placed in the incubator at 38° to 40° C., and kept in for six hours.

EXPERIMENT No. 3.

Amount of Fibrin.	Amount of Cyst Fluid in c.c.	Undigested Fibrin in gm.	Per Cent. of Proteid Digested.
2 gm	20	0.510	75
2 gm	30	....	100
1 gm	10	0.176	91.3

EXPERIMENT No. 4.

Amount of Fibrin.	Amount of Cyst Fluid in c.c.	Undigested Fibrin in gm.	Per Cent. of Proteid Digested.
2 gm	20	0.1970	90.2
2 gm	20	0.2027	90
1 gm	10	0.2059	79.5

EXPERIMENT No. 8.

Amount of Fibrin.	Amount of Cyst Fluid in c.c.	Undigested Fibrin in gm.	Per Cent. of Proteid Digested.
2 gm	20	0.5727	71.4
1 gm	25	....	100
1 gm	10	0.1415	86

Generally an equal quantity of sterile distilled water was added to the cyst fluid; at the end of a given period the digesting mixtures were removed from the incubator and heated to boiling in a water bath to destroy the ferment. The undigested residue was collected on a filter, washed with boiling water until it was free from all soluble substances, and then dried at 110° C. The difference between the weight of fibrin originally placed in the digesting-mixture and of the undissolved residue regained constitutes a reliable index of the proteolytic action of the cyst fluid. It will be seen from the above examples, which are taken from a series of twelve experiments, that the cyst fluid digested on the average 86.93 per cent. of pure fibrin.

Digestion Fluids with Fluid Egg Albumen.—The albumen solution was prepared according to the method of Schütz.[1] The globulin was removed from a measured amount of undiluted egg albumen by the addition of HCl (s. g., 1.120)—4.2 c.c. HCl to 300 c.c. albumen. The mixture was vigorously shaken and allowed to stand for six hours, and then filtered. This solution, which must be carefully neutralized by dilute sodium carbonate, contains approximately 1 gm. of coagulable proteid to 10 c.c. of the fluid; the exact amount can be determined by precipitating with heat and collecting the precipitate on a weighed filter and drying at 110° C. The digestive mixtures were prepared in the following manner; each mixture contained 10, 15, or 20 c.c. of the prepared albumen solution, together with 10, 15, or 20 c.c. of the pancreatic cyst fluid. The flasks or test tubes were placed in the incubator and kept at 38° or 40° C. from six to eight hours. The digestion was arrested at any desired time by placing the mixtures in boiling water to destroy the ferments; the unaltered albumen was precipitated, collected on a weighed filter, washed with boiling water, and dried at 100° C. The difference between the amount of coagulable albumen originally used and the amount regained at the end of the experiment gave the amount of the soluble digestive products; in this way it was possible to measure the degree of the proteolytic action of the pancreatic cyst fluid with fluid egg albumen. In other experiments we did not use this albumen solution, but simply weighed amounts of ordinary hard-boiled egg white, and determined the degree of proteolysis by weighing the amount of albumen recovered.

EXPERIMENT No. 4, WITH EGG ALBUMEN.

Amount of Albumen.	Amount of Cyst Fluid in c.c.	Undigested Albumen in gm.	Per Cent. of Proteid Digested.
1.92 gm	20	0.2616	86.4
2 gm	20	0.2	90
1.919 gm	20	0.586	69.5

[1] Zeitsch. f. physiol. Chem., Bd. ix., p. 581.

EXPERIMENT No. 5.

Amount of Albumen.	Amount of Cyst Fluid in c.c.	Undigested Albumen in gm.	Per Cent. of Proteid Digested.
1.639 gm	10	0.925	88.8
1.639 gm	20	0.547	66.8
0.8199 gm	30	Trace.	100

EXPERIMENT No. 6.

Boiled Solid Egg Albumen.	Amount of Cyst Fluid in c.c.	Undigested Albumen in gm.	Per Cent. of Proteid Digested.
2 gm	20	0.5834	70.9
2 gm	10	0.2863	71
2 gm	20	0.2601	87

From these experiments, which are examples from twelve analyses, we concluded that the pancreatic cyst fluid will digest 83.6 per cent. of the fluid albumen solution made according to Schütz, and 76.3 per cent. of boiled egg white.

Experiments Concerning the Amylolytic Action.—The products formed from starch by diastase are in the main amylodextrin, erythrodextrin, achroodextrin, and maltose. The first stage of transformation is soluble starch or amylodextrin; this still gives a blue color with dilute solution of iodine. As the diastatic action proceeds, the blue color gradually gives place to a purplish-red color with iodine, the red purple being due to the formation of erythrodextrin. The end products of amylolysis, achroodextrin and maltose, give no color reaction with iodine; thus the color obtained under these conditions is dependent upon the amylolytic action. The stage at which the digesting mixture gives no color with tincture of iodine is called the "achromic" point, and the number of minutes required for the achromic point is an index of the intensity and rate of amylolytic action.

There are two ways of determining approximately the rate of amylolysis: (1) One is by determining the achromic point; (2) the second is by determining the amount of maltose formed by the method suggested by Allihn.[1] From the amount of copper reduced when the solution to be analyzed is boiled with a standard Fehling's solution freshly prepared, the amount of maltose was calculated. Salomon has shown that one hundred parts of anhydrous maltose will reduce one hundred and fourteen parts of copper when boiled with standard Fehling's solution.[2]

The Diastatic Action of Pancreatic Cyst Fluid Determined According to the Time of Appearance of the Achromic Point.—In all of these experiments a one-per-cent. solution of freshly prepared starch paste was used. This was mixed with varying quantities of pancreatic cyst fluid, and sometimes diluted with sterilized water, and placed in the incubator at 38° or 40° C. In determining the achromic point, the time at which the cyst fluid was added was accurately noted. A drop of the digesting-mixture was withdrawn at intervals and tested with a drop of dilute iodine solution on a white porcelain surface. This method can, of course, inform us only of the time when all the starch has been transformed into achroodextrin and maltose. The exact amount of maltose it is impossible to obtain except by the method of Allihn.

EXPERIMENT No. 1.

Amount of Cyst Fluid.	Amount of 1 Per Cent. Solution of Starch, c.c.	Time of Appearance of Achromic Point, min.
10 c.c.	10	8
20 c.c.	20	10
5 c.c.	10	8
1 c.c.	10	8
1 drop	10	10
1 drop	20	10
1 drop	25	11
1 drop	22	10 and 10 sec.

[1] Zeitschr. f. analytische Chemie, Bd. xxii., p. 48.
[2] Journal für praktische Chemie, Bd. xxviii., p. 109.

Experiment No. 5.

Amount of Cyst Fluid.	Amount of 1 Per Cent. Solution of Starch, c.c.	Time of Appearance of Achromic Point, min.
1 drop	30	15
1 drop	50	30
1 c.c.	50	10
10 c.c.	50	10

The rest of the experiments concerning the time of the appearance of the achromic point gave the same evidence of a remarkable amylolytic action of the cyst fluid, one drop of the fluid bringing on the achromic point with 10 c.c. of one-per-cent. solution of starch in ten minutes.

By the method of Allihn above referred to, the amount of maltose formed was ascertained by the amount of copper reduced in Fehling's solution.

One gram of arrowroot starch was made in a paste with the amount of water varying from 30 to 50 c.c. The cyst fluid was then added to bring the amount of the total fluid up to 50 c.c.; the mixture was then placed in the incubator at 38° to 40° C. for one hour; the solution was then heated to boiling to prevent further action of the amylopsin. The solution, after the digestion had been arrested, was diluted to 120 c.c. with sterile water, and the degree of amylolytic action ascertained by determining the amount of maltose in 20 c.c.; the 20 c.c. containing one-sixth of a gram of starch.

Experiment No. 3.

Amount of Cyst Fluid.	Amount of Starch, gm.	Amount of Copper Reduced in ½ gm.	Per Cent. of Maltose Formed.
10 c.c.	1	0.0908	39
10 c.c.	1	0.0910	31.96
20 c.c.	1	0.144	75.8
20 c.c.	1	0.146	75.5

Six other experiments, made to determine the maltose formed by Allihn's gravimetric method, give evidence that 20 c.c. of the cyst fluid will form about 75 per cent. of maltose from one gram of starch at a temperature of 38° C.

Experiments Concerning the Adipolytic Action of the Cyst Fluid.—Ten grams of neutral olive oil was mixed with 10 c.c. of cyst fluid; the reaction was neutral, perhaps very slightly alkaline. As a control test, 10 c.c. of neutral olive oil was shaken with 10 c.c. of sterile distilled water, and both mixtures were placed in the incubator, at 38° to 40° C. The degree of adipolysis was determined with the Soxhlet apparatus, according to Müller's method.[1] The digesting-mixtures were kept in the incubator for twelve hours, when they reacted strongly acid; the control mixtures containing simply oil and water still reacted alkaline. The titration for free fatty acids, using phenolphthalein as an indicator and an alcoholic decinormal solution of potassium hydroxide, showed that from 12 to 14 per cent. of free fatty acids had been formed.

Spectroscopic Examination.—The cyst fluid itself, as well as an HCl-ether extract made therefrom, showed a broad band between Fraunhofer's lines D and E in the yellow and green; it is therefore probable that the coloring matter is hæmatin. According to W. G. Halliburton and T. T. Burton,[2] pancreatic juice possesses a milk-precipitating substance, causing at 35° to 45° C. a granular precipitate in milk; but there is no solidification until the milk cools, when it sets to a coherent curd; on warming, the curd is broken up and the milk resumes its granular fluidity. The precipitate seems to be a body intermediate between casein and caseinogen. We made several tests with the cyst fluid and milk to detect such an action if present; the tests were all negative, showing an absence of the milk-precipitating substance.

Microscopic Examination of Cyst Fluid.—The sediment of the fluid was shown under the microscope to consist of an amorphous granular detritus and several distinct morphological elements.

(1) Pavement epithelial cells in large numbers were to be seen, some presenting an almost normal appearance, being of a quadrilateral shape and containing a distinct oval nucleus. But by far the large majority had undergone fatty degeneration and partial digestion. It is probable that the amorphous detritus was formed largely from these broken-down cells.

(2) Hæmatoidin crystals arranged in radiating clusters of an orange color were present.

(3) A very few cholesterin crystals.

(4) The remainder of the morphological elements consisted of two forms of hyaline translucent bodies. Of these the greater number were irregularly round, varying in size from 3μ to 10μ. Much fewer in number were slender hyaline bodies, having a swelling at either end resembling dumbbells in appearance. Sometimes there was a third swelling in the middle. These varied in length from 4μ to 16μ. Both forms of these bodies acted similarly to reagents. They did not stain with methylene blue, eosin, or osmic acid. They stained slightly with hæmatoxylon and deeply with carbolfuchsin (Ziehl's solution). Iodine did not color them. They were not dissolved by dilute acids or alkalies, alcohol or ether. Alcohol and chromic acid produced no turbidity, distinguishing them from mucus. These bodies belong, therefore, to the class of the so-called colloid bodies.

The tissue which was cast out of the abdominal fistula after the aspiration was irregular in shape. It was 12 cm. long, 4 cm. at its widest part, and from 5 to 8 cm. in thickness. It weighed, moderately wet with seventy-per-cent. alcohol, 12.5 gm. Scattered irregularly throughout the tissue were dark pigmented portions. Sections were made from several different parts. These, on being stained with hæmatoxylon and eosin, stained diffusely red. Under the microscope they were shown to consist mainly of white fibrous tissue. At some places the fibres lay in parallel bundles and presented a nearly normal appearance; at others they appeared separated and broken down. Among these fibres, scattered over the specimens, was a varying amount of hæmatoidin crystals. Also, lying among and distributed irregularly through the sections, were round bodies, semitranslucent and only very slightly stained blue with hæmatoxylon. They varied in size from 3μ to 40μ. They were not affected by dilute acids or alkalies, nor by alcohol or ether. With iodine they stained very slightly yellow. They are therefore in all probability colloid material. At the periphery of sections taken from one part of the tissue there was an area of dense infiltration of leucocytes. The majority of these were of the polynuclear variety. In nearly all the sections could be seen at one border a distinctly glandular structure made up of columnar cells. These cells were for the most part arranged in the form of acini, so that the glandular nature of the cells was unmistakable. The nuclei of the cells were mostly in the centre, but a few cells could be seen in which the nuclei were at the base. The cells were granular, like those of a serous gland. That it was a portion of the pancreas is rendered highly probable by the granular nature of the cells and their nuclei being centrally situated.

History Given by Dr. Henry F. Hill.—I first saw Henry D—— with Drs. Hill and Chew, on December

[1] Leo's "Diagnostik d. Krankh. d. Bauchorgane," p. 343.
[2] Journal of Physiology, p. 106.

5, 1897, which was the twenty-seventh day of his (H. D——'s) illness. Dr. Hill gave me the following history:

"Henry Dixon, aged twenty-four, male, white, robust build, car conductor, had always enjoyed excellent health. While on his way to take his car out, he was seized with cramps in the epigastric region, which compelled him to return home. Vomiting soon began, and both pain and vomiting continued for four or five days almost incessantly, notwithstanding one-tenth grain calomel tablets were given, and later sulphate of magnesium. There was no rise of temperature or acceleration of pulse. The patient complained of fulness, as though he would burst, in the region of the stomach; here he was tender on pressure. After the first week the patient became better, though confined to bed, and sat up during the second week, but he was nauseated and was constantly spitting. He went downstairs during the second week. There was no jaundice at any time. On the fourteenth day he went out of doors, and during the third week returned to his car and worked for a few days, though not feeling perfectly well. On the twenty-first day after the commencement of the sickness I was called to see the patient, and found him vomiting a good deal, with return of pain over the stomach. The following day (twenty-second of his sickness) I discovered some dulness to the left of the median line over the spleen, but it was not pronounced. On the twenty-third day dulness increased, and I marked its outline with ink. The twenty-fourth day dulness rapidly increased; but the temperature was only one degree above normal and the pulse less than 90. On the twenty-fifth, temperature, 99.4° F.; pain present, of a dull character; and the swelling was perceptible to the eye, having increased much. Dr. Chew was requested to see him, which he did next day—Saturday, the twenty-sixth day of illness. The following day Dr. Tiffany was in consultation."

Clinical History by Dr. Tiffany.—I saw H. D—— with Drs. Chew and Hill, December 5, 1897, and received the history already detailed by Dr. Hill. Physical examination showed a swelling in the epigastric region, rather more to the left of the middle line than to the right, firm, elastic, rounded, dull on percussion, continuous with the hepatic and splenic dulness. At the extreme upper border resonance was evident, presumptively of the stomach; across the lower portion a certain amount of resonance existed, presumptively of the colon. The swelling was 13 cm. across, by nearly the same diameter vertically; on percussion over it a certain thrill was elicited; it did not move in respiration, not even in forced respiration, and seemed to pass backward into the kidney region. It was undoubtedly cystic. The urine and stools had been normal and the temperature scarcely elevated above normal at any time. Respiration was not changed. The patient rested well upon the back. The same day he entered hospital, and the following day, December 6th, I operated.

Under ether an incision was made in the linea alba over the swelling, 14 cm. long, and the peritoneum opened, which was healthy; the lower border of the stomach and the transverse colon presented with the swelling behind. The omentum between the stomach and colon was torn through, and the tumor came into view. The cyst wall was uncovered over an area of 5 by 3 cm., and the denuded space packed with gauze. No reaction followed the operation, and two days later the cyst was tapped with the usual precautions for cleanliness, and the fluid received into a clean bottle, which was given to Dr. Hemmeter for examination. The amount of fluid withdrawn was about one and one-half quarts. All went well. The drainage tube was left in the sac, and was subsequently replaced by gauze. The sac granulated rapidly and the patient left hospital at the end of a month, a small sinus only remaining. Ten days after the sac was opened there was withdrawn by the resident physician from the sac a mass of slough, which presented at the opening. It was 10 cm. long by 4 cm. broad at one end, tapering to a point at the other. From the examination herewith annexed (Dr. Adler) it would appear to be a portion of the pancreas.

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OBSERVATIONS ON MORTON'S PAINFUL AFFECTION OF THE FOURTH METATARSO-PHALANGEAL ARTICULATION AND SIMILAR AFFECTIONS OF THE METATARSAL REGION THAT MAY BE INCLUDED WITH IT UNDER THE TERM ANTERIOR METATARSALGIA.[1]

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In 1876 Dr. T. G. Morton, of Philadelphia,[2] described a series of cases characterized by recurrent pain about the fourth metatarso-phalangeal articulation. The pain was usually sharp and cramp-like in character. It was at first localized at the affected joint, but unless it was checked it increased in intensity and extended to the other toes, to the dorsum of the foot, and leg. The cramp might be relieved in most instances by removing the shoe and by rubbing and compressing the painful part.

The pain was ascribed to pinching of the external plantar nerve or its interosseous fibres, by the adjoining fourth and fifth metatarsal bones. The location of the pain was explained by the peculiar distribution of the external plantar nerve, which predisposed it to injury; by the relative shortness and mobility of the fifth metatarsal bone, which allowed it to roll above and under the fourth, the head and the base of its adjoining phalanx being thus brought into contact with the head and neck of its fellow. As a result of the bruising or pinching, neuritis followed.

The original cause of the abnormal mobility, or of the condition that allowed the pressure, in many instances was injury, possibly rupture of the transverse ligament; in other cases the pain appeared to be caused by tight shoes; in others no cause could be assigned. The description of the symptoms was graphically sketched in the words of the patients themselves, and no amendment is needed, except that the cases described were of a more severe and disabling character than is usually seen at the present time.

The treatment recommended and applied in a number of the cases was the removal of the head of the fourth metatarsal bone, in order to relieve the nerve from pressure, an operation that was successful in all the cases in which it was employed. In a later paper[3] Morton stated that the affection was familiar to shoemakers, and that the milder cases might be relieved by wide, thick-soled shoes and by the use of a narrow flannel bandage drawn snugly about the metatarsal region.

In 1891 Bradford, of Boston, described sixteen cases of Morton's neuralgia of a milder type.[4] Bradford accepted Morton's theory absolutely, or, as he stated, "took it for granted that the pain was entirely due to an irritated condition of the external plantar nerve caused by pressure." Yet in none of the cases was he obliged to perform resection, in none was the affection due to injury, and in none was flatfoot present. In all but one of the cases the pain was at the fourth metatarso-phalangeal articulation. The cases were treated by rest, by external applications, and by wide-soled shoes, and all appear to have been relieved or cured.

Two years later T. S. K. Morton, of Philadelphia, reported six cases of the severe type,[1] all of which had been treated by resection of the head of the metatarsal bone. He stated that he had not been able to demonstrate any laxity of the transverse ligament or other abnormal condition at the operation. He believed the etiological factors to be injury, heredity, excessive exercise, changing from a thick to a thin soled shoe, and the like. The immediate cause of the symptoms was bruising of nerves followed by neuritis. As remedial measures wide, thick-soled shoes sufficiently firm about the instep, together with the support of the flannel bandage about the metatarsus, might relieve the milder type, but advanced cases could be cured only by resection. In 1894 Gibney reported six cases.[2] He accepted Morton's explanation of its causation, but included flatfoot in the etiology. He made a valuable suggestion that the arch of the foot should be supported by a high-arched shoe made on a Spanish last; he also had relieved patients by encircling the base of the metatarsus with adhesive plaster, on the hypothesis that the heads of the metatarsal bones were thus separated.

In a recent paper by T. G. Morton,[3] illustrated by several Roentgen-ray photographs, three other cases treated by excision are reported. He states that twenty years after his first description of the affection he finds no reason to change his original opinion, that it is a painful affection of the plantar nerves, directly caused by pressure upon them or pinching them or their branches by certain portions of the fourth or fifth metatarso-phalangeal articulations.

In 1889 A. Poullosson, of Lyons, described, under the title of "Anterior Metatarsalgia," a case apparently identical in symptoms with those described by Morton and others. He ascribed the symptoms to laxity of the transverse metatarsal ligament that allowed an infraction of the metatarsal arch by the depression of the head of the fourth metatarsal bone, a subluxation that permitted lateral pressure upon the nerves distributed on either side of the bone. On this theory he had treated the patient successfully by inserting a rubber pad beneath the depressed bone. Poullosson's case was reviewed at length in *The Lancet*,[4] and the article apparently attracted considerable attention.

Roughton, in a letter to *The Lancet*,[5] reported a similar case and asserted that the symptoms "were clearly due to sinking of the anterior transverse arch and to the resulting pressure of the heads of the two or three middle metatarsal bones upon the sensitive structures of the sole of the foot."

Another writer in the same issue describes a case in which relief of symptoms always followed the pushing up of the head of a depressed metatarsal bone that could be felt in the sole of the foot.

In 1892 T. L. Guthrie[6] reported a case of anterior metatarsalgia caused by depression of the head of the third metatarsal bone, which he had treated by a pad placed beneath it.

C. E. Woodruff,[7] in a paper on "Incomplete Luxations of the Metatarso-Phalangeal Articulations," stated

[1] Read before the American Orthopedic Association, May 17, 1898.

[2] American Journal of the Medical Sciences, 1876.

[3] Philadelphia Medical Times, October 2, 1886.

[4] Boston Medical and Surgical Journal, vol. cxxv., No. 3, p. 52.

[1] The Annals of Surgery, vol. xvii., p. 680, 1893.

[2] Am. Jour. Nervous and Mental Disease, September, 1894.

[3] International Medical Magazine, vol. v., 1896 and 1897, p. 322.

[4] March 2, 1889, p. 436.

[5] March 16, 1889, p. 553.

[6] Lancet, March 19, 1892, p. 628.

[7] MEDICAL RECORD, January 18, 1890.

that anterior metatarsalgia was caused by giving way of the anterior transverse arch, owing to stretching of the transverse ligaments by long standing, injury, and the like. The disturbance of position caused pain by pressure on the digital nerves in the sole of the foot. It should be treated, therefore, by pads beneath the anterior arch.

In 1894 Goldthwait, of Boston,[1] described the anterior transverse arch and its depression as a cause of pain similar to that described by Morton, in a much more thorough and convincing manner than had been done before. His conclusions were that obliteration of the transverse arch was very much more common than depression of the longitudinal arch; that, although comparatively few persons were inconvenienced by it, yet in some instances patients suffered from pain either constant or paroxysmal, usually referred to the centre of the anterior arch, where a painful callus might be found. This location of the pain was much more common in his experience than at the point described by Morton. The causes of depression of the anterior arch were similar to those of depression of the longitudinal arch, viz., excessive standing or walking, injury, weakness after a long illness, and probably improper shoes, particularly those which were too narrow. The depression of the anterior arch might be demonstrated by an impression of the sole, which would show the absence of the re-entering angle at the base of the great toe. The condition might be relieved by placing a pad of felt or leather beneath the depressed bone or bones, or, if the affection was combined with depression of the longitudinal arch, a flatfoot brace should be employed.

In a recent paper on this subject, Jones, of Liverpool,[2] recognized depression of the anterior arch as a cause of symptoms, but he considered this to be in most instances secondary to flatfoot. The characteristic pain was not caused by pinching of the nerves, Morton's theory, because the metatarsal bones are separated when the arch is depressed; it was the result of the direct downward pressure of the misplaced bones upon the plantar nerves in the sole of the foot, practically Woodruff's theory. All of the cases were treated by resection of the head of the bone at the seat of pain, and in four instances two metatarsal bones were resected. The after-treatment was by means of thick-soled shoes, raised on the inner border as advocated by Thomas for the treatment of flatfoot, with well-fitting insteps to support the arch. Jones states that this theory of direct downward pressure on a nerve is supported by an observation of Tubby, who examined a portion of a nerve removed at an operation, and found it to be congested and swollen. It is of interest in this connection to note that Woodruff[3] described a case of what he called incomplete luxation of a metatarso-phalangeal joint, in which symptoms similar to those described were caused by a slight upward displacement of the first phalanx upon the fourth metatarsal bone. Guthrie also[4] reported a case in which intense pain was caused by overextension of the third phalanx upon the second.

A comparison of the reported cases that may be included under the term anterior metatarsalgia is of interest as bearing on the question of etiology. As no mention of other weakness or deformity is made by Morton, one may conclude that he considered the foot to be otherwise normal, yet depression of the anterior arch was present in many of the cases described by others.

In Bradford's sixteen cases the arch of the foot was normal, while in twelve of the fifteen cases reported by Jones in which the appearance of the foot was noted it was depressed, and flatfoot is considered by him to be the most important factor in the etiology.

In practically all of the earlier cases the pain was referred to the fourth metatarso-phalangeal articulation. On the other hand, Goldthwait states that the pain of metatarsalgia is much more common at other points in the anterior arch. Eight of Morton's cases were caused by injury, none of Bradford's. In all of Jones' cases, and in all those reported by the younger Morton, resection was performed, yet in the practice of Bradford, Gibney, and Goldthwait the operation had never been required.

Depression of the anterior arch is said to be the result of long standing or of overwork, yet anterior metatarsalgia is more common in women than in men. Flatfoot is alleged to be a direct cause of this depression, yet typical Morton's neuralgia is almost never a symptom of flatfoot.

As regards the actual symptoms of anterior metatarsalgia, there is little difference in the accounts of the writers on the subject, and, as has been stated already, the original description of Morton included all the important points.

The affection is relatively uncommon in hospital practice; it is more common in females than in males. Of 84 cases collected from the sources mentioned, including 21 of my own, 64 were in females and 20 in males. It is not an affection of early life, the average in 64 cases being 33 years, although in many instances the symptoms had been of long duration. As to the location of the pain, in 60 cases it was referred to the fourth metatarso-phalangeal articulation, in 6 cases to the third and fourth, in 6 to the three middle toes, and in but 6 was the fourth articulation free from pain. Of my own cases, the cramp was felt in both feet in 6, in 9 in the right only, in 6 in the left; in 14 cases the pain was referred to the fourth toe, in 3 cases to the third, in 2 cases to the second, third, and fourth, in 1 case to the second, and in 1 case to the third and fourth. In 3 cases there was marked depression of the longitudinal arch, in 3 cases slight weakness of the arch, in 2 cases an exaggerated arch, and in 13 cases the arch was normal. In 3 cases the symptoms were ascribed by the patients to tight shoes, in 3 cases to injury, in 1 case to "nervous prostration," and in 14 cases no cause could be assigned.

The pain or cramp is in some way favored by wearing a shoe; it is practically never felt at other times except in the very advanced and chronic cases. The cramp may begin as a sharp stinging pain at the fourth toe, or as a burning pain beneath the joint, or as a feeling of discomfort that gradually increases until it becomes unbearable. The pain is often intense, "like a toothache," "sickening," "like a hot coal," and the like; and unless it is relieved it spreads from the original site to the extremity of the toe, to the dorsum of foot, and up the leg. The pain is relieved by removing the shoe, and patients often wear shoes that permit removal with a single motion of the other foot. When the shoe is off the patient seizes and compresses the foot, rubs the dorsum, flexes and extends the toes, and the like. Not infrequently the cramp is preceded by a sensation of something slipping or moving in the foot, and in such instances a similar snap often precedes the relief of the symptoms. After cessation of the pain a certain soreness and discomfort remain, and at all times the affected articulation is, as a rule, sensitive to deep pressure. The cramp is induced in some instances by a misstep or sudden movement, by overextending the toes as in stooping, or simply by overexertion or long standing; but in the well-marked cases of habitual cramp no apparent cause, other than the pressure of the shoe, can be assigned ordinarily.

The affection is extremely chronic, but occasionally spontaneous recovery may take place; in such cases a

[1] Boston Medical and Surgical Journal, vol. cxxxi., p. 233.
[2] Liverpool Medico-Chir. Journal, January, 1897.
[3] *Locus cit.* [4] *Locus cit.*

particular pair of shoes receives the credit of the cure, and in reality the most marked peculiarity of the cramp is that the pain is induced by the shoe and is relieved by its removal. Minor degrees of pain of the nature of metatarsalgia must be common; Morton states that the affection is well known to shoemakers, and almost every patient that I have seen knew of others who suffered in a similar manner.

The quotations from the literature of the subject make apparent the uncertainty that exists as to the meaning of the term anterior metatarsalgia, as well as to its cause and to its treatment. If in the typical cases the foot is otherwise normal, as is implied by Morton, or if no definite cause for the symptoms can be assigned, one must accept the barren theory that the pain ultimately depends upon the anatomical construction of the foot, and content himself to remove the head of a normal bone because it serves as a point of counterpressure in pinching a nerve.

On the other hand, the theory that the pain is the result of an acquired weakness, either of structure or function, corresponds with what is known of other affections of the foot. It is therefore more reasonable and from the therapeutic standpoint a much more hopeful conclusion; for if weakness and deformity can be recognized, they may be prevented as well as cured by appropriate treatment. I shall therefore call your attention to the anterior metatarsal arch and to its weakness, as a possible cause of the affection under consideration; and I shall attempt to explain the mechanism of the symptoms and to reconcile, if may be, the apparent contradictions that the literature of the subject presents.

The metatarsal arch is, of course, not a permanent arch, for when weight is borne the heads of all the metatarsal bones are on the same plane and the arch is obliterated. The head of the third bone bears the most weight, as is shown in normal feet by a callous or thickening of the skin beneath it. The outer and inner borders of the arch formed by the first and fifth metatarsal bones are provided with special muscles to aid in balancing and supporting the weight, and normally the toes also assist the arch and relieve it of a part of the strain of walking. When the weight is removed from the anterior arch it reforms, the second and third metatarsal bones springing upward above the level of their fellows.

One notices now on looking at the sole of the foot the rounded muscular projection of the great-toe joint and at its outer side a fold or depression, indicating the highest point in the arch. By a weak or depressed anterior metatarsal arch one means that its natural resiliency is lost, the front of the foot seems broadened and flattened, and in some instances there is a distinct downward projection at its centre, the normal prominence of the great toe having disappeared. This downward projection may be the result of a loss of tone simply, or it may be a fixed deformity, so that it is difficult to raise the arch even by manipulation. In other instances the foot may appear to be perfectly normal, even in cases of typical neuralgia.

Although the arch is always obliterated when weight is borne, yet the imprint of a normal foot differs from that of one in which the arch is weakened or depressed. In the latter instance the tissues are somewhat flabby and spread out under weight, occupying a larger surface, and thus encroach upon the clear space representing the longitudinal arch. The absence of what Goldthwait calls the re-entering angle, which represents a part of the hollow between the first and second metatarsal bones, distinguishes the imprint from that of the perfectly normal foot; but imprints, like other forms of graphic demonstration, are of more service in showing evident deformity than of value in early diagnosis.

Why should weakness or depression or other abnormal condition of the metatarsal arch cause symptoms such as have been described? This has never been adequately explained. One may understand how depressed metatarsal bones pressing on the sensitive tissues of the sole, as described by Woodruff and Jones, might cause constant pain or discomfort, but it is somewhat difficult to explain intervals of comfort, lasting, it may be, for weeks, alternating with paroxysms of pain, if all varieties of the affection are to be ascribed to this cause.

In studying a disability in which some slight change from the normal condition is suspected, one must begin by an examination of the structure and function of the normal part and of its peculiarities, and it occurred to me to utilize the hand as a more convenient member for observation than the foot. The hand and foot resemble one another closely; there are, more particularly, the same anatomical arrangement of nerves and the same relative shortness and mobility of the fifth metatarsal bone, that Morton considered of so much importance in the etiology of the affection. The metacarpal arch is composed, however, of but four bones, while that of the foot has five; but, as the first metatarsal bone has never been accused of participating in the neuralgia, this difference is of less importance than it would otherwise be. The anterior arch of the hand is increased in depth by flexing the fingers; it is diminished by hyperextension of the fingers; that is, on hyperextension the heads of the metacarpal bones become prominent in the palm, the middle bones being on a somewhat lower plane than the other two. If the relaxed hand is squeezed or compressed laterally, it will be noticed that the anterior metacarpal arch is increased in depth, the hand is as it were folded together, the heads of the third and fourth metacarpal bones project on the dorsal surface, and compression causes no pain. If, however, the fingers are held in an attitude of hyperextension, so that the arch is depressed and fixed and the hand is thus not allowed to fold together (Fig. 1), firm lateral pressure causes great pain at the junction of all the metacarpal heads. Or, if one extended finger is forced backward (hyperextended) to its extreme limit (Fig. 2), lateral pressure on the hand causes extreme pain at or about the head of the depressed bone. If with the finger in this attitude deep pressure is made on the lateral aspect of the depressed head of the bone in the palm, a point of greater sensitiveness, representing apparently the digital nerve, can be made out. The same experiment may be made upon the normal foot with the same result. Dorsiflexion of the toes, more particularly of the second and third toes, depresses the metatarsal bones and fixes them in line, so that lateral pressure causes pain by forcing the joints against one another. Dorsal flexion of one toe forces the corresponding metatarsal bone downward and lateral pressure causes pain, always at the point of depression. If with the toe held in extreme dorsiflexion, weight is placed under the foot, the projecting bone in the sole will be found sensitive to the pressure, and by manipulation the same particularly sensitive points, apparently representing the nerves, may be made out. In the hand, the fourth metacarpo-phalangeal joint, and in the foot the fourth metatarso-phalangeal joint, will be found to be most sensitive to these manipulations, probably because of the greater mobility that allows the greater depression and because the pressure can be more directly applied by the external and overriding bone.

If the conclusion be accepted that depression of the anterior arch predisposes to pain on lateral pressure, even in the normal foot or hand, one may appreciate the importance of such an abnormal attitude, whether it be occasional or habitual in the foot, which

must support the weight of the body and which is often subjected to lateral pressure by the shoe.

Again, if there are distinct types of the weakened or depressed metatarsal arch, it is reasonable to infer

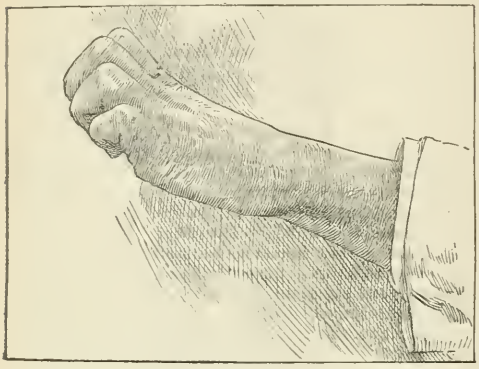

Fig. 1.

that there will be a corresponding variation in the symptoms. For example, one recognizes:

1st. A rigid depression of the anterior arch somewhat similar to rigid flatfoot, in which the front of the sole forms a general rounded prominence, in which the toes are dorsiflexed, and in which the arch cannot be reformed by manipulation. As one would expect in such cases, the pain referred to the front of the foot is more or less constant on use. It appears to be caused by direct pressure on the sensitive and depressed joints and by lateral pressure of the joints upon one another aggravated by sudden movements, which may cause pain more or less neuralgic in character, although not limited to one articulation. One case of this type seen recently had been treated previously by removal of the fourth toe and the greater part of its metatarsal bone, but without relief of the symptoms, a result that might have been predicted from the nature of the deformity.

2d. Simple non-rigid depression of the anterior arch. In this type the front of the foot is broadened on general relaxation of the tissues, and it may or may not be combined with flatfoot. In many instances the condition may exist without causing noticeable symptoms, or they may be masked by the more positive discomfort due to weakness of the longitudinal arch, but in general one would expect the symptoms caused by the increased pressure upon the heads of the metatarsal bones, the painful callus, and the burning pain beneath the joints at the centre of the arch. If, however, such a relaxed foot were subjected to lateral pressure, as from a narrow shoe, then the twinges of neuralgic pain referred to the middle of the arch or to the fourth metatarsal bone might be expected, and as a matter of fact such symptoms are complained of in a certain proportion of the cases. If the longitudinal arch is weak, the foot lengthens under use and thus affords the opportunity for lateral pressure by the narrow part of the shoe. That sufferers from flatfoot do not oftener complain of the symptoms of this lateral pressure is due doubtless to the fact that the abduction characteristic of the broken-down arch relieves the front of the foot from strain by transferring it upon the arch and inner border.

3d. Cases of typical Morton's neuralgia, in which, in many instances, the foot may appear to be perfectly normal; in others slight weakness of the longitudinal arch may be present, but more probably an effect than a cause, and in others, as has been stated, depression of the longitudinal or the anterior arch or both may be present.

In the cases in which no apparent deformity exists it may be inferred that the natural or abnormal mobility of the fifth metatarsal bone allows it to override the fourth (not to roll above and under it, as Morton suggested), and thus to cause painful pressure in the manner already demonstrated. This assumption is supported by the following evidence:

1st. Violent pain may be induced by lateral pressure on the hand when the fifth metacarpal bone overrides the fourth, but not when they are in the opposite relation.

2d. Characteristic pain may be induced in the foot by a similar manœuvre in patients who are subject to the cramp.

3d. Morton's neuralgia is often preceded by a burning pain beneath the toe, apparently due to pressure on a sensitive depressed joint.

4th. It is often preceded by a sensation of something moving or snapping and relief from pain is preceded by a similar snap.

5th. Relief is experienced by flexing and extending the toes and by compressing the foot, procedures that would tend to replace a depressed bone; and, finally, several cases are on record in which elevation of a depressed metatarsal bone or toe was a necessary preliminary to relief of pain.

One may conclude, then, that depression of the anterior arch predisposes to pain because of the weakness of its muscles and its ligaments; thus the joints and the tissues of the sole are subjected to abnormal pressure in standing and walking. Also that the depression affords the opportunity for direct lateral pressure by the shoe and by sudden movements that may

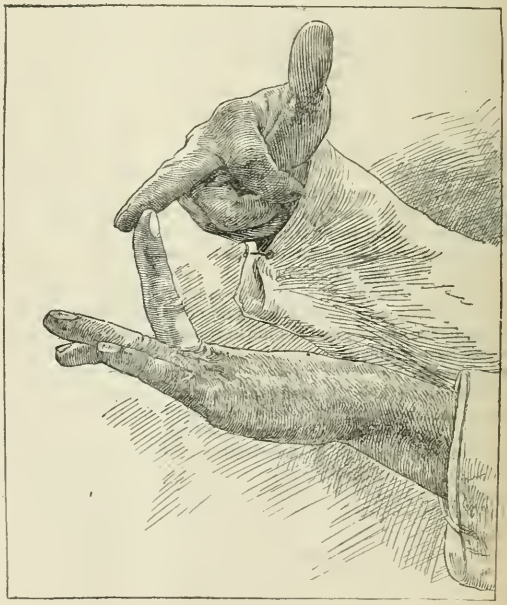

Fig. 2.

force the joints against one another. If the depression of the arch is general and equal, as in the flabby or in the fixed type, typical neuralgic pain is unusual; more often patients complain of symptoms

that are due to direct pressure on the joints, often aggravated by or entirely dependent on a sensitive callus or fibroma near the middle of the arch at the point of greatest pressure. If, however, relaxation of the parts permits one bone to fall below its fellows, then lateral compression will cause the characteristic pain. The opportunity for abnormal depression and lateral pressure is greatest at the fourth joint, because of the mobility of the fifth metatarsal bone, which allows it to assume the overriding attitude, and because of its exposed position in the shoe. For this reason typical neuralgia may be a disabling symptom although the foot appears to be normal in structure and function.

The theory that has been outlined will explain the positive effect of the shoe in the causation of the pain. When the entire arch is depressed, or when a bone in the arch is liable to displacement, the shoe may induce the cramp, because it provides lateral compression and at the same time elevates the heel, thus throwing more weight upon the front of the foot. That elevation of the heel has an influence in the causation of the pain is proved by the fact that patients subject to the cramp are usually more comfortable in walking up than in walking down an incline.

It is a common subject for speculation among patients, particularly those who suffer from occasional cramp, why one shoe is comfortable while another almost inevitably induces the pain, although the comfortable shoe may be the narrower one. The explanation is not difficult; if the tight shoe compresses the foot, as the tight glove compresses the hand, that is, folds it together, as it were, the anterior arch is elevated; but if the shoe does not support the arch in this manner and if it is still sufficiently narrow to exert pressure, or if, as is often the case, the sole of the shoe beneath the arch is curved slightly downward, one or more of the metatarsal bones, held firmly within the shoe, may be gradually or suddenly depressed below the others, and the cramp follows. Thus one may explain the onset of the pain after a long walk or sudden exertion or misstep, or even after long standing. Frequent recurrence of the cramp signifies then, displacement, pressure, irritation, and injury, that must cause a sensitive condition of the joint and of the surrounding tissues. Thus one may understand how, when the cramp habit has been acquired, very slight causes may induce the pain, and how nervous debility, weakness, or rheumatism or allied affections may aggravate its effects.

It will be noted that pressure on joints, displacement, and injury somewhat of the nature of a strain or contusion, as evidenced by the symptoms of local sensitiveness, and in some instances by local swelling and discoloration, are considered of the first importance in the explanation of the characteristics of the affection. My own observations in the dissecting-room do not support the hypothesis that the peculiar distribution of the external plantar nerve explains the location of the pain at the fourth joint. The distribution of the digital nerves and of their articular fibres is practically identical at all the joints; the pain is most often located at the fourth metatarso-phalangeal articulation because that offers the most favorable opportunity for pressure under the predisposing conditions.

If one must infer that a nerve is directly pinched by the apposed bones, it should be not a plantar but a dorsal digital nerve, as the pain is almost always felt in the dorsum of the foot and the outer side of the leg, when it is referred to more distant points. If the plantar nerves are injured, it must be by direct pressure, as Jones has suggested. Deep pressure upon the lateral aspect of the plantar or palmar surface of the joints in the foot or hand causes acute pain apparently due to compression of a nerve, as one may demonstrate upon himself; this probably accounts for the burning sensation, "the hot coal" beneath the toe, of which patients complain. At all events, direct pinching of nerves or neuritis is of secondary importance, and, in many instances at least, of very doubtful probability. Therefore, "a painful condition of the front of the foot, due to weakness and injury," would describe the affection under consideration more accurately than "a painful condition of the plantar nerves."

What are the causes of the depressed metatarsal arch or of that condition of weakness that predisposes to pain?

One form of weak arch may be due, as has been suggested, to laborious occupation, or it may be a part of a general weakness of structure or secondary to flat-foot; but this explanation does not account for the facts that the cramp is more common among women than among men and that the affection is certainly as frequent among those who are able to rest the feet as among those who are overworked, and, finally, that the pain may be an occasional or a frequent symptom when the arch appears to be perfectly normal.

It is more reasonable, it seems to me, to ascribe the affection to that most constant and commonplace cause of pain, disability, and deformity of the front of the foot, the shoe. This is not only the exciting cause of the immediate symptoms but it is the most important of the predisposing causes as well, because of its weakening effect upon the natural supports of the foot.

Under normal conditions the anterior arch should, by the assistance of the toes, be relieved from a part of the direct strain of walking, but ordinarily the toes are practically thrown out of function; they are squeezed laterally by the narrow and misshapen shoe and are lifted off the ground by what I have called the rocker shape of the ordinary sole. If, for example, a patient's hand is presented for examination, it is held with the fingers extended, but if one examines a foot he will notice that the toes are, in most instances, drawn upward and backward, that they are semi-flexed, like retracted claws, and that the range of plantar flexion is much limited. As plantar flexion elevates the anterior metatarsal arch, the test of this range of motion of the toes is of importance. If the arch is depressed and rigid, flexion of the toes is impossible, and even if it is simply depressed from weakness, the range of flexion is much restricted. In the ordinary shoe the fifth metatarsal bone almost invariably overhangs its base of support, that is, the sole, so that the fourth metatarsal bone is, in most feet, the outer support of the arch and occupies a lower level than the fifth, as may be demonstrated in the dissecting-room or upon the living subject.

This relative elevation of the fifth metatarsal bone, an attitude that predisposes to painful lateral pressure, is extremely common, and one may imagine that this elevation or abnormal position might easily be increased to the extent of causing painful pressure, although the remainder of the arch might be normal.

If one accepts the shoe as a predisposing factor in the etiology, it becomes clear at once why women, who wear shoes with narrower soles and higher heels, suffer more than men, and why the affection is as common or more common among those of luxurious habit than among those in poorer circumstances, whose ideas of beauty must be subordinated to necessity.

Anterior metatarsalgia is of course a very remote consequence of improper shoes, and the fact that distortion of the feet is so universal and yet disability so comparatively infrequent shows the reserve force and accommodative power of nature. It has even become a very general belief that the toes are relics, having at the present time no particular function, and that they are, in fact, rather a nuisance and a source of pain

than of practical value to their possessor. This belief is founded upon the erroneous idea, doubtless, that painful and distorted toes are the necessary consequence of wearing shoes.

Admitting the influence of the shoe as a cause of weakness in general and as the direct cause of the cramp in those who are subject to it, one must recognize

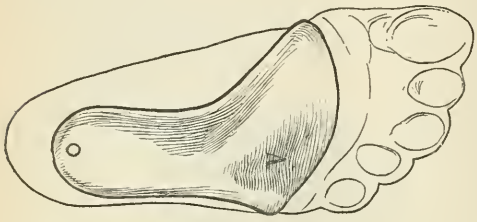

Fig. 3.

many other causes, direct or indirect, of the symptoms. For example, injury or a strain or overexertion may weaken the ligaments or increase the sensitiveness of parts already weakened. Hereditary influence appears to be of some importance, if one may trust the histories of patients. Increased local susceptibility to pain, due to gout or rheumatism or general depression of the system from any cause, may aggravate and prolong the symptoms. In fact, many of the patients appear to be of what might be called a nervous type.

Slight weakness of the longitudinal arch is not uncommon as an accompaniment of anterior metatarsalgia, but in many instances this is a secondary and not a primary condition. Direct flattening of the arch may aggravate the symptoms by affording greater opportunity for lateral compression by the narrow shoe, and, on the other hand, the exaggerated arch may increase the severity of the symptoms by throwing more strain upon the heads of the metatarsal bones.

On the theory that the cause of the pain in metatarsalgia is pressure, acting upon a depressed anterior arch or upon an arch in which a metatarsal bone is liable to displacement, one can readily explain the reason for the efficacy of the various procedures that have been advised. The wide, thick-soled shoe splints the foot, retains the metatarsal bones on an even plane, and thus prevents lateral pressure and sudden twists. The bandages and strapping about the metatarsus give relief by steadying the metatarsal bones and by supporting the anterior arch, not by separating the heads of the metatarsal bones. The Spanish arch or the foot plate is efficient because it removes a part of the weight from the sensitive joints and holds the foot firmly in one position, thus preventing its elongation in the cases in which it is actually weakened. The efficacy of pads or braces beneath the anterior arch is obvious, as is the resection of the part of the metatarsal bone against which pressure is made.

The first essential in treatment is to provide the patient with a shoe of improved pattern with a low heel, a wide, thick sole, a well-fitting arch, and with abundant room for the toes. If the foot shows a tendency toward valgus, the heel and sole may be made slightly thicker on the inner border. The main point in the direct treatment is to support the anterior arch or to prevent the attitude that predisposes to pain. In the mild cases, it may be sufficient to thicken the sole somewhat beneath the middle of the metatarsal arch, so that it may be slightly curved upward instead of downward, as is the usual construction. In most instances, however, more direct support will be required, and as an immediate treatment a pad of sole leather about one-fourth of an inch in thickness may be placed directly behind the head of the metatarsal bone of the painful joint, where it may be fixed by adhesive plaster and further secured by encircling bands of plaster about the metatarsal region. If properly applied, the direct and indirect support of the pad and plaster will almost always relieve the symptoms. In some instances, after the pad has been worn until the most comfortable size and shape have been ascertained, it may be attached to the sole of the shoe, but, as a rule, pads of this nature and the adhesive-plaster strapping, although efficacious, require too much attention and supervision. A properly fitted metal support is therefore to be preferred. This should be constructed on a plaster cast of the sole of the foot, the plaster being hollowed out just behind the affected joint, where the highest point of support should be. The front of the brace should be slightly wider than the foot, so that it may hold its place in the shoe and prevent lateral pressure; it should be extended forward practically to the end of the sole, so that it may aid in steadying the sensitive part. Behind it reaches to the heel, its centre being raised somewhat to support the arch of the foot and to strengthen the shank of the shoe. The brace is made of thin steel and it is tempered after it has been accurately fitted to the foot (Fig. 3). If the longitudinal arch is perceptibly weakened or depressed a flatfoot brace may be employed, so modified as to support the anterior arch as well. In fact, the support of the longitudinal arch, either by the shoe or by a brace, to hold the foot in place and to remove a part of the weight from the metatarsal region as well as sustain it, is a most important part of the treatment, and in many instances patients may be relieved by this means alone. When comfort has been assured by the rest and support of the sensitive part and by the avoidance of what experience has shown to be exciting causes of the pain, the patient should endeavor to strengthen the foot by exercise, as well as by proper functional use, in order that permanent cure may be assured.

The best exercise for the front of the foot is alternate flexion (Fig. 4) and extension of the toes, in order to regain a part at least of their lost function. If the metatarsal arch is rigidly depressed, it must be made flexible by daily manipulation or by forcible correction under anæsthesia before a brace can be worn and before the toes can be flexed.

I have never been obliged to perform resection.

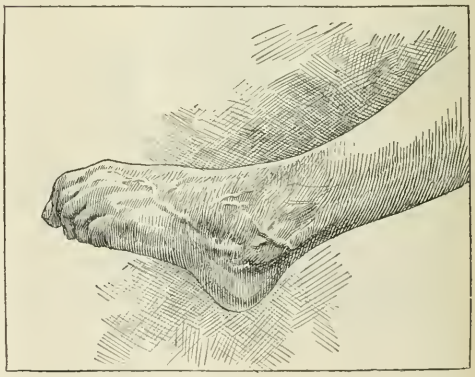

Fig. 4.

This operation is, in any event, the treatment of an effect rather than of a cause. It has the theoretical disadvantage also of weakening the foot, and it causes a rather unpleasant deformity, as the toe always recedes between its fellows; in fact, the operation is indicated only in the severe and chronic class of cases or when

proper treatment cannot be provided or has been proved to be inefficient.

If a patient were seen in the acutely painful stage of the affection, that has been described as an immediate result of injury, and if the pain were persistent at or about the anterior arch, one should assure himself that the bones were in normal position, then support and fix the arch and the foot by a properly applied plaster bandage until the acute pain and sensitiveness of the part had subsided.

It is hardly necessary to describe in detail local and palliative remedies for pain which may be indicated in special cases. Most of them will have been tried before the patient applies for treatment.

There are other painful affections of the front of the foot, in cause and symptoms somewhat similar to anterior metatarsalgia or that may be combined with it; for example, the painful callus beneath the centre of the arch. In some instances its removal will relieve the symptoms, but in most cases its underlying cause, the depression of the metatarsal arch, must be treated in the manner already described, before permanent cure can be attained.

When the longitudinal arch is exaggerated, as in the "contracted" foot, a row of painful corns beneath the projecting metatarsal bones may cause discomfort, and the condition may be accompanied by pain resembling that of metatarsalgia. In such cases, treatment must include the reduction of the corns and the correction of the equinus, if it be present.

The subluxation of the phalanx described by Woodruff appears to be practically identical in symptoms with ordinary metatarsalgia, and the subluxation is very probably preceded or accompanied by depression of the head of the metatarsal bone.

The following conclusions are presented for consideration: Morton's painful affection of the foot and the less definite symptoms that may be included under the term anterior metatarsalgia, although not identical, are nearly allied, in that an abnormal relation of the metatarso-phalangeal joints to one another, combined with pressure, is the cause of the symptoms. This abnormal relation is caused by an occasional or habitual depression of the anterior metatarsal arch or of one of the bones of which it is composed. Habitual depression of this arch is often combined with general weakness of the foot, and much of the discomfort is due to abnormal pressure on the depressed bones from beneath. Occasional and typical Morton's cramp may exist without obvious deformity, and in such instances it is caused by lateral pressure upon an overriding fifth metatarsal bone, due probably to an abnormal laxity of the ligaments. The most constant of the general causes predisposing to weakness of the front of the foot, as well as the most direct cause of the symptoms of discomfort in this region, is the improper shoe.

The cure of the condition may be attained by supporting the anterior arch, by avoiding the exciting causes of the pain, by correcting, if may be, abnormalities of structure or function, by strengthening the weakened foot by exercises, and by affording its mechanism the opportunity for functional activity by the use of a proper shoe.

Surgical Sins.—1. Operating in hopeless cases. 2. Delaying opinion as to the gravity of a disease. 3. Failure to operate in depressed fracture of the skull. 4. Pretending to be clean. 5. Undercharging in order to secure an operation. 6. Stealing patients. 7. Representing capital operations as trifling. 8. Keeping patients too long under chloroform. *Ariston metron.* Unwise speed is bad; "chronic surgery" is worse.—Emory Lanphear.

A SCHEME FOR DETERMINING THE AMOUNT OF DRUG IN EACH DOSE OF ANY PREPARATION OF THAT DRUG.

By JOHN E. GROFF, Ph.G.,

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Many of our young medical practitioners find themselves handicapped at the very outset of their careers by ignorance of drugs and their preparations and the doses of them. To this ignorance more than to any other one thing may be attributed the extensive prescription of ready-made medicines in the form of elixirs, tablets, etc., which flood the market at the present day.

It has been the writer's pleasure to act as instructor in the particular branch of materia medica relating to the composition and strength of the official preparations and their doses, to classes of young medical graduates during their hospital training. He has long noticed that physicians prescribe the various tinctures, fluid extracts, etc., without really knowing just how much drug was represented by the amount of preparation prescribed. To illustrate: He knows three minims to be the dose of tincture of aconite root, but he does not generally know whether he may double or treble the dose, because he does not know how much aconite root is represented by each minim of the tincture; nor does he know of any general way to find out such facts.

To overcome this difficulty the writer has devised the following rules, which, with the tables given, are easily memorized and will be found of immediate and every-day value.

They have been in use for five years by both pharmacists and physicians, and the best proof of their utility is shown by the eagerness with which they are received, the readiness with which they are applied, and the continuance of their use.

I divide the commonly used drugs into three classes:

First, those given in doses of from ½ grain to 2 grains. They are aconite root, cochineal, cantharides, digitalis, opium, physostigma, and strophanthus.

The drugs of the second class are given in doses of from 1 grain to 3 grains. They are aloes, belladonna, cannabis indica, capsicum, colocynth, conium, gamboge, gelsemium, hyoscyamus, ipecac, lobelia, musk, nux vomica, pulsatilla, rhus toxicodendron, sabina, squill, stramonium, tobacco, and veratrum.

All the rest of the official vegetable drugs are given in doses of from 5 to 30 grains.

Be it remembered that dose tables are founded upon experience, and the experience of past years has had to do with improperly cared for and consequently weak drugs, and the doses were made large. The doses given above have been carefully collected from well-recognized sources, and are correct when applied to drugs answering the official requirements.

The first list of drugs should be memorized; the second need not be, but it should be read over several times, that the names in it may become sufficiently fixed in the mind to be recognized on occasion.

When a drug is to be used, one will recognize to which of the three classes it belongs, even though one do not have them at his tongue's end.

The following list of percentage strengths should be memorized:

The poisonous liquors are the arsenical liquors—Fowler's and Donovan's solutions and solution of arsenious acid. They are all 1 per cent. in strength.

The fluid extracts with one exception are 100 per cent. in strength.

The tinctures—that is, the poisonous tinctures—vary in strength and are placed in classes:

Camphorated tincture of opium, $\frac{1}{10}$ of 1 per cent.

Tincture of nux vomica, 2 per cent. of extract. (The extracts may be considered as four times the strength of the drug and the dose one-fourth as much.)

Five-per-cent. tinctures—Cantharides, strophanthus.

Ten-per-cent. tinctures—Opium, deodorized opium, ipecac and opium.

Fifteen-per-cent. tinctures—Belladonna, cannabis indica, colchicum seed, digitalis, gelsemium, hyoscyamus, physostigma, squill, stramonium.

Thirty-five-per-cent. tincture—Aconite root.

Forty-per-cent. tincture—Veratrum viride.

All the fluid preparations of opium have been made 10 per cent., excepting paregoric, the wine, and the vinegar. Also the powder of ipecac and opium.

The only poisonous official infusion is that of digitalis, the strength of which is $1\frac{1}{2}$ per cent.

Among the wines we have antimony, $\frac{4}{10}$ per cent.; colchicum seed, 15 per cent.; colchicum root, 40 per cent.; opium, 10 per cent.

When we speak of a preparation as being $\frac{1}{2}$, 1, 5, 10, or 50 per cent. in strength, we are to understand that the activity of $\frac{1}{2}$ or 1 grain, or 5, or 10, or 50 grains of drug is contained in every $\frac{1}{100}$ minims of the preparation. One minim therefore contains $\frac{1}{100}$ of that quantity. Knowing how much drug is represented by one minim, we may easily calculate how much is held in solution by any number of minims.

Example No. 1.—It is desired to give 5 grains of belladonna in the form of tincture; how much tincture must be used? By our dose table we learn that 5 grains of good drug is rather a large dose; but the tincture being a 15 per cent. tincture, there are 15 grains of drug in every 100 minims. In one minim there is $\frac{15}{100}$ of that amount, or $\frac{15}{100}$ of a grain, or $\frac{1}{6}$ of a grain to each minim. (It is between $\frac{1}{6}$ and $\frac{1}{7}$, but for uniformity we call it $\frac{1}{6}$.) In 5 grains, the amount desired, there are $\frac{30}{6}$, or the amount represented by 30 minims of the tincture.

Example No. 2.—It is desired to give 2 grains of belladonna; how much tincture represents that amount? All 15 per cent. tinctures contain 15 grains of drug in every 100 minims, or $\frac{1}{7}$ grain to 1 minim. And as there are $\frac{1}{6}$ of a grain in 2 grains, 12 minims of the tincture of belladonna will represent $\frac{1}{6}$, or 2 grains of the drug. Two minims of the fluid extract, each minim representing 1 grain of the drug, serves the same purpose. One-half of a grain of the solid extract, which is four times stronger than the drug, would also represent 2 grains of the drug, if it is desired in pill form.

Example No. 3.—The physician finds by his pocket dose list that the tincture of aconite is dosed at from $\frac{1}{2}$ to 5 minims. How much drug does that represent? The tincture is 35 per cent. in strength, or the active power of 35 grains of drug is contained in every 100 minims of the tincture. One minim contains $\frac{1}{100}$ of 35 grains, or $\frac{35}{100}$ of a grain, or $\frac{1}{3}$. Five minims contain $\frac{5}{3}$, or 1 grain and $\frac{2}{3}$. And as our drug is dosed at from $\frac{1}{2}$ to 2 grains, 5 minims are a safe dose.

From these examples it will be seen that the doctor may start out definitely. As it is, he gives 5 minims and increases or diminishes, according to circumstances, and knows not in the end how much drug he has been using. By observing these rules he always knows what he is giving.

In the same manner after a very little application, the physician may deal with all the various preparations.

A 1-per-cent. solution contains $\frac{1}{100}$ grain of drug to the minim; and $\frac{1}{120}$ grain of arsenic, or $\frac{5}{100}$, or 5 minims of Fowler's solution, are one and the same quantity.

A 2-per-cent. fluid contains $\frac{1}{50}$ grain of drug in each minim; 50 minims = 1 grain; 5 minims = $\frac{1}{10}$ grain.

A 5-per-cent. fluid contains $\frac{1}{20}$ grain to each minim; 20 minims = 1 grain.

A 10-per-cent. fluid contains $\frac{1}{10}$ grain of drug in each minim, and 1 grain or $\frac{10}{10}$ will be found in each 10 minims.

In this manner one may be exact in his dosage. If, for instance, he directs 6 minims of tincture of aconite to be given, and by mistake 12 are given, he knows just how much to worry; whereas if he knew not how many grains of drug that amount represented, he would be worried very much for several hours.

It is well to remember that both the tincture and the fluid extract of nux vomica are exceptions. The fluid extract contains $1\frac{1}{2}$ per cent. of alkaloidal strychnine, or about $\frac{1}{50}$ of a grain of strychnine to each minim. The tincture contains 2 per cent. of extract or $\frac{1}{50}$ grain to each minim. The dose of the extract is one-fourth that of the drug, or from $\frac{1}{8}$ to $\frac{1}{3}$ grain. The corresponding dose of the tincture would be from 6 to 25 minims.

It is convenient sometimes to know how much drug is represented by $\frac{1}{4}$ or $\frac{1}{2}$ an ounce or 1 ounce of a fluid preparation. The percentage strength being known, multiply by 5; the product is the approximate number of grains in each fluid ounce.

Infusion of digitalis is $1\frac{1}{2}$ per cent. Multiplied by 5, we have $7\frac{1}{2}$ grains to the ounce, or about 1 grain to the drachm.

A 2-per-cent. tincture contains about 10 grains to the ounce; a 5-per-cent. tincture about 25 grains, etc.

It was stated in the beginning that these rules have been found practically useful by quite a number of practising physicians in good standing, who use them daily; and the writer believes that if they were generally adopted until something better might be devised, they would result in a practice much more satisfactory to the physician by enabling him to attempt more, and by giving him better results through the application of known quantities.

Progress of Medical Science.

Dysmenorrhœa. — Dr. v. Oswiecimski (*Klinisch-therapeutische Wochenschrift*, June, 1898) recognizes three forms of dysmenorrhœa: 1. The inflammatory, which is due to the inflammation of the uterus itself, its adnexa, or the neighboring organs. 2. The nervous, caused by the hyperæsthesia of the uterine mucous membrane. 3. The mechanical, dependent upon some obstruction which prevents the flow of blood to and from the uterus. Under this category he mentions hypoplasia uteri, stenosis of the cervix, anteflexion of the uterus, and closure of the internal os.

Resection of the Sympathetic. — Messrs. Combemate and Gaudier, of Lille, showed a patient before the Paris Academy of Medicine at the meeting of April 19th. The patient was the subject of exophthalmic goitre, and she had been operated on by resection of the sympathetic. The results were as follows: first, a most important diminution of the exophthalmos; secondly, lowering of the heart beats from 200 to 100 in the course of a week, while at the same time the painful pulsation in the precordium disappeared; and thirdly, there was no marked effect on the goitre itself. Messrs. Combemate and Gaudier concluded from their observations that in cases of exophthalmic goitre, when the tachycardia is intense and continuous, when this is the only symptom, or when there is also exophthalmos, there is always the risk of dangerous symptoms supervening. In such cases section of the cervical sympathetic, which acts most probably by preventing the hypersecretion of the thyroid gland, is the best operation to do.

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THE SUPRATONSILLAR FOSSA AS THE STARTING-POINT OF INFECTION.

THE function of the tonsils has always been one of the disputed questions of the physiology of the pharynx. That they are normal avenues of absorption was at first believed and then disbelieved. We no longer credit them with a share in blood formation, "nurseries for the young leucocytes planted by the waterside and drawing their sustenance from the streams nutrient." Nor can the doctrine of phagocytosis be regarded as positively proven so far as concerns its application to this special structure.

Some recent experiments by Goodale, of Boston, would seem to establish four definite conclusions, namely: 1. Absorption exists normally in the tonsil and takes place through the mucous membrane of the crypts. 2. The path of absorbed substances in the tonsil is in the interfollicular lymph spaces in the direction of the larger fibrous trabeculæ. 3. During the process of absorption foreign substances encounter phagocytic action on the part of the polynuclear neutrophiles, situated in and adjoining the mucous membrane. 4. Bacteria are normally present in the crypts, but are not, at least ordinarily, demonstrable in the tonsillar tissue. It is a satisfaction to have demonstrated what provides a simple and logical explanation of many of the clinical problems of sore throats. It is a matter of common occurrence that many cases of contagious disease seem to originate through throat infection, and the proper care of the tonsils cannot therefore be overestimated.

In a recent paper by Dr. Paterson, of Cardiff, England (*Laryngoscope*, July, 1898), an effort has been made to set forth the practical side of the question and to determine just what part of the tonsil is the outpost so often carried by the invading enemy. We now know that many cases of throat disease which are bacteriologically distinct are identical from a pathological point of view. Paterson calls special attention to the supratonsillar fossa, an anatomical space which is occasionally to be found just above the tonsil between the pillars of the fauces at the apex of the interstitium. In the development of the parts about the pharynx we have the arcus palato-glossus, formed from the second visceral arch. The palate, growing as a fold from the upper jaw, crosses this arch, as well as the corresponding second cleft, and divides it into an upper and a lower part. The remains of the cleft above the palate form the fossa of Rosenmüller; below the palate lymphoid tissue develops, forming the tonsil and the remainder of the cleft at the upper part constituting the supratonsillar fossa. This space is therefore the remains of the second visceral cleft. That part of the tonsil which presents toward the fossa has an arrangement of structure which differs somewhat from that of the rest of the organ, and this is a point of great practical importance. The lymphoid tissue is in the form of a very loose, open network, much less compact than the lower part of the gland. Above it is spread out along the walls of the space in processes like fingers and toes, or like miniature columnæ carneæ and musculi papillares. The lacunæ freely communicate with each other and are themselves of large size. As they pass down into the substance of the tonsil they narrow, while some run downward to open by small mouths on the surface of the organ. Hence the products from the upper follicles tend to find an outlet in the fossa rather than on the surface of the tonsil.

The consequence of this peculiar anatomical arrangement is that the fossa is frequently blockaded by plugs, which become aggregated into cheesy matter, readily decomposing and becoming very offensive. They set up irritation, and, if not artificially removed, may lead to the formation of tonsilloliths.

Careful dissection frequently shows that the smooth wall of the fossa, composed of mucous membrane, is reflected on to the deep muscular tissue and areolar structures. It may come in contact with the superior constrictor of the pharynx. This explains the fact that these structures are not infrequently involved in the common "quinsy" sore throats. The fossa often extends a variable distance into the soft palate. The "chronic abscess of the soft palate," about which much has recently been written, is doubtless nothing but an occluded supratonsillar fossa, the contents of which have become purulent, as regularly happens whenever the outlet to a mucous cavity becomes stopped up. When the pharynx is in a normal condition, the cavity of the fossa is freely open to the buccal cavity. There is no accumulation of secretion and hence no irritation. Under the opposite conditions plugs form of epithelium, leucocytes, mucus, lime salts, and bacteria.

Through the fossa doubtless enters the tubercle bacillus, setting up a cervical adenitis, which is without any question the most frequent cause of enlarged glands in the neck. A thorough curettage of the fossa is often followed by subsidence of these enlargements. Mere removal of a portion of the tonsil with the guillotine does not effect the same result, unless by this procedure the cavity of the fossa is freely laid open. The operation of tonsillotomy, as generally performed, often fails to reach the top of the gland, and unless this is removed the radical cause of many throat inflammations escapes notice.

THE STAMPING OUT OF YELLOW FEVER IN CUBA.

If the only outcome of the present war were the disappearance of yellow fever from Cuba and the cleansing of the pestilential port of Havana, this country would not have fought in vain. That Havana in its existing unsanitary condition is a menace to every neighboring people and State, is an assertion that can be made without fear of contradiction. That both the town and harbor by the application of a little engineering skill can be rendered as healthy as any in the South, is, in the opinion of experts, quite practicable; but that any steps tending in this direction will be taken under Spanish rule is just as surely not to be looked for. Therefore the sooner this rule ceases in Cuba the better it will be for the public health of America and of the world at large. If proof were needed that yellow fever is essentially a disease which flourishes amid filthy surroundings, and that when these favoring conditions are removed abates and in some instances wholly disappears, we might cite Jamaica, Mexico, and the Danish West Indian islands as examples of the good results following proper sanitary measures. Indeed, north of the equator Havana stands as almost the sole and certainly as the chief source of this particular form of danger to the commercial nations of the world. From its proximity to Cuba, this country has been the principal sufferer from Spanish neglect of the laws of health, and undoubtedly whatever form of government may be decided upon for Cuba, the authorities at Washington will insist that the unsanitary conditions now prevailing at Havana shall no longer continue. Many suggestions have already been made regarding the sanitation of Havana, and it is claimed by those experienced in such matters that there are no difficulties in the path which cannot easily be overcome by American ingenuity and perseverance. The geographical configuration of Cuba, with hills of a considerable height at a short distance from the coast, lends itself to an efficient system of drainage.

Dr. George Homan, of St. Louis, read before the Medical Society of the Hospital Alumni of that city, on May 5th of this year, a paper entitled "The Sanitary Redemption of Havana," in which the need of reform is eloquently pointed out, as also the means whereby the desired end may be reached. He says: "Yellow fever, being essentially a disease of sea level, thriving best in combined moisture, filth, and heat, clinging especially to the foreshore, wharves, docks, ship holds, etc., Havana presents special conditions for its growth and harboring, and therefore requires special means for its eradication. This implies one or two things: to wit, either that some method shall be found by means of which the waters of the bay will be regularly and frequently changed, or else that the pollution now poured into it shall be diverted and safely disposed of elsewhere. . . . To effect the former, it has been proposed to cut a canal leading from the bay to a point on the north coast, with a view to establishing a current toward the Gulf. . . . The other alternative is the diversion of the sewage now delivered into the bay and its disposal elsewhere without prejudice to public health. This would involve the construction of an intercepting sewer along the water front to receive the outfall of drains carrying domestic and manufacturing waste, and is a measure so commonly resorted to that no novelty presents itself in connection with the suggestion."

Whichever method is adopted, provided that it is effectual, matters little, but that the present Spanish "let-things-slide" way of management is intolerable and should no longer be permitted to continue is the opinion of all civilized peoples. However, a radical change will soon be made, and we have every reason to believe that yellow fever will be driven from its last stronghold; in fact, it may not be rash to predict that, if the Brazilian sanitarians can be awakened to their duty, many of those now living will see the day when yellow fever will have been stamped out and mankind delivered from one of the most deadly of the tropical scourges.

PRACTISING ABORTION FOR A LIVING.

The case of Dr. Collins, who has recently been sentenced in England to a term of seven years' penal servitude for performing an illegal operation upon a woman which resulted in her death, has once again attracted attention in that country to this too frequent form of crime. The *Times*, commenting on the prevalence of abortion among the women of the upper classes in England, says that these cases throw a lurid light upon some of the consequences of modern luxury and upon some of the standards of morality which are accepted in certain circles of modern life. These words, we fear, will apply with equal force to the upper classes of America. With regard to Great Britain, and especially London, it has been for long a matter of common knowledge that there are medical men who are willing for the sake of gain commensurate with the risks they run to commit the crime of fœtal murder. The men who thus prostitute their abilities are either those who, like Collins, have lost their reputation and are unable to practise their profession in a legitimate manner, or those who are driven to these evil ways by the stress of poverty. But although their conduct is of course indefensible, it must be said that much of the blame rests with the women themselves, who, determined not to undertake the duties of maternity, tempt weak-minded medical men by large offers of money to commit this detestable crime. The judge, when summing up in the Collins trial, took occasion to say that "the woman who submits herself to an unlawful operation is guilty of felony just as much as the agent she employs," and it might go far to prevent the murder of the unborn were this aspect of the case more dwelt upon. The fear of disgrace and punishment in this world often acts as a more efficient deterrent from crime than does any dread of consequences in the hereafter.

Illness of Liliuokalani.—It is reported that ex-Queen Liliuokalani, of the Sandwich Islands, who recently returned to Honolulu, is suffering from a malignant growth in the neck.

CHEMICAL AND UROTOXIC INVESTIGATIONS OF FATIGUE IN THE HUMAN SUBJECT.

During the six-day bicycle race which took place in New York City some few months ago, Dr. Bookman availed himself of the opportunity thereby afforded to investigate extreme muscular, nervous, and mental fatigue, from the chemical as well as from the urotoxic point of view (*State Hospitals Bulletin*). As may be believed, the race in question afforded an excellent occasion for making such investigations, and the conclusions arrived at should prove of much practical value. When it is stated that during the six days of racing the subject selected for the observation was off his wheel less than half a day, and that he slept a little less than five hours in that time, it will be seen that the selection was a wise one. From a careful examination of the urine, Dr. Bookman made the following deductions: That the metabolism was greatly reduced in its production of sodium chloride, uric acid, phosphates and urea, total solids and water. This is explained as due to the perspiration, carrying off the phosphoric acid and possibly conveying with it sodium chloride and water, in addition to small amounts of urea and solids which might have been also secreted in the perspiration, thus robbing the urine of its normal amount of these constituents. The small amount of uric acid found is accounted for thus: As there is no possibility in cases of extreme muscular exertion for the metabolism to possess a low oxidizing power, it is self-evident that the uric acid, which is a less highly oxidized product than urea, cannot remain in that state, it will therefore be completely oxidized to urea. Dr. Bookman then proceeds to say:

"It will therefore be seen that the metabolism has not been impaired whatsoever in this case, the variations in the amounts of the few constituents mentioned being easily explained by natural processes occurring in the body of the person engaged in this exercise. We may thus infer that no injury has been done to any organ, since this would have manifested itself in our investigations."

Further proof is, however, afforded on this point by a series of experiments on rabbits, made by Dr. Bookman, which showed beyond doubt that the urine of man examined exhibited a lower toxicity than that of the normal subject. Finally, Dr. Bookman inquires: "Does the overexertion in cases like this produce any effect which may be deleterious to the human system, and can the body, by careful training, not accustom itself to this, regarded by many as an almost superhuman performance?"

Busy Doctors.—Two healers of men, each yearning for good works, met on the highway of a great city, and one forthwith said unto the other, "Art thou busy?" Whereupon he that was accosted replied, "Yea, verily." The father of lies, who was likewise passing that way, smiled and said thus unto himself, "Even so with me," and readily joined himself to each of them; and all went their way together.

THE MEDICAL DEPARTMENT OF THE ARMY.

We are pleased to give the surgeon-general and Colonel Senn the amplest opportunity for direct explanation. The facts so authentically stated by them on pages 213 to 215 of this issue will doubtless tend to place the medical department of the army in its proper light before the profession and the public. Our sole purpose in writing the editorial was to get at the bottom of the numerous charges of neglect of the sick and wounded by inviting an official answer to our query. So far we have succeeded in our purpose. We are most happy to learn from them that at least the medical department of the army is not to blame for any dereliction of duty or lack of preparation for emergency. We are always willing to hear both sides of any question, our only object being to get at the truth. Every incentive for discussion is perfectly legitimate when such an end is in view. For the present and in the same spirit, we are willing to rest the question, pending the possibility of future developments bearing on the point at issue.

News of the Week.

The British Medical Association held its sixty-sixth annual meeting last week in Edinburgh. In another column will be found full abstracts of the addresses delivered in the general sessions. These we are enabled, through the courtesy of the editor of the *British Medical Journal*, to present to our readers in advance of the special report which has been made by our own correspondents and which is now on the way.

An Invalid's Dietary.—When the cable first announced that Prince Bismarck was very seriously ill, it was stated, in confirmation of the report, that his diet for that day consisted of ham, caviare, eggs, beer, and champagne, but that he had foregone his favorite pickled pigs' feet.

Drs. Bowditch, Osler, and Roddick Honored.—The University of Edinburgh, on July 30th, conferred the honorary degree of doctor of laws on a number of men who had been in attendance at the meeting of the British Medical Association, among whom were Drs. Henry P. Bowditch, of Boston; William Osler, of Baltimore; and Roddick, of Montreal. The last named was president of the association at its meeting in Montreal last summer.

The St. Patrick's Insane Asylum, in Dublin, which was founded in 1750 with a bequest of £12,000 by Dean Swift for the benefit of the imbecile and insane, has just acquired a mansion surrounded by two hundred acres of beautiful grounds at the suburb of Lucan, and this is to be used as a convalescent home for the asylum for the benefit of those patients who are likely to profit by change of air and scene. This is the first time such a step has been taken in connection with an Irish insane asylum.—*The Hospital.*

Three Views of the American Medical Editors' Association.—The meeting was remarkably well attended, and a vein of unusual seriousness regarding

the ethics of advertising was exhibited. The expression of this took the form of the following resolution, which was unanimously adopted:

"*Resolved*, That matter which, in the judgment of the editor, is clearly in the nature of an advertisement or reading-notice shall be excluded from the regularly paged parts of the journal and placed exclusively in the advertising pages."

Upon adjournment the members and their guests repaired to the banquet hall, where plates were laid for one hundred and fifty.—*Nashville Journal of Medicine and Surgery.*

In connection with the meetings of the American Medical Association there are a number of other medical societies that hold their meetings at the same place, and nearly at the same time, for the convenience of the members who belong to two or more of the organizations. Among these are the American Medical Editors' Association, the literary, scientific, and journalistic virtues of which seem to be satisfied with a banquet. At the meeting this year a slight spasmodic quiver of intellectual life was momentarily shown in a resolution to exclude reading-notices and advertisements from the reading-columns, but exhaustion and collapse immediately followed when it was also proposed to exclude from the advertisement columns advertisements of secret remedies and those appealing directly to the lay public. This brought a ludicrously hasty supply of the undebatable motion to adjourn.—*Philadelphia Medical Journal.*

This association did not accomplish very much at this meeting outside of enjoying a first-class banquet. Certain steps were taken which we believe will, however, make this association a power in the land. A committee on revision of the constitution and bylaws was appointed by the incoming president. This committee consists of Dr. I. N. Love, St. Louis; Dr. Dillon Brown, New Jersey; Dr. Joseph Mathews, Louisville; Dr. Henry B. Coe, Portland, Ore.; and Dr. George Simmons, Lincoln, Neb. This committee will not only draw up a revision of the constitution and bylaws, but it will frame a platform which, when adopted, will be presented and will be in the hands of every medical editor in the United States. It will tell the relation of the editor to the advertiser and of one editor with another editor. . . . A resolution at this meeting was passed derogatory to the publication of reading-notices. The officers of the association for the ensuing year are: Dr. Thomas H. Hawkins, Denver, *President;* Dr. George Simmons, Lincoln, Neb., *Vice-President.—Denver Medical Times.*

The Gorgeous Toggery of an F.R.C.S. — It is announced that the new gown to be worn by fellows of the Royal College of Surgeons on ceremonial occasions will be of black stuff with crimson satin facings of a regulation shape and shade. Fellows who are graduates of any university may wear, instead of the fellow's gown, the gowns representing their degrees, provided they are more attractive in appearance than the former. The democratic simplicity of the proposed button of the American Medical Association is in marked contrast to these variegated garments, and yet there are some modest members of the A. M. A. who object to being labelled even by a button.

German Commercialism.—Another illustration of the degradation of German science, which has been so conspicuous in the open alliances between Koch and other bacteriologists and the manufacturing chemists, is furnished by the attempts of Behring to establish a monopoly in diphtheria antitoxin. After many failures he has at last secured a patent on the manufacture of this remedy in the United States, and now thinks he is in position, with loaded syringe, to demand of every defenceless babe its money or its life. We do not believe the courts will legalize any such impudent attempt at brigandage.

Fears for Antarctic Explorers.—It is reported from Antwerp that the gravest fears are entertained there for the safety of the steamer *Belgica*, which sailed on August 15, 1897, bound for Graham Land with the Antarctic expedition on board. It is feared that the ship has been lost or is locked up in the fields of ice. Dr. F. A. Cook, of Brooklyn, is the surgeon and ethnologist of the expedition.

A Light Weight.—A baby was born in a Newark hospital recently, whose weight at birth was forty ounces. The father and mother are Italians, aged respectively seventeen and sixteen years.

Death from Nostalgia.—A dispatch to the adjutant-general of the army from Santiago recently stated that a private in one of the Massachusetts regiments had died of homesickness.

A Supply Boat for the National Relief Commission.—Mr. A. Van Rensselaer has placed his yacht *May* at the disposal of the National Relief Commission of Philadelphia, for use as a supply ship. The yacht was intended to sail this week, having on board Messrs. William Potter, Alexander Van Rensselaer, and Dr. George G. Groff, president of the Pennsylvania State board of health, as special commissioners representing the National Relief Commission at Porto Rico. They will establish a depot for the reception of supplies at Porto Rico. The *May* will carry an apparatus for manufacturing ice, which is to be used at the Relief Commission's storehouse in Porto Rico. An ice plant will also be sent to Santiago, which will be capable of manufacturing all the ice that is needed by the division hospitals at that port. This ice plant has been presented to the Relief Commission by a citizen of New York.

Dr. N. S. Davis has resigned the office of dean of the Northwestern University Medical School (Chicago Medical College), with which he has been connected since its foundation, and of which he has been executive officer since 1865.

Papers Read at the Meeting of the American Medical Association.—The contributions before the American Medical Association at the Denver meeting include a total of 711 papers, divided as follows: Practice of medicine, 45; surgery and anatomy, 71; obstetrics and diseases of women, 57; ophthalmology,

56; laryngology and otology, 38; diseases of children, 62; materia medica, 81: physiology and dietetics, 43; neurology and medical jurisprudence, 89; cutaneous surgery, 24; state medicine, 33; stomatology, 16.—*Medical Sentinel.*

The British Ophthalmological Society.—At the meeting of this society, held on July 8th, the following officers were elected: *President*, H. R. Swanzy; *Vice-Presidents*, Sir W. R. Gowers, Drs. Argyll Robertson, R. Marcus Gunn, R. Williams, E. Nettleship, Henry Eales, W. A. Brailey, Priestley Smith, F. R. Cross, and George Cowell; *Treasurer*, Dr. John Abercrombie; *Secretaries*, Dr. James Taylor and E. Treacher Collins; *Librarian*, W. Adams Frost.

Gift of a Hospital Ship.—The use of the steamship *Missouri*, now being converted into a hospital, together with the services of her crew and all the coal she may consume, has been given to the government without charge for as long a time as she may be needed, by the Atlantic Transport Line, of Baltimore, through Mr. B. N. Baker, the president of the company.

Camp Alger.—The typhoid fever at Camp Alger, Va., may fairly be said to be epidemic. The number of new cases reported has been nearly fifty a day, and any doubts as to the contamination of the water supply are now dissipated. Surgeon-General Sternberg has urged upon the secretary of war the necessity of withdrawing all the troops from the camp, the medical officers who have any knowledge of the conditions prevailing there being unanimous in their recommendations to abandon the present site.

The Sultan's Opinion of London Surgeons is apparently not what it should be, for it is said that when he telegraphed his condolences at the time of the accident to the Prince of Wales, he offered as a special demonstration of his solicitude to send the Turkish surgeon, Djemal Pasha, to attend the prince.

A New Camp at Montauk Point.—Surgeon-General Sternberg has reported to Secretary Alger favorably on the selection of Montauk Point, at the eastern extremity of Long Island, as an encampment for the troops under General Shafter in Santiago. The report says that the locality is healthful, cooled by breezes from the ocean, and ample in area for the purpose; it has a fine port and is easily supplied with good water.

The Sanitary Condition at Santiago at the time of the city's surrender was about as bad as could be imagined. The city has always been, at its best, a fair sample of Spanish unsanitation, but after a two-months' siege it was filthy beyond description. Heaps of ordure and decaying animal and vegetable refuse were everywhere, and the stench arising from them was enough to turn the Northern stomach. There is no sewerage system. The city drainage is all from the surface into the harbor, and the lower part of the city, through which much of the drainage runs, especially from the poor quarter around the bull ring, to the northwest of the city, is the seeding-centre of malarial, typhoid, and other low fevers. There are four hospitals in the city—the Civil Hospital, presided over by the sisters of charity; and the Military, Mercedes, and Conchas hospitals. In these four hospitals were 1,747 patients. When the notification of the proposed bombardment was received, every patient who could stagger out was driven into the streets. Among them were twenty lepers, who were in the Civil Hospital, and they are said to be still at large.

A Field Hospital at Montauk Point.—A medical officer has been sent from Washington to establish a field hospital, with accommodations for five hundred patients, at Montauk Point, which has been selected by Surg.-Gen. George M. Sternberg as the site of the camp for General Shafter's fifth army corps as soon as circumstances admit of its being brought North.

"The Woman's Medical Journal."—Mrs. Margaret L. Hackedorn writes us that the only change that has been made in the editorial staff of this journal is that the writer succeeds Mrs. Murphy as managing editor, the other editors continuing under the new management. The policy and general make-up of the paper will remain unchanged.

The American Electro-Therapeutic Association.—The eighth annual meeting of this association will be held in the Library Building, Lafayette Square, Buffalo, on September 13, 14, and 15, 1898, under the presidency of Dr. Charles R. Dickson. In addition to a large number of papers there will be a series of ten-minute discussions on electro-therapy, including effect of electricity on tissue metabolism, electro-diagnosis, diseases of the nervous system, diseases of women, genito-urinary diseases, malignant growths, orthopædic uses, diseases of the eye, etc. Among the entertainments provided there will be tally-ho coach drives about the city daily, a public reception on Tuesday night, an excursion down the Niagara River, and a reception at the Island Club, Grand Island. An excursion train for the accommodation of members and their families will leave New York on Monday morning, September 12th. Information concerning tickets, etc., may be obtained from Dr. Robert Newman, 64 West Thirty-sixth Street. The secretary of the association is Dr. John Gerin, 68 North Street, Auburn, N. Y.

Attempt on the Life of a Physician.—Dr. E. D. Skinner, of Mineola, Long Island, one of the coroners of Queens County, was shot in his own house, a few days ago, by an unknown assailant. Although the wound was a very serious one, the patient is doing well and his recovery is hoped for. Dr. Skinner was born in Greenport, Long Island, in 1838, and was graduated from the Berkshire Medical School in Pittsfield, Mass., in 1858. He was for a number of years health officer of the town of Hempstead, and was elected coroner in November, 1896. He is ex-president of the Queens County Medical Association.

The Yellow Fever at Santiago still continues in mild form, as far as can be learned from the meagre reports sent by the sanitary authorities. The number of "fever cases" is reported as between three and four thousand, but most of them are of typhoid and malarial fevers. The deaths from all causes in the army numbered fifteen on August 1st.

A Silly Performance.—On Monday last a woman left New York at midnight on a bicycle, and reached Boston at three-quarters of a minute before midnight, lowering the previous record of twenty-four hours four minutes by four and three-quarters minutes. How much she reduced her allotted span of life by this senseless feat it is impossible to say, but it was doubtless several times as many years as minutes by which she lowered the record.

Arrest of a Prescribing Druggist.—A druggist was recently arrested and held in $100 bonds for trial in special sessions, on a charge of violating the law forbidding druggists prescribing for patients. Two women agents of the Medical Society of the County of New York testified that the prisoner had prescribed for them, charging $2.15 for advice and medicine. The druggist pleaded that he only sold the women patent medicines, but the magistrate said that he had no right to prescribe, his business being merely to fill out prescriptions, and he was therefore held for trial.

Obituary Notes.—Dr. Charles S. Ward, of Bridgeport, Conn., died in that city on July 31st, at the age of fifty-five years. He retired from active practice some years before his death. He was a Yale graduate and a member of the Yale Alumni Association, the University Club, Society of Colonial Wars, and St. Nicholas Society of this city, and the Quinnipiac Club and the Graduates' Club of New Haven.—Dr. George C. Hubbard, assistant sanitary superintendent for the borough of Richmond, died suddenly at his home in Tottenville on August 3d. He was for nearly forty years one of the leading practising physicians in Richmond County. Dr. Hubbard was born in Ohio in 1831, and was a graduate in medicine of the University of the City of New York in the class of 1859. He was a veteran of the civil war, having served as assistant surgeon of the one hundred and sixty-fifth New York volunteers. After the war he returned to Tottenville and resumed his practice. He was physician to the Mount Loretto Home at Pleasant Plains. Dr. Hubbard leaves a widow and two sons.

Obituary.

WILLIAM PEPPER, M.D., LL.D.,

PHILADELPHIA.

Dr. William Pepper died suddenly on July 28th, of heart trouble, near Pleasanton, Cal., where he was passing a few weeks on a ranch to recuperate after a winter of more than usually arduous labor. Dr. Pepper, son of a physician of the same name who died in 1864, was born in Philadelphia, August 21, 1843, and was therefore within three weeks and three days of fifty-five years of age. He was a graduate in arts of the University of Pennsylvania in the class of 1862, and in medicine in the class of 1864. Endowed with great talent, supported by a genius for application, and aided by influential family and professional relations, he soon became recognized at home and abroad as one of the leaders of medicine in his native city. In 1866 he became curator and pathologist to the Pennsylvania Hospital, where he had served a term as interne, and the following year was appointed visiting physician and pathologist to the Philadelphia Hospital. In 1868 he first became officially connected as a teacher with the University of Pennsylvania, which owes in such large measure to him the high rank which it now holds among the universities of the country. In that year he was appointed lecturer on morbid anatomy; in 1870, lecturer on clinical medicine; in 1876, professor of clinical medicine; and in 1887, professor of the theory and practice of medicine.

In 1881 Dr. Pepper was elected provost of the University of Pennsylvania, and continued to discharge the onerous duties of that office, in addition to his labors as a teacher and practitioner of medicine, for thirteen years. When he assumed the burden of provost the university had 88 instructors and 981 students; when he retired from the provostship there were 268 instructors and 2,180 students on its rolls. The amount of land owned by the university increased during his term of office from fifteen to fifty-two acres, and its lands, buildings, and endowments grew in value from $1,600,000 to more than $5,000,000. One of the first and most notable additions to the university under Dr. Pepper's administration was the Wharton school of finance and economy. Then came the department of philosophy for postgraduates. The department of veterinary medicine was added in 1883, the school of biology and the department of physical culture in 1884, and the school of American history and the department of archæology and palæontology in 1891.

Among the additions under his régime were the biological laboratory, the school of hygiene, and an admirably equipped library building. This was erected in 1889, and about the same time the dental department came into prominence. His most important work, however, in the development of the university, was undoubtedly that accomplished in the direction of higher medical education. This advance was secured through the extension of the course of study to four years.

Upon his retirement from the provostship in 1894 he presented the university with a gift of $50,000.

Dr. Pepper took a prominent part also in public life. He was largely instrumental in founding the Pennsylvania Museum and School of Industrial Art, and was for several years a member of its board of managers. In 1882 he was a member of the assay commission of the United States mint. He was president of the first sanitary convention of Pennsylvania, and of the Foulke and Long Institute for orphan girls. He took a large part also in the organization of the Philadelphia Commercial Museum and was president of its board of trustees. He was recently mentioned quite prominently as a probable nominee for mayor of Philadelphia.

Dr. Pepper was widely known as a medical writer of great ability. He was the founder and first editor of the *Philadelphia Medical Times*, and edited two systems of medicine, besides being a frequent contributor of papers on various subjects to the medical press. He was medical director of the Centennial International Exposition in 1876, and for his services in connection therewith he received from the King of Sweden the decoration of knight commander of the Order of St. Olaf. He was president of the first Pan-American Medical Congress in Washington in 1893, and was one of the orators at the second congress in Mexico in 1896. He was a fellow of the College of Physicians of Philadelphia, a member of the American Philosophical Society, of the Pathological Society of Philadelphia, of which he was president in 1874-76; of the Academy of Natural Sciences, of the American Medical Association, of the Association of American Physicians, of the American Climatological Association, of which he was president in 1886; and of many other scientific bodies.

Society Reports.

THE BRITISH MEDICAL ASSOCIATION.

Sixty-Sixth Annual Meeting, Held in Edinburgh, July 26, 27, 28, and 29, 1898.

ADDRESSES IN THE GENERAL SESSIONS.

Mutual Obligations of the Profession and the Community.—Sir T. Grainger Stewart, of Edinburgh, delivered this, the president's address. He began with a welcome to the city, an ancient and famous seat of medical learning, and with an expression of thanks to the association for having called him to occupy a position which had been filled by Alison, by Christison, by Stokes, by Acland, and by many other illustrious men. He then adverted to the losses which the association had sustained in the deaths of many distinguished members, and especially of Mr. Ernest Hart, who during many years edited the *British Medical Journal* and took a leading part in the conduct of the association. No subject, he said, could more worthily form the topic of an address on an occasion like this than a consideration of the reciprocal duties of our profession to the community and of the community to our profession. The respective duties may be described in a single sentence. That of our profession is to do its best to prevent disease, to cure disease, and to alleviate suffering in individual patients; to protect the community against preventable maladies; to advance our knowledge; to train our successors, and to guard the portals of admission to our ranks. The duty of the community is to afford us every facility for so doing.

He purposed to speak briefly of each of these, and then to refer to the various organizations instituted by the profession and the community with a view to the fulfilment of their respective duties.

It is, to begin with, most desirable that a common understanding should exist as to the present position of the science and art of medicine. The days are past in which medical men were accustomed to make great claims as to their powers, arrogantly pretending to control processes of nature which we are really unable materially to influence. Our profession recognizes its limitations; none know so well as we how imperfect our art still is, and how little it can achieve compared with what we would desire. Still we know that medicine has advanced amazingly during the present century, and is advancing every day in all directions at an accelerated and ever accelerating speed. The annual death rate in England and Scotland has since 1855 fallen by more than one-fifth. The proportion of deaths from zymotic diseases as compared with other causes has diminished by more than one-third; the labors of members of our profession have mainly brought about these results. Even the great scourge of humanity, tuberculous disease, has been robbed of some of its terrors. The mortality due to it has fallen by one-third during the past thirty years. Our rapidly advancing knowledge is supplying us day by day with new precautionary measures which are certain further to diminish the frequency of the disease and its rate of mortality. The public takes cognizance of facts like these, and is therefore according year by year a higher measure of respect to our art, imperfect though we must acknowledge it still to be.

Individual Doctors and Individual Patients.—There is little need to enlarge upon the personal relationships of doctors and patients. The duties which the practitioner owes are universally recognized. He has to master the art of medicine to the best of his ability and then to apply his knowledge for the benefit of each individual who may come under his care. If we can claim that our duty is fairly performed at the present day, it is equally true that the public shows a generous appreciation of the services of individual doctors. It fully recognizes our honest good intent, and if it sometimes evinces less gratitude than we know or think we deserve, on the other hand it often accords us more; and if we treat our patients from the humblest to the highest with care, courtesy, and discretion, it will be found that, generally speaking, we have not to complain of any want of appreciation and gratitude.

The Profession and the Legislature in the Prevention of Disease.—The prevention of disease is in its practical results perhaps the most important of all our duties. It is our chief glory that we have been able to accomplish so much. It is our highest hope that we shall accomplish more.

The great group of diseases which owe their origin to invasion by pathogenic micro-organisms is in course of being rationally explained, and so it is becoming possible for us to take measures for their prevention. In some of them we can prevent the development of the organisms. In some we may hinder their multiplication and spread. In some we can block the channels by which they have been accustomed to find entrance into the body. In some we are able to modify the germ so that it produces when inoculated a milder disease, and yet a disease capable of conferring immunity against the malady in its ordinary form. In some we can interfere with the action of the germ even after it has been introduced, or counteract the poisonous substances which the germs generate. With regard also to the important group of diseases due to faulty chemical processes, we have learned much that is of service for prevention. Each discovery which renders causation of disease more clear contributes something toward its prevention.

Every member of the profession ought to be keeping his eyes open to the advances of science, always seeking for an explanation of the occurrence of disease, and especially of epidemic outbreaks, for by watchfulness in such matters mighty results can be achieved. The public may in many ways benefit from such discoveries and the precautions they suggest. Individual health, family health, social health, and national health may all be improved if the individual, the head of the family, the employer of labor, and the legislator duly study and act upon these lessons. But an intelligent appreciation of these subjects is not easily attained. Perhaps we are ourselves in some measure to blame for this, because our professional customs do not readily lend themselves to the issuing of clear and popular statements by leaders of medical opinion, in such forms as would enable the public to share our knowledge. We ought to take more pains to instruct the public in such questions.

In unnumbered ways may intelligent and well-instructed men ward off dangers by attending to the hygienic rules of modern science. But, apart from all the private applications of hygienic laws, rises the question of the duty which the legislature owes to the facts of medicine. Now when every man is a king, when the whole people rules, it is perhaps not so easy to attain the results that we desire. The whole community must to instructed before the lessons can be used to good purpose. It is our task to give that instruction; it is that of the community to give effect to what we have taught.

With regard to the question of penalties for violation of health laws, many suggestions have been made, but there is a more excellent way. By steady perseverance in the instruction of the people, and showing them the effects of the improved legislation, and getting them rightly to understand the question in all its bearings on themselves and their children, they will

become so convinced that they will not only avail themselves of the offered protection, but will demand wider and more effective legislation. The legislature should boldly accept the principle that, as it is mainly guided by the opinion of lawyers as to legal questions, by those of soldiers in matters military, by practical seamen and engineers in matters concerning their department, so in medical questions they should look for guidance to the medical profession, and give effect to its matured opinion.

The Acquisition and Extension of Knowledge.—Another duty recognized from earliest days is that of extending, increasing, and deepening our knowledge. The *mens medica* is an inquiring mind, and the nature of our training and of the problems which daily confront us stimulates inquiry. Original observation and research are being carried out in unnumbered centres throughout the world. The mediæval methods of building systems or theories upon slight or fanciful foundations have been replaced by the Baconian methods. To these the world is indebted for boundless benefits. Every great hospital has been for long used as a field of accurate and painstaking clinical observation, and in many of them and in every university and school laboratories of research have been established and original work has been incessant. It is much to be desired that the community were more appreciative of the value and importance of such work, that there were less of ignorance regarding the results, and less prejudiced opposition to the methods employed; but in this respect also, as the fruits become apparent, the value of the work is being admitted, and confidence and respect are deepening.

The Training of our Successors.—From the earliest days the instruction of future physicians has been recognized as one of our most important functions. At first it seems to have been accomplished by transmission from father to son or from master to disciple. Just as one sees in the present day among the Savoyards at Aix-les-Bains the fathers training their sons and the mothers training their daughters in their traditional methods of treatment, so the old-world physician handed on his knowledge. By degrees the training came to be intrusted to individuals specially set aside for the work, and teaching was gradually organized.

After touching briefly upon the history of medical education in Great Britain during the past three centuries, the speaker said that to-day the profession has organized throughout the country many great and famous medical schools, and all the universities devote themselves more or less to medical education. That work, of course, can never be successfully accomplished except where great hospitals exist.

He expressed the wish that all teachers could manage to make their instruction a training of the powers and mastering of the methods, rather than a loading of the memory with unnecessary facts and transient theories; and also that it were possible for the universities and schools to make more complete and satisfactory arrangements for post-graduate instruction, so that old students might return to the alma mater and pick up in the course of a few weeks instruction as to new methods and new facts whereby they might keep themselves more abreast of modern progress.

Medical and State Medical Organizations.—Under this heading Sir T. Grainger Stewart dwelt especially upon the growth and the objects of the British Medical Association, an organization which had fully justified its existence by the great good it had accomplished. He also referred briefly to the General Medical Council, which he thought had done good service to the profession and the state in the forty years since it had been created.

The Public Health Executive.—By this term the speaker meant all the officials who are intrusted with carrying out the laws relating to disease and its prevention. The formation of the department was—like most British institutions—an evolution rather than a creation; for when the government felt the need of establishing such a branch of the executive, it did not construct a new board or appoint new officers, more than was absolutely necessary, but rather laid additional duties upon boards and officials already existing.

He thought that the duties of the local government board might be simplified with much advantage. The department had grown so great and so complicated, and the importance of the work of some of its parts had become so much more appreciated, that it demanded reconstruction. The local government board should be intrusted with every question that bears upon public health. It should have two divisions—one dealing with the questions of local administration, and the other with the public health. The president of the board should be recognized as an official of the higher rank, and should indeed be not only a minister, but a secretary of state for the department. It would be a great benefit that he should be an officer of such dignity and influence that he would be able to secure in the cabinet and in Parliament due attention to the subjects with which he has to deal.

An Illustration of Mutual Duties Well Fulfilled.—In closing his address, the speaker presented an illustration of what he conceived to be the ideal working out of the mutual duties of a medical officer and of the department to which he stands related. "My friend Dr. Aitchison had in the discharge of his duties observed that the inmates in St. Cuthbert's Poorhouse were throwing out nitrogenous matter from the system in a proportion far beyond that which they were taking in by way of food. The nitrogenous waste was so great that the paupers might have been described as in a state of 'physiological bankruptcy.' In well-fed healthy individuals the store of glycogen within the organism is kept at a level which amply suffices to meet the requirements of the system, and even if on any occasion the daily supply falls short there is the fat stored within the body, which can easily be drawn upon as occasion requires. But beyond these are the nitrogenous tissues which are brought into use only when the other two sources of supply are exhausted, and are so used at great expense to the organism. Dr. Aitchison found that our paupers were not fed in such a way as to meet the daily expenditure; that whatever stores of fat they might at one time have had were completely exhausted before they had long been living upon the poorhouse fare, and that consequently they were obliged to fall back upon their nitrogenous tissues, to the great diminution of their energy and strength. Their output of nitrogen, instead of being a normal of, say, fifteen to twenty grains, was from thirty to forty grains *per diem*. He soon ascertained that this nitrogenous waste went on all the same, whether the food supply of nitrogenous material was given in proper quantity or deficiently or in excess. And by degrees he satisfied himself that the fault lay in the deficient supply of the fatty materials. He therefore provided for certain paupers an additional allowance of fatty materials in the form of suet pudding, and found the nitrogenous waste greatly diminished. He then was able to determine the amount of fat required, by noticing when in each case he got the nitrogen equilibrium established. These results were presented to the university in the form of a graduation thesis for the doctor's degree, and Dr. Aitchison received the degree with the highest honors. He then placed the work in the hands of the local government board. The board after consideration and conference sent the diets which he suggested to every poorhouse

in Scotland. If the authority of the board over the parish councils be supreme, as it ought to be, this improved diet will be everywhere adopted, and this whole matter will illustrate in an admirable way the efficient discharge of duty on the part of the medical officer and of the authorities under whom he acts, and at the same time the conferring of most important benefits upon the inmates of our poorhouses."

Conclusion.—With regard to the whole question of the relationships of the medical profession and the community, the speaker summed up by saying that "what we have to do in order to secure its perfect fulfilment is to discharge our part conscientiously and to the utmost of our ability. It is not by banding ourselves like a trades union and crying aloud about our wrongs, real or imaginary, but by the efficient discharge of our own duty that we shall in the end succeed. When each of us does his best for every patient and for the state, not with eye service as men pleasers, which we are so often tempted to be, but with a profound appreciation of our grave and sometimes awful responsibilities, shall we win the public esteem which will bring to our beloved science and art and to us the recognition to which they and we are entitled."

Address in Medicine.—Dr. Thomas Richard Fraser, beginning his address, said that when the association last met in Edinburgh the address in medicine was delivered by Dr. Warburton Begbie, who took for his thesis the inquiry, "Has the Practice of Medicine Made a Single Step since the Time of Hippocrates?" From his elaborate survey of the history of medicine, Dr. Begbie concluded that no general doctrine—chemical, physical, humoral, or physiological—had been propounded which satisfactorily explained the nature and production of disease; that therapeutic advancement had been obtained chiefly by the observation of patients, by adhesion to the classic method of rational empiricism; and that by this method such valuable accessions to the means of treating disease had been gained as the administration of turpentine in pulmonary gangrene and bronchitic affections; of quinine in intermittent fever; of iodide of potassium in syphilitic periostitis and thoracic aneurism; of bromide of potassium in epilepsy; and of cod-liver oil in pulmonary tubercle. Dr. Fraser thought it would not be without interest to consider to-day how far, and in what directions, medicine has chiefly advanced since Dr. Begbie delivered his address. The intervening period is the relatively brief one of scarcely a quarter of a century. It has, however, been signalized by a great increase of knowledge regarding the fundamental sciences of chemistry, physiology, and morbid anatomy; by the creation of pharmacology as a science of the action of remedies, by steady advance in symptomatology and diagnosis, and, above all, by so remarkable a development in our conceptions of the nature and production of many diseases that we appear almost to have attained a position, vainly sought for during centuries by our predecessors, of being able to formulate a doctrine of disease, sufficient to explain many of its forms, and to provide us with means for its prevention and treament.

It cannot be forgotten that the necessary pioneer work was undertaken amid difficulties of exploration in dark and unknown regions; and that but for this pioneer work the present generation would not have been able to reap so prolific a harvest of medical discovery. This indebtedness to our predecessors is nowhere more conspicuously shown than in the advancements that have been made in the diagnosis of disease. Observation, careful and intelligent, as practised by the fathers of medicine, had already constructed a nosology sufficient to distinguish the great majority of diseases, and so complete that it is doubtful if much advance could have been made if the methods in use at the commencement of this quarter of a century had alone been trusted to. The introduction, however, of physical aids to our senses, and of chemical applications and methods—each rendered possible by the growth of collateral science—has placed us in a position from which we have been able to advance in accuracy of diagnosis, and even in the discovery of new diseases.

By the apparatus now in use for blood determinations the condition of this fluid in regard to many of its most important constituents can be exactly determined, and information can be obtained valuable for treatment, and previously unattainable by any perfection of intelligent observation by means of the unaided senses. By means of the sphygmograph the physician is enabled to appreciate changes which are not only of the highest value in prognosis, but are also frequently sufficient either in themselves, or aided by the most superficial of further observation, to justify without auscultation the diagnosis of the cardiac lesion which is present. The ophthalmoscope has increased the certainty of diagnosis of many nervous affections and toxic processes, and some of the difficulties of clinical observation have been overcome by the radiograph, whose capabilities, however, are as yet undeveloped.

By the introduction of chemical processes applied especially to the examination of the stomach contents, and of the urinary and other secretions, diagnosis has also been advanced. The agglutinating effects of the blood serum in certain infectious diseases, as typhoid, Malta, and relapsing fevers, and in cholera and anthrax, upon their respective pathogenic organisms, and the application of chemical pigments to reveal the existence of the microscopically minute organisms of such diseases as pulmonary tubercle, pneumonia, and diphtheria, have removed many of the perplexities of diagnosis and rendered identification almost a mechanical art.

Diagnosis, however, deals only with symptoms, and until the true nature or course of the disease has been determined progress in treatment can be only tardy and unsatisfactory. There has been of late a great advance in the diagnosis of diseases of the nervous system, but it must be admitted that the gain to the patient from all this is in most cases very slight. The natural course of the disease is no doubt often beneficially modified, but usually to only a slight extent, unless surgical treatment is successfully applied, which is possible in relatively few cases. In those cases, however, in which it is possible to determine the actual cause of the disease, when remedies are employed which have been proved to be curative as regards that cause, the disease may in many instances be arrested in its progress, or may even be cured, provided the affected tissues have not already undergone incurable destruction.

The Toxic Causation of Disease.—It is especially interesting to recognize that the latter gratifying results are to be obtained when there is reason to believe that the disease has been caused by a toxic substance present in the body. Many of the more common poisons produce changes in structure closely simulating the changes of disease, as the peripheral neuritis, anterior cornual degeneration, granulo-fatty degeneration, and arterial sclerosis of lead; the liver steatosis and yellow atrophy of phosphorus, and the fatty degeneration and diffuse sclerotic hyperplasia of the liver; the peripheral neuritis and the atheromatous changes produced by alcohol in blood-vessels. By such facts it is strongly suggested that the structural changes found in many diseases may, after all, be mere manifestations of the action of a toxic substance. This idea is rapidly becoming the prominent doctrine of the pres-

ent-day conception of disease, and as investigation proceeds it is almost daily receiving support from new facts. Many of the poisons produced in the body, such as the ptomains and leucomains, are of the chemical nature of the previously known alkaloids, and not a few of them rival the vegetable alkaloids in toxic power and reproduce their leading effects. Nervin, for instance, is lethal in minute doses, and acts in many respects like pilocarpine; while muscarin finds its analogue in the active principle elaborated by poisonous fungi.

The organism, even in a state of health, is a veritable storehouse of these toxic substances. Many of its normal constituents are well-recognized poisons; many of the products of its glands contain toxic ingredients. Many of the substances formed in the processes of disassimilation are capable of disordering health, and even of endangering life; and in disorders of function, even if they amount to little more than mere disturbance of nutrition, poisons not found in the healthy body are generated, and produce the symptoms of disease.

The doctrine of the toxic origin of disease has also been applied to mental affections. Auto-intoxication from poisons produced in the intestinal canal is believed to be an important factor in the causation of insanity, and already neurologists, such as Nissl and Van Gieson, have expressed the opinion that the toxæmic theory is destined to clear away much of the present vagueness regarding the pathogenesis of mental disease. Further, it is not improbable that in cancer, auto-intoxication by a poison generated in the cancer cells, equally with and in some instances to a greater extent than structural degenerations of invaded tissues, accounts for the symptoms and for the fatal termination—a probability which has been strengthened by the separation from cancer of a substance possessing a hyperthermic and powerfully lethal action.

The widely acting pathogenic influence of poisonous substances has, however, received its most definite and convincing support from the remarkable discoveries in bacteriology which have signalized this period. The pathogenic action of microbes was at first attributed either to mechanical obstruction of the blood-vessels, caused by their accumulation in them, or to a biological action which enabled them to appropriate nutritive materials destined for the tissues of the body, and thus to deprive these tissues of life. It was subsequently proved, however, that their effects are mainly caused by the poisons which they produce. These poisons are of complex composition; some are alkaloids, and others modified proteids, and others, again, have altogether unknown chemical composition; and many of them are of extreme and almost indefinitely great activity. Like other poisons, they also are capable of producing structural changes. The doctrine of the toxic origin of infectious diseases is supported by an abundance of convincing facts; and it may confidently be anticipated that it will have an endurance which former systems of medicine have not possessed.

Large numbers of disease-producing poisons are thus ever present in the body, created by the normal processes of life, and abundantly produced by departures, even in themselves unimportant, from these processes. Many substances well known to have poisonous properties are intentionally introduced into the body, such as alcohol, tobacco, tea, and opium, while others, such as lead, accidentally find their way into it. The respiratory passages and intestinal canal are crowded with micro-organisms; they teem in the soil, air, and articles of food; many of them are producers of virulent poisons, and when they effect a lodgement in the body and find conditions congenial to development, they proliferate with so great rapidity that a single bacterium may in twenty-four hours have multiplied itself into many millions of separate toxin-creating organisms. In these circumstances it is of interest to inquire what defence we can oppose to these disease and death producing poisons. Instances have long been known of a possession of defensive powers against the ordinary poisons, organic and inorganic. Certain animals are able to receive with impunity large quantities of poisons, which in minute quantities are hurtful to other animals, as is well exemplified in the enormous quantities of belladonna and opium which may be administered without injury to herbivora. It is also notorious that man and other animals may become so habituated to the action of several toxic substances that in the course of time doses greatly in excess of the minimum lethal are no longer able to cause death or even much inconvenience. Explanations for these exceptional powers of defence have been found in the special activity of the processes of elimination, whereby the quantity of poison requisite to cause injury is prevented from being present in the blood; in an unusual power of producing decomposition, probably dependent on special chemical conditions of the blood; and on the property which certain organs, and especially the liver, possess of absorbing and retaining toxic substances. In the case of many organic poisons, absorption and diffusion are impeded by the walls of cells. These explanations, however, do not account for all the observed phenomena, and it must in the mean time be assumed that tissues may gradually become accustomed, possibly by exhaustion, to the perturbations produced by substances which modify their normal condition, so that by and by a tolerance is induced.

Acquired Immunity.—It had long been known that many infectious diseases conferred upon those who had suffered from them a power of resistance against subsequent attacks of the same disease. After the discovery had been made of the microbic origin of infective diseases, it was experimentally shown that if the microbes constituting the cause of any infective disease were inoculated into animals, not only were symptoms of the disease produced, but also the animal, if it survived, acquired a power of successfully resisting the morbific influence of the same microbes subsequently inoculated. It had likewise been found that each of these events could be reproduced by the filtered, and therefore microbe-free, solution in which the pathogenic microbes had been cultivated, and thus it had been demonstrated that neither the original disease nor the subsequently acquired production was actually due to the microbe, but to toxic substances produced by it.

From this position the further great discovery was made that the blood serum of protected animals, itself destitute of poisonous properties, when introduced into non-protected animals, conferred upon them a resisting power which might be so great that even large lethal doses of the virulent micro-organism and of its toxin no longer produced death or even symptoms of poisoning.

These remarkable results irrefutably demonstrate that infectious diseases are in their essence poisonings; they throw much light on the mystery of the nature of the protection acquired by attacks of infectious disease or conferred by vaccination; and they have not only at once led to valuable therapeutic results, but they indicate further applications, both in the prevention and treatment of disease, exceeding in their possibilities any expectations that had previously been originated by discovery in medical science.

As in the case of some of the ordinary poisons, mineral and vegetable, it may be admitted that a portion of the acquired protection is due to the tolerance brought about by the accustoming of the structures of

the body to the action of the poison; but this tolerance could not continue for the long periods during which acquired immunity sometimes persists after the infectious disease has been recovered from. It may also be admitted that pathogenic micro-organisms absorb and thus remove from the body certain constituents necessary for their growth and vitality, whose removal may render the body unsuited for the further growth of these organisms; but it is inconceivable that this cause could operate in the bodies of animals, which so rapidly change the composition of all their constituent parts, and that therefore the substances which have been removed would not very soon be again restored to the body, and thus render it vulnerable to fresh infections. The doctrine of phagocytosis, enunciated by Metchnikoff, in which protection is attributed to the power possessed by leucocytes of absorbing and destroying microbes, may to a limited extent account for the destruction of living microbes, and probably to a greater extent for their disappearance after life is extinct, but it can have little influence upon the soluble toxins, which have been proved to be in most cases the true cause of the disease symptoms.

The micro-organism of an infectious disease introduced into the body produces the characteristic symptoms of the disease, and if the animal recover he is found to have become protected against the disease, and in the case of the majority of infectious diseases the immunity lasts for many years. The pathogenic organism of the same disease cultivated outside the body produces a toxin which when administered to an animal likewise reproduces the symptoms of the disease; and if the animal recover, and further quantities of the toxin are successively administered, an immunity may be acquired so great that the animal suffers but little inconvenience when fifty times the minimum lethal dose or even a larger quantity of this toxin is now administered to it. The immunity acquired in the latter case is, however, brief compared with the immunity produced by the microbe from which the toxin had originated. In the case of the venoms of serpents—which in composition and in other important respects are analogous to the toxins of disease—the duration of immunity has been defined, and experiments have shown that if an animal be protected so as to survive the minimum lethal dose of the cobra venom, the protection produced against the same dose of venom does not last longer than a few hours; and even when the process of the immunization has been carried so far that the animal can survive four times the minimum lethal, the protection against this dose of venom exists for only thirty days. The protecting substance, antitoxin or antivenin, which appears in the blood after inoculation with pathogenic microbes, or after the injection of toxins or venoms, is chemically unstable, and is subject also to the general process of elimination. Its presence in the body is to be measured by days only, but the protection produced in a patient by an infectious disease may apparently endure for a lifetime, and the immunity from small-pox gained by vaccination for at least seven years. It appears to be impossible to explain these contrasting facts on any other supposition than that in the instances of prolonged immunity successive supplies of the antitoxin of the disease must be furnished to the body during the time that protection continues. It is not possible, however, that these supplies could emanate from the pathogenic organism itself, for the life of the host would not endure were they retained in the body in their condition of original virulence. Jenner himself believed that vaccina is a modified small-pox. The microbe of small-pox, like all other microbes, is greatly influenced by its surroundings when transferred from man to the calf. It is now known that it may gradually acquire the characteristics of vaccina, and elaborate substances which reproduce in man the protective effects of inoculation with human vaccine. The microbe of small-pox, therefore, has obviously become so modified that, while it can no longer produce a virulent toxin, it still retains the power of elaborating a protective antitoxin, and also retains sufficient vitality to reproduce its like through many generations in the human body.

Evidence pointing in the same direction has been obtained with other pathogenic microbes. Pasteur found that the microbe of fowl cholera, when treated in a certain manner, can have its virulence greatly lessened, and if it be then injected into the tissues of fowls only slight poisoning is produced. From fowls thus treated microbes are obtained also capable of producing only slight poisoning, and inoculations can be carried through a successive series of fowls with a like result. Each of these fowls has by this inoculation with a weakened or attenuated microbe become protected against the original and virulent microbe. In the case of the pathogenic micro-organism of anthrax, Pasteur discovered similar facts. If grown outside of the body at a temperature of 42.5° C. for eight days, this microbe could no longer produce the disease in susceptible animals, but it endowed them with a certain degree of protection against the original virulent microbe. Similar results were obtained with the microbe of hog fever, and it is important to note that a duration of immunity exceeding that known to be produced by any toxin was obtained, for the protection following inoculation of the attenuated microbe lasted for at least one year.

These instances are sufficient to show that immunity equally with poisoning is dependent upon a soluble substance produced by the micro-organisms; that the duration of even a high degree of immunity resulting from the introduction into the body of the immunizing substance as distinguished from the microbe is only of brief duration; and accordingly, with the existing evidence, it is impossible to account for the prolonged immunity following upon the recovery from many infective diseases, or from inoculation with vaccine lymph, otherwise than by assuming that so long as immunity continues the microbic sources of infective disease continue to exist in an attenuated form in the protected body.

Attenuation for the purposes of protection would therefore appear to be essentially a process in which the condition of life of the microbe is so modified that its capacity for manufacturing poisons is weakened or destroyed, while its disease-preventing properties are retained. Unless by education we can so tame and civilize a pathogenic microbe as to subdue its virulent and hostile disposition, while at the same time its beneficial and protective properties are left unimpaired, the hope of obtaining—as for plague, cholera, and tubercle—immunizing vaccines equal in efficiency to the lymph of vaccina will probably never be realized. The theory here suggested implies that long-enduring protection from infective disease cannot be obtained by the introduction into the body of either the poisonous or immunizing products of microbes—the toxins or antitoxins—but only by inoculation of such microbes as are capable in the body of assuming a non-virulent form, or of the microbe already converted into this form.

As having possibly a practical bearing upon the success of vaccination, Dr. Fraser said, in reference to the preservation of vaccine virus in glycerin, that it must not be overlooked that the powerful microbicidal action of glycerin upon the contaminating organisms of this lymph may in the course of time weaken or even destroy the activity of the specific organism by which the protection against small-pox is produced.

In the case of some diseases it is possible that the modification of the pathogenic power of the micro-organism necessary to convert it from a poison-producing to an antidote-producing agent cannot be accomplished in the body. Thus may be explained the failure of certain diseases to protect the body from subsequent attacks of the same disease, well recognized in the instances of pneumonia, influenza, rheumatic fever, and tubercle. On the other hand, the microbes of other diseases may in small numbers, and attenuated both in virulence and in power of conferring protection, persist in the body after convalescence has been established, and actually render it not only more susceptible to fresh infection, but also to a recurrence of the disease by auto-infection. Results obtained by experiments with snake venom support the former possibility, for, owing to some as yet unexplained individual peculiarity, an animal which has received a number of successive doses of venom, each considerably below the minimum lethal, instead of having thereby acquired protection, may unexpectedly exhibit serious symptoms of poisoning, and may even die when it receives a dose considerably below that required to produce death in an animal which had not previously received any venom.

Further, pathogenic microbes attenuated as to their virulence, but not as to their protective power, may enter the body, and render it immune by a process of accidental vaccination, and thus may be explained, without recourse to such unsatisfactory phrases as individual or racial peculiarities, well-authenticated examples, known to all of us, of repeated exposure to infection without the production of disease, and of the immunity enjoyed by the inhabitants of towns and districts daily subjected to the virus of typhoid fever, malaria, or yellow fever.

Address in Surgery.—Mr. Thomas Annandale, of Edinburgh, delivered the address, taking as his theme, "The Present Position of Surgery." There are now few diseased conditions, he said, in which surgery does not play a very essential part in connection with treatment, and there is scarcely a single organ of the body, internal or external, which is not the subject of successful surgical procedure. The brain, the organs of the chest, abdomen, pelvis—many of which were so long looked upon as belonging solely to the province of the physician—are now shared, if not absorbed, by the surgeon as regards the relief or cure of their diseases.

The Scientific Aspect of Modern Surgery.—It must be acknowledged, the speaker said, that for the marvellous advances in connection with present surgical practice we are largely indebted to those who have carried on experimental and other research in connection with the sciences of chemistry, physiology, bacteriology, anatomy, and pathology.

In the early stages of antiseptic surgery failures undoubtedly occurred, but such failures when honestly investigated were important as lessons, and the consideration of their causes did much to establish on a successful basis the great principle. There were some who, ignoring the principle of the antiseptic treatment and also ignoring the established principles of surgery, preached and practised that the mere application of carbolic acid or other antiseptic lotion was all that was required, and when such treatment was unsuccessful condemned the whole system. Twenty-one years ago Mr. Annandale had said: "It is not the mere application of carbolic acid in one form or another which constitutes the antiseptic treatment, but the true antiseptic surgery is that which is the result of many years' patient, thoughtful, and scientific research; of vast, laborious, and expensive experiments, and of much and valuable time spent in clinical observation on the part of Mr. Lister." No one rejoiced more than Lister himself when it was proved that his great system could be successfully simplified, and so used under circumstances which formerly made it difficult or impossible to carry it out.

But while the external application of antiseptic means and precautions is now thoroughly established upon a simple and at the same time efficient basis, it must not be forgotten that injurious organisms enter the body and tissues by other channels than through external wounds or breaches of surface; and therefore it is that the science of bacteriology becomes so important. We have learned that organisms of various kinds gain entrance into the tissues or organs of the body, and that some special condition of these tissues and organs favors their development and multiplication. In the majority of instances the bad effects are produced not so much by the multiplication of the organisms themselves as by poisons or toxins caused by their presence or behavior in connection with the tissues. Further, it would appear that the resulting toxin may not itself be the poison, but give rise to chemical changes and products which are the real cause of the injurious results. It is also an interesting fact that the presence of more than one form of bacillus may either increase or destroy these injurious results.

Continued careful study of anatomy and pathology and accurate clinical observation should do something to increase our knowledge, but the speaker believed that much of our future trust for light must be in connection with physiological chemistry, which we hope may be able to teach us more of the origin, causation, and behavior of the various toxins, and of the action of the tissues in connection with them, so that we may be able to counteract their injurious effects by appropriate treatment.

At the present time we endeavor to treat the general effect of these toxins, either by the administration of remedies supposed to produce a general antiseptic effect or by the introduction into the tissues by subcutaneous injection of so-called antitoxins. This latter treatment has met with an encouraging amount of success, especially in certain directions; but its position is still uncertain, and much further experience is required to place it on a safe and reliable foundation. All who have employed the antitoxins in connection with surgical conditions must have encountered this uncertainty as to their action. In the speaker's experience some severe cases of septicæmia had recovered after the injection of an antitoxin, but other cases very similar had recovered without any antitoxin being used.

Another important subject for further study is the physiological action or connection bteween one tissue or one organ and another. May not further experience of this connection help us in carrying out treatment based upon this connection? Having thought it his duty to test the suggestion of Beatson for removing the ovaries in cancer of the female breast, incurable by other means, the speaker carried it out in three typical cases, and his experience was that, though the disease was not cured, the removal of the ovaries had certainly some influence upon the diseased local condition.

The remarkable results obtained by the use of thyroid extract should be an encouragement, and it has already been proved that certain vegetable products act as powerful antitoxins. If it can be discovered that certain drugs can be safely and successfully used as antitoxins, it will much simplify our treatment, for such remedies can be more easily and more certainly handled than the antitoxins now in use.

The treatment of sarcoma or other new growths by means of toxins is another subject of great interest to the surgeon. The results obtained by Coley and oth-

ers by the mixed toxins of streptococcus and prodigiosus give cause for hope, for under the use of these toxins growths have undoubtedly disappeared, but sarcomas and other growths do occasionally undergo a check in their development, and even disappear without any apparent cause. In all probability these occasional occurrences are the result of some physiological or bacteriological action which is not perceptible.

The Practical Aspect of Modern Surgery.—If asked to define any special characteristic which will apply to the practice of surgery at the present day, the speaker would be inclined to say simplicity—antisepticity of course being granted—a simplicity in which are included operative procedure, instrumental assistance, and after-treatment. It is true that from time to time new procedures and new instruments are suggested, but as a rule it will be found that if practical surgeons adopt and employ them they are in the direction of continued simplicity with some addition to their efficiency.

The practice of surgery has not only reached a high standard of improvement, but it has much widened its area as regards both the number of its procedures and the number of those who practise them. Lately surgery proper and what is called gynæcology have been gradually merged into one another, so that the line of demarcation between them is scarcely apparent. Both require for their proper and successful performance that training and those qualities which make the good surgeon. That physicians under the designation of gynæcologists should now become operating surgeons is perhaps only a little return for the fact that surgeons have so extensively and successfully invaded the province of physicians, and as time goes on some balance may perhaps be arrived at which, while guarding the interests of the public, will satisfy the representatives of medicine and surgery.

In referring to anæsthetics, Mr. Annandale expressed the opinion that chloroform held the field as the best general anæsthetic in connection with surgical procedures; and although he had met with a few fatal results from its administration, he had most thorough confidence in its safety if carefully used and its effects diligently watched. Fatal results will occasionally take place in connection with all anæsthetics, and these fatal cases may be divided into (1) avoidable, (2) unavoidable. The avoidable ones are those which are due to careless administration or to neglect of means to prevent blood or other matters entering the air passages. The unavoidable cases are the result of heart failure from fatty or other conditions, and occasionally they may be caused by cerebral conditions. In the majority of these unavoidable cases it is impossible by any external examination prior to giving the anæsthetic to discover the condition which has led to the fatal result.

The Moral Aspect of Modern Surgery.—The speaker said he would make no apology for offering a few remarks under this head, for he was decidedly of opinion that it becomes every member of our profession who has the true sense of relieving suffering humanity at heart, and who desires to maintain the honor and reputation of his profession, to speak out with no uncertain meaning in regard to every action which is dishonest or dishonorable or tends to be so. It is sincerely to be regretted that in some quarters the true, honest, and high feeling which should be the standard principles of the members of our profession is in the present day partially or wholly ignored, and in consequence the profession is not always respected as it should be and its members are looked upon by some as mere humbugs, in some cases not without reason, thinking more of fees and fee accumulations than of their patients' cure or relief.

Three causes influence this much-to-be-lamented evil which has insidiously invaded our profession, namely: 1, active competition; 2, untrained specialism; and 3, society demands.

There can be no doubt that the number of medical practitioners has increased, but the number of medical men as compared with the population is very little changed from what it was twenty years ago. The active competition is not so much due to the increase of medical men as to the fact that in many instances the most of the remunerative work is done by a few, which leaves much hard work and poor pay for the remainder of the profession.

The second cause is untrained specialism. Honest specialism has aided much the practice of surgery, and by honest the speaker meant such practice as is founded upon a thorough knowledge of all the different departments of the profession, and upon an honest study of all the circumstances connected with the various conditions which affect the organ or organs which are specialized. Specialism in the hands of qualified members of the profession, unless practised under these conditions, is simply quackery, and quackery of the worst kind, for it is carried on by those whom the public understand to be properly educated as regards their profession.

The third cause is society demands. A section of the public, or rather a section of what is termed "society," has done much to interfere with the proper feeling which should exist in our profession. The manners, qualifications, and doings of members of the profession are freely criticised at afternoon teas and other entertainments. One man is condemned and some supposed failures in treatment are magnified or invented, while another receives extravagant praise and many of his wonderful surgical or other procedures are lauded and not infrequently described, with marvellous details added. One is glad to think that in the majority of instances the surgeon or specialist has no art or part in such proceedings; but there are some who take advantage of such extravagant popularity, and, having become the fashion, trade upon it in a manner which is not consistent with the high feelings which should influence all our professional relationships. If any member of our profession encourages or takes part in society's ignoble life or actions, he is not worthy to belong to the profession and he certainly does not add to its reputation.

Address in Psychology.—Sir John Batty Tuke, of Edinburgh, delivered this address, taking as his title "Modern Conceptions of the Etiology of the Insanities." It was inevitable that from the earliest down to quite recent times the study of the insanities should be carried out on psychological lines. The prominence of the mental symptoms asserted itself, and cases of insanity were classified under the terms mania, melancholia, and dementia. Notwithstanding that these so-called forms were based on mere external appearances, these terms assumed the proportion of diseases. The symptom was the essence of the case, and the underlying causating condition was ignored. Undoubtedly to the public and the lawyer, the mental symptoms must always be the essence of the case; but to the physician they are not. He has to go farther back and seek for the *fons et origo mali*. Still in the hands of Pinel and his school the psychological method of study subserved important purposes; but this undivided adherence to the psychological principle of study led to "an undue love of minute detail," and consequently to undue extension. Instances in which intellectual deficiencies were not so apparent as changes in feeling and conduct were designated cases of "moral insanity," with such subclasses as pyromania, erotomania, kleptomania, homicidal and suicidal mania, and so on, irrespective of the clinical observation that no case of insanity exists without moral aberration, and that in

those cases in which moral obliquity is most prominent the intellectual faculty is also weakened, inasmuch as the patient is not able to recognize the nature of his immoral acts or weigh their consequences. Thus confusion became worse confounded, and fallacies arose within the psychological conception itself.

It is only during the last thirty-five years that the study of the insanities has ceased to be so distinguished, or at least that scientific data have been afforded which should prevent it being so distinguished, data which, although still far from perfect, have afforded starting-points to the psychiatric physician for the scientific study of his subject. It is of interest and importance to contrast the state of knowledge of the anatomy and physiology of the cerebral hemispheres in 1864 with that of 1898. Up to the former year even the rough naked-eye anatomy of the convolutions was chaotic, only some two or three gyri being recognized as distinct anatomical landmarks.

Great as has been the work of the anatomist, that of the physiological pathologist has been equally important. Hughlings Jackson's name must ever hold the foremost place in this department of science, and Fritsch, Hitzig, Ferrier, and Gowers would be the first to acknowledge that his induction opened up that field of inquiry which has been of such importance to the study of nervous physiology and pathology.

The physiologists of the psycho-physical school which arose as a result of scientific developments advanced the study of psychology so far as they ranged scientific data so as to add to the "provisional body of propositions" about states of mind necessary for their philosophy. Whether our knowledge of states of mind has been materially increased by the lucubrations of this school is open to question, but there can be no doubt that the views not only of the physiologist, but of all thinking men, have been enlarged by the application of the philosophic mind to the scientific position. Were it only that the world has had placed before it the proposition that the essence of mental life and the essence of bodily life are the same —namely, the adjustment of inner to outer relations— great gain has accrued to science and philosophy. But the change of conception of the nature of the insanities is much more due to the establishment of scientific data bearing on the antecedents of mental action than to the generalizations of the philosopher as to mental activities.

Time, the speaker said, would permit him only to allude to the observation around which all others centre—that is, the demonstration of the mechanism by which impulses are carried from the periphery to the cortex and from the cortex to the periphery. We know that series of fibres exist which, starting from the entire surface of the body, the muscles, and from the mucous membranes, are collected in the spinal cord, and pass upward to the optic thalami, whence they are distributed in three systems to the cortex. To take as an illustration only one of these "sensory" systems—that which passes directly to the Rolandic cortex without forming connections in its upward course with any other system of fibres. In the external layers of the gray matter these fibres come into relation with the dendrites of the pyramidal cells; but there is no anatomical continuity between the sensory fibres and the dendrons; they transfer impulses by contact. It is contended that the liberation of energy takes place in the dendrons, which, by their gemmulæ, are in close contact with the dendrons of other cells, forming what Foster terms "synapses." Be this as it may, impulses descend to the cell bodies, through which certain of the fibrils of the dendron pass to the descending axon—till lately spoken of as the axis cylinder—the fibrils of which are distributed to the periphery, throwing off collaterals to remote areas of the cortex. In order to obtain and maintain the conception of the mechanism of a circuit it might be well not to restrict the term "neuron" to the cell body and its dendritic processes, but to include in the term the ascending conducting apparatus, the cell body, and the spinal, cerebellar, and cerebral distributing arcs, and to regard the whole apparatus as a physiological if not an anatomical unit.

It is not necessary to consider where and how the transmutation of peripheral impulses takes place, but it is of importance to emphasize the statement that impulses are not generated in the cell body. As Gowers says, the old battery idea must be thrown aside. It may be regarded as the "vital centre" of the neuron, and, making allowances for the possible action of the dendrons, it may be held to be a receiver, conservator, and transmutator of energy, and a liberator and distributor of energy by means of its synapses with other pyramidal cells and, what is of supreme importance, with association cells. But all impulses come from without—a fact which must have important bearings on the question of the adjustment of outer to inner relations.

It is as difficult to estimate the influence of the developments of knowledge of the nervous system on the individual general physician as it is to gauge the influence of bacteriology. Our acquaintance with both these subjects is a recent acquisition. The latter is a new science, and in the case of many of us only its outlines are present with us. But its principles pervade the method of thought of the whole profession. So with the study of the minute anatomy of the brain: none but experts can be expected to be acquainted with the full details of its anatomy, but the great leading facts as to structure, and the facts, theories, and warrantable assumptions as to its actions have operated, and continue to operate, on the views of the specialty at large.

A strong indication of the awaking of the scientific spirit is afforded by the earnestness with which the study of the morbid anatomy of the brain is being prosecuted by the psychiatrist all the world over. The value of research into morbid cerebral anatomy has made itself so strongly felt that laboratories have been established in many asylums. As a consequence of this system of study, a vast change has come over the aspect of psychiatric literature. The journals of the day, instead of dealing largely with analyses of the mental condition of real or imaginary persons, with abstract considerations, and mere clinical details, are now mainly occupied by papers of a strictly scientific character bearing on the production of neuroses, and the reports of cases are rarely confined to a mere description of symptoms.

But the all-important question remains to be answered: What effect has the change in the principles of study had on general pathology, practice, and treatment? As regards general pathology the evidence is manifold. In former times the theory of the effect of the mind on the body held a foremost place and gave rise to many misconceptions; but now we recognize that the brain exercises trophesial functions over all the organs of the body, and we are alive to the fact that general degradations are referable to imperfect brain action, that they are secondary to the reduction of its nourishing action, and are to be treated accordingly.

In most of the recently erected institutions for the insane, at home and abroad, we find separate hospitals provided for the treatment of recent and acute cases. This surely marks the reduction of theory to practice. Instead of the subject of a recent attack of insanity being mixed up with the residuum of chronic cases, he is placed in a separate institution, where he is submitted to systematic treatment on thoroughly hospital

principles. But even with such appliances many of those working among the insane are heavily handicapped, as no provision is made by the public for the treatment of cases in the initial stages. Statistics show that the increase of chronic lunatics occurs among the poorer classes of society, and not among the rich. This is due to the latter being able to place members of their class showing indications of incipient insanity under systematic treatment at home during the prodromal stage; while the former are compelled to allow matters to drift till cases become more or less confirmed. If we exclude general paralysis and epileptic insanity from consideration, at least eighty per cent. of recent cases are amenable to treatment. But such treatment is necessarily costly, as it involves nursing, possible change of residence, and continuous medical attendance. This is out of the power of the poor to obtain. All general hospitals shut their doors against persons suspected of insanity, but the asylums cannot receive cases until the symptoms are so far advanced as to warrant certification; and, in England especially, the procedure for the transmission of insane persons to asylums is so absurdly cumbrous as to prevent many persons being placed under treatment until such time as the probabilities of recovery are seriously lessened or the case is hopeless.

If teachers conduct their courses of instruction on the general principles which govern the teaching of medicine, the general practitioner will soon be found treating the insanities as he does every-day disease, and we may fairly anticipate a reduction of the number of cases relegated to asylums as a consequence of early and rational treatment.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

PRINCE OF WALES SLIPS AND FRACTURES PATELLA—GOVERNMENT ABANDONS COMPULSORY VACCINATION—TEACHING TROPICAL DISEASES—THE EDINBURGH MEETING—DISPUTED WILL ON THE ALLEGATION OF HYPNOTIC INFLUENCE—MEDICAL COUNCIL—COURT PHYSICIANS—COLLEGE OF SURGEONS.

LONDON, July 22, 1898.

FRACTURE of the patella is just now interesting the public, on account of the Prince of Wales having met with this accident. Doctors are being asked all sorts of strange questions whenever the opportunity presents itself, and unless some fairly clear answer is evoked the interrogators look dissatisfied. They all seem to expect a precise prognosis as to the result and especially as to the time the prince may have to rest. One physician is putting his friends off with the statement that it is a purely surgical affair and they must apply to their surgical friends for information.

A precise statement of the case has been issued to satisfy the public anxiety. In the sudden effort to save himself from falling when he slipped on some stairs, the prince sustained a transverse fracture of the patella, near the upper margin of the bone. About one-fifth of the patella was separated, of a somewhat crescentic shape. The gap between the fragments was at first more than two inches, but in the course of four days diminished to one-fourth inch. Sir Wm. MacCormack, Sir Thomas Smith, and Sir F. Laking have charge of the patient, and yesterday Lord Lister joined in consultation, and approved everything that had been done. Of course it was a very unfortunate mishap, but so far there is reason to anticipate the best results.

The parliamentary news is most unsatisfactory. In obedience to the antivaccination agitators or worn out by their tactics, the government has given up compulsion. Step by step this strong government has climbed down on the question, but all its "graceful concessions" are no more efficacious than those it has made in other matters. The minister in charge pleaded the number of speeches made against the bill in the house, but he did not attempt to weigh them or estimate the authority of the speakers. Even after these the opponents are not content, and are going to move the rejection of the bill on the third reading. Perhaps it will be as well if they inflict a defeat on a government having a large majority, taking up an important question for the public health, and not having nerve enough to carry out its convictions. If the law is not to be improved, what is the use of meddling with it?

Sir W. Foster endeavored to carry a conscience clause, in the hope that if any sincere opponents were released from their duty to their neighbors and their own families all would work smoothly. He failed, and he appears not to have gauged the depths of the antivacs' fanaticism. His action has not had a good influence and he scarcely represents the view of the profession, though many were doubtless willing to accept the compromise and end the dispute.

The teaching of tropical diseases has come very prominently forward of late. As I have already reported to you, some of our medical schools have established lectureships on the subject. One of these has been accepted by Dr. Patrick Manson, whose book on the subject at once took the position of an authoritative manual. Mr. Chamberlain, as colonial minister, has not been oblivious to the importance of the study of tropical diseases in an empire which embraces so many climates, and he seems to consider that something more should be provided than the splendid training at Netley, which is, however, confined to medical officers of the army and the Indian forces. He is willing to make a grant from the colonial office toward meeting the need and suggests that the Seamen's Hospital might be utilized, and the *Times* has indorsed this view. The committee of the hospital is naturally desirous of such help to extend its work, and Sir H. Burdett appeals to the public for £10,000 to start and an income of £2,000 *per annum*. The hospital is not conveniently situated, and only a small proportion of the patients has hitherto been admitted for diseases that can properly be called tropical. The doubt, therefore, arises whether there will be a supply of clinical material sufficient to meet the requirements of the proposed special school. Malaria, dysentery, and sometimes beriberi may be seen there, but they are only a small part of tropical diseases. Others, especially acute cases, are rare, and a student might attend diligently for months without obtaining a practical experience of them. Still there is no telling what may be the development of a small beginning, and we may cordially wish it success.

The British Medical Association has formed a section for the Edinburgh meeting on the subject of tropical diseases. Dr. Manson is president of this new section and a number of practical papers have been promised. Three set discussions have also been arranged—viz., on unclassified fevers of the tropics; beriberi; and epidemic plague in India.

Sections on psychology and neurology have also been added this year. Altogether sixteen sections are arranged for, and the meeting, which is to occupy next week, is expected to be most successful. It can scarcely be otherwise, considering the many attractions of Edinburgh and its position as a great medical centre. Some have already started and others leave to-morrow. Those who remain are quietly discussing

the probability of getting away for the occasion or the advantages of some other form of holiday.

The case I mentioned of a will being disputed on the allegation that the deceased had been hypnotized has ended in favor of the medical man. Dr. Kingsbury, whose book on hypnotism you may be familiar with attended a lady for a considerable time. He tried to hypnotize her on several occasions, but stated in court that he always failed and according to the practice he had always inculcated invariably had a third person present. Great interest was evinced in the trial. Sir W. Broadbent and other medical men appeared among the witnesses. Under the will Dr. Kingsbury would receive some £30,000. The judge explained to the jury very carefully the law as to undue influence. The jury found that the will was duly executed, that that the deceased was of sound mind at the time it was executed, that she knew and approved its contents, and the residuary clause, so far as it benefits Dr. Kingsbury, was not obtained by undue influence.

Dr. Kingsbury is to be congratulated on the result and on the refutation of the injurious allegations levelled against him. The case shows the danger to which a medical man may be exposed by unusual gratitude expressed in the form of a legacy.

The Incorporated Law Society receives £5,000 a year to enable it to preserve the rights of the profession and maintain its honor. Dr. Farquharson asked the chancellor of the exchequer to provide a similar sum to assist the Medical Council to prosecute unregistered practitioners. The minister declines the invitation.

Sir Wm. Broadbent succeeds the late Sir R. Quain as physician extraordinary to the Queen.

Sir Wm. MacCormack, Bart., has been chosen president of the College of Surgeons for a third term. Mr. Pickering Pick and Mr. Howard Marsh are the vice-presidents for the ensuing year.

OUR BERLIN LETTER.

(From our Regular Correspondent.)

GERMAN PHYSICIANS AND THE ADMISSION OF WOMEN TO THE STUDY OF MEDICINE— BIOLOGY OF THE TUBERCLE BACILLUS—BRONCHIAL ASTHMA.

BERLIN, June 30, 1898.

THE study of medicine by women was recently the subject of a thorough discussion at the meeting of German physicians in Wiesbaden. The struggle to improve their material condition and to obtain equal rights with men has been the main factor in this rush for the scientific professions. Penzoldt, of Erlangen, the first speaker, thought that if the practice of the profession by women was at all desirable, it should not be confined to the medical profession alone. However, we need not fear that the number of female physicians will be rapidly increasing; we have but to note the figures in such countries as Sweden, where the study of medicine has been opened to them for decades. In Sweden thirty years elapsed from the passing of the enabling law until the first woman studied medicine. Penzoldt admits that woman are very diligent and capable of studying, but he regards them as far less adapted to practice. Here they are far behind the men. The friends of the woman movement claim that in certain diseases female patients only with extreme reluctance make a confidant of the male physician, and that therefore there exists a need for female physicians. Regarding this point it is shown that the German physicians with remarkably few exceptions do all they can not to wound the sensibilities of their patients. But where life and health are at stake, general customs and usage must for the time being be discarded. But Penzoldt does not believe that female patients would be any more likely to confide their delicate troubles to the female physician earlier than they would to the male, because, first, these troubles begin insidiously and imperceptibly, and secondly, the fear of an operation would tend to restrain them. The practice of children's diseases is to-day almost entirely in the hands of the male practitioner, and will probably continue so in the future, for here there is certainly no cause to withhold confidence. The prospects for the female practitioner are therefore not bright. If, however, women are to be admitted to the study of medicine, we ought at least to have the right to demand that the other professional studies be open to them, especially dentistry and pharmacy. And midwifery might be raised to a higher standard by the entrance of educated women. Penzoldt is an outspoken opponent of the admission of women to the study of medicine. While some speakers expressed themselves similarly, others declared there should be equal rights to all. Becker, of Berlin, wants the sexes to have equal rights; every one should be permitted to accomplish what he or she can. The woman movement has been started and no theses or resolutions can stop it. Finally the following resolutions were adopted by the society, which represents thirteen thousand and eighty-six physicians: 1. At present and until the law is more leniently framed for them, we need expect no more active participation from the women to be admitted to study medicine. 2. Should there be a more active participation on their part, it will result in more harm than good to the patients, and to the women themselves; there will be no benefit to German science, there will be a lowering of the medical dignity, and no advancement of the general welfare may be expected from such a source. For these reasons the society holds it undesirable that the first attempt to admit women to the study of the learned professions should be made in medicine. At least there should be a demand made to admit them at the same time to the study of all the professions. The following was added to these resolutions: The previous education, preparation, and examination must be the same for the women as for the men; especially must women not be admitted to the study of single branches of medicine, but equally with the men should be examined in all branches of medicine and surgery. The "Aerztertag" has been accused of having acted from a one-sided and self-interested narrow policy, and this opinion has been voiced in almost all the daily papers. Indeed, all signs indicate that the beginning of the new century will witness the unrestricted admission of women to the study of medicine.

Aronson communicated to the Berliner medicinische Gesellschaft at a recent meeting a most important contribution to the biology of the tubercle bacillus. Aronson first made mass cultures of this bacillus, obtaining in all about three hundred grams of pure growth. This he extracted with alcohol and ether. The ethereal extract when evaporated left a brownish, stringy mass behind, which equalled twenty or twenty-five per cent. of the total mass of original culture. Chemical examination of this mass showed that it was not, as Klebs had assumed, a fat, but that it contained seventeen per cent. of free fatty acids, while the remainder was a pure wax. The bacillus forms this wax even when grown upon inorganic culture media. It has staining-properties similar to the bacillus, *e.g.*, it stains with carbol fuchsin, which, however, is not set free or only with great difficulty in hydrochloric alcohol. Aronson was able also to obtain a similar substance from diphtheria bacilli, which substance exhibits, however, the same peculiar staining-properties with carbol fuchsin. The wax of the tubercle bacilli occurs mostly between but also in part in the bacilli

themselves; hence the fact that sections and other preparations of these, even though treated with alcohol, xylol, etc., still take up the stain.

At the Verein für innere Medicin Fränkel read a paper on bronchial asthma, with special reference to its so little understood pathology. He had had the opportunity of a careful study upon a patient. A man, sixty years of age, who came into the hospital for gout, had been suffering for the previous year from attacks of bronchial asthma. He died in one such attack. The autopsy showed emphysema, and enlarged small and medium-sized bronchial tubes, which were choked up with cylindrical epithelia. Besides these there were spirals. Fränkel can find no satisfactory explanation for this desquamative catarrh. At all events, when we take into consideration autopsy reports of other cases of bronchial asthma, we must arrive at the conclusion that there can be no question as to the variety of changes taking place in this disease, there can be no uniform picture in the tubes. Therapeutically, Fränkel would recommend a subcutaneous injection of hyoscyamus hydrobromate, he having obtained a very good effect from one-half to one milligram injections in another severe case.

THE MEDICAL DEPARTMENT OF THE ARMY.

To the Editor of the Medical Record.

Sir: It is a matter of great surprise to me that a leading medical journal should condemn the medical department of the army, without a hearing, upon the reports of newspaper correspondents. I regret that the pressure of official duties makes it impossible for me at present to make a full reply to these strictures. I will, however, take time to state a few facts.

The number of medical officers allowed by law is inadequate in times of peace. The total number allowed is one hundred and ninety-two. There are at present thirteen vacancies. The administration of the surgeon-general's office and the Army Medical Museum requires six. Eleven are on duty at medical supply depots and as chief surgeons of military departments. One is at the Soldiers' Home; fifty-six are at general hospitals, on hospital ships, and at garrisoned posts. Four have been disabled during the war by sickness. Five are on duty as chief surgeons of army corps. This leaves ninety-six medical officers available for duty with troops in the field. Of these, thirty-five have been appointed brigade-surgeons of volunteers and are distributed among the various army corps.

This deficiency in regular medical officers has made it necessary to employ nearly three hundred contract surgeons, and more are being employed every day. Most of these doctors from civil life are doing good service, and many of them are thoroughly well-equipped physicians and surgeons with ample hospital experience; but it has been impossible to make a careful selection, owing to the great pressure of business in the surgeon-general's office, and the urgency has been so great that it has not been practicable to have examining-boards to pass upon their qualifications.

General Shafter's army at Tampa was thoroughly well supplied with the necessary medicines, dressings, etc., for field service, but owing to insufficient transportation he left behind at Tampa his reserve medical supplies and ambulance corps. Every one who has read the papers knows about the difficulties encountered in landing supplies at Siboney. As is usual under such circumstances, the fighting men with their guns and the rations necessary for their subsistence were first landed and hurried to the front. The *Relief*, loaded to her utmost capacity with medical supplies, arrived at Siboney four days after the fight at El Caney. That she was not able to get there sooner was a great disappointment to me, but was no fault of the medical department. I asked for a hospital ship in good time, but there was unavoidable delay in securing a suitable vessel and in preparing her for service.

It has not been the expectation of the medical department that every wounded man would immediately receive the attention of a surgeon. No modern army makes provision for so large a number of medical officers as this would require. But attached to our army there is a corps of non-combatants known as the hospital corps, which is the organized and authorized Red Cross corps of the army. At the outbreak of the war we had eight hundred hospital-corps men in service. At present there are more than four thousand. These men wear a brassard upon the left arm, bearing the red cross of the Geneva convention. We have done our best to instruct them in giving first aid to the wounded, and in a majority of cases a first-aid dressing properly applied by one of these men is all that is required. All of the surgeons who have come from the front have testified to the remarkable results attained from the prompt application of aseptic dressings by our hospital-corps men and by the soldiers themselves or their comrades. The proper application of the dressings contained in the first-aid packet, which is carried by every soldier, is, under existing regulations, a matter in which every enlisted man has special instruction. For some time past this instruction has been given first by our medical officers to the company officers, and by them to the enlisted men.

My position with reference to the inadvisability of sending female nurses to our camps of instruction or with our armies in the field has given great offence to some members of the Red Cross Society, and it is evident that the unjust attacks which have been made upon me and upon the medical department of the army result largely from the stand I have taken in this matter. I have gladly accepted the assistance offered us in the way of delicacies for the sick, etc., and we have now a large number of trained female nurses on duty at our general hospitals, where they are giving great satisfaction; but I see no reason to change my views with reference to the sending of female nurses with our troops in the field. They are an encumbrance to an army mobilized for active operations. This objection does not apply to the sending of immune female nurses for service in our yellow-fever hospitals near Santiago, and I have already sent nearly one hundred.

The first-aid dressing is to be put on at or near the firing-line, and the men have usually to be transported to the field hospitals on litters. In this age of aseptic and conservative surgery comparatively little operating is required, and our regular force is ample to attend to this. Moreover, we have men selected for their experience and skill to decide whether operations are necessary and to perform them. I have never objected to the surgeons and ambulances of the Red Cross Society going to the field for the purpose of rendering any necessary assistance, but, in my opinion, they should be independent as regards transportation and should not call upon the government for assistance in getting to the field of operations. The editor of the Medical Record knows that when he, in company with other prominent gentlemen from New York, called upon me in my office to offer the assistance of this organization, I said that an emergency might arise in which such assistance would be most welcome, and suggested the dispatch of a hospital ship to the seat of active operations. If there has been any failure to get necessary supplies to Cuba, it has been because of the difficulty of securing adequate transportation and of landing supplies through the surf; but we have been constantly importuned to transport Red Cross agents

and female nurses to the front. I am informed that many of these so-called nurses had never received any special training to fit them for the duties they were so eager to undertake. The National Red Cross Society should have been entirely independent of government transportation, if it expected to fulfil its proper function of affording aid to the wounded of both armies in accordance with the terms of the Geneva convention.

As regards the *Seneca*, I am informed by Major Torney, in charge of the hospital ship *Relief*, that he transferred forty-two wounded men, most of whom were entirely able to take care of themselves, from the *Relief* to the *Seneca*, because at that time it was expected that our troops would storm Santiago and that a large number of wounded would be sent to the hospital ship for treatment. For the same reason a certain number of convalescents were sent from the shore hospital. Two acting assistant surgeons were sent on board with a supply of the most necessary medicines and dressings. If the ship was overcrowded or inadequately supplied with water, knives and forks, etc., the medical department is in no way responsible.

Finally, I would say that when the medical officers now at the front return home I expect to have full information with reference to the efficiency of the medical service in the vicinity of Santiago; and in the mean time I hope that the profession at large will not be so ready to draw inferences unfavorable to the medical department of the army, on the basis of reports published in the daily papers, as the editor of the MEDICAL RECORD has been.

GEORGE M. STERNBERG,
Surgeon-General, U.S.A.

WASHINGTON, August 1, 1898.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: In the editorial of the MEDICAL RECORD of July 30th, suspicions are thrown out reflecting on the efficiency, foresight, and proper management of the medical department of the army during the Cuban campaign. The remarks made by the editor are based, as he himself asserts, almost exclusively on a correspondence which appeared in a recent issue of *The Sun*. In commenting on this article the editorial states: "If the report is true, and there seems to be no good reason for doubting it, the army medical department appears in a very unenviable light. It is said that there was a total lack of everything necessary for the proper care of the stricken soldiers. Why this was so it is hard to explain, especially in view of the fact that the war department has constantly declared, in declining voluntary assistance from charitable organizations, that it was abundantly able to cope with any possible emergency in the field, and yet this is the result." The correspondent of *The Sun* made bold to say: "It was evident that the medical department of the army had failed absolutely to send hospital supplies, or by this time they would have been landed. On the one hand, it was pitiful. On the other, it was negligence that could have been the result only of incompetence." I am sure that if the editor of the MEDICAL RECORD had been better informed he would not have been so willing to lend his ear to a newspaper correspondent, whose success consists nowadays largely in tingeing facts with more or less imagination and sensationalism. The medical men inside and outside of the army have little if any influence over the lay press, but the editor of a medical journal of such a high standing with the medical profession throughout the entire country as has been willingly accorded the MEDICAL RECORD should take the necessary pains to investigate more thoroughly the circumstances which dictated the editorial before casting any reflections whatsoever on the chief of the medical department. Dr. George M. Sternberg is no stranger to the medical profession and the American people. He occupies the exalted position of surgeon-general of the United States army, not by political preferment or gradual ascent by promotion, but by merit. President Cleveland made a wise selection when he made the appointment. It was a selection that met with the heartiest approval on all sides. General Sternberg knows from long and actual experience what it is to be a soldier in the field. He has been there. He served with distinction during the war of the rebellion. He has followed the unruly and wily Indians over plains and mountains during many a campaign. He has investigated yellow fever at home and abroad, regardless of his own health and life. Since he has been placed in charge of the medical department of the army he has been tireless in making many much-needed improvements. The army medical school is one of the many fruits of his labors. He has taken special interest and pride in promoting the intellectual and professional advancement of his young army surgeons, by assigning them for temporary duty in large cities where they could enjoy clinical instruction and laboratory work. He has taken a deep and active interest in the organization and usefulness of the Association of Military Surgeons of the United States, and served most acceptably as president. Last year he was honored by the profession by election to the presidency of the American Medical Association. His earnest devotion to his duties made it impossible for him, to his greatest regret, to attend the Denver meeting. The name of General Sternberg is often seen on the programmes of scientific societies from the Atlantic to the Pacific and from Labrador to the Gulf. He crossed the Atlantic last summer to represent his government at the international congress held in Moscow, Russia, and his work there added much to the lustre of American medicine. Not only is the surgeon-general, now so unjustly accused of incompetency, accorded a well-deserved place in the first rank of the profession, but his administration shows executive talents which have served him well during the present campaign. He has shown good judgment in the selection of his advisers. Colonels Alden, Greenleaf, and Smart are all men of large experience and admirable executive abilities, as all can testify who have been brought in contact with them. The charge of incompetence and ignorance certainly lacks foundation in the case of General Sternberg and his administration.

Now as to facts. The correspondent of *The Sun*, who furnishes all the material for the editorial referred to, goes on to say: "The wounded were carried back from the fighting-line on stretchers, and laid on the ground to wait until the surgeons could reach them. Many were soon beyond the need of surgical assistance. There were four divisions of the army, and each division was supposed to have its hospital. But as a matter of fact there was but one, the division hospital of the fifth army corps, under Major Wood. There were five surgeons, a hospital steward, and twenty assistants to care for the wounded—several hundred. They had a number of operating-tables, a small supply of medicines, but few bandages, and no food for sick or wounded men. It was comparatively easy to get supplies from the *State of Texas* ashore to the hospital here [Siboney], but there was no transportation to get them to the front." In the opinion of the editor of the MEDICAL RECORD and the correspondent of *The Sun*, the Red Cross Society's work was the only redeeming feature of the whole campaign, to judge from the language of the latter: "God knows what we should have done here without the help of the Red Cross, your ships, your surgeons, and your nurses! And there is no other help for us at the pres-

ent. Our wounded up there must have food, bandages, anything you can let us have in the line of hospital supplies."

The editorial in the MEDICAL RECORD brings matters to a focus in the closing sentence: "It is right and proper that the surgeon-general should resent any interference with his prerogatives, but he should not directly invite it by making possible such a condition of affairs as here described." This inference is entirely unwarranted by facts as they existed during and after the battle of Santiago. The correspondent and editorial do not even mention the steamer *Olivette*, which we found, July 7th, anchored close to the shore before Siboney. This steamer, in command of Major Appel, U.S.A., was used as a hospital ship. This ship was in place and ready to receive the wounded during the battle. The steamer, at the time mentioned, had on board three hundred wounded, who received the best surgical attention and nursing. The next day the steamer left for the United States, the medical staff being reinforced by the addition of Acting Assistant Surgeon Brown, of Chicago, from the *Relief*. General Sternberg at an early date recognized the importance of hospital ships during this war. The *Olivette* was chartered for this special purpose, was well equipped, and reached the seat of war in trim. The hospital ship *Relief*, formerly the *John Englis*, under the supervision of its commander, Major Torney, was transformed into an ideal floating hospital in less than six weeks and reached Siboney July 7th, a day before the *Olivette* left for its home port. Do these things show either negligence or ignorance? Do they not rather demonstrate foresight and an earnest endeavor better to care for the sick and wounded in a way creditable to our country and the chief of the medical department?

This question can be safely left for the wounded to answer. The surgeon-general accepted the legitimate services of the Red Cross Society, and had reason to expect aid from this source should pressing contingencies present themselves. The medical officers, the wounded and sick, have every reason to be grateful to Miss Clara Barton for what she did in furnishing ice, delicacies, and medical supplies. The *State of Texas* did excellent work in and with the medical department, but this is no reason why those connected with the Red Cross Society should claim all the credit and undertake to criticise a department of our government which has done all it possibly could in anticipating the requirements of a sudden emergency. It is a source of great regret that there should be any friction whatever between the medical department and the friends and supporters of the Red Cross Society. It must be clear to every unprejudiced mind that the treatment of the sick and wounded must remain under the direct care, control, and management of the medical department, and that the legitimate functions of the Red Cross is rather auxiliary to it than as an independent organization, if the greatest amount of good is to be realized from it. The hospital ship *Relief* brought an immense amount of medical supplies, delicacies, cots, pillows, and blankets. When we arrived at Siboney, we knew our presence was much needed, and looked in vain for some one in power to inform us where and how to land. The precipitous and rocky nature of the shore and the immense depth of the ocean made it impossible to secure anchorage for several days. A single lighter attended to the demands of necessary transport ships. I am sure no one could blame the medical department for the unavoidable delay in unloading the supplies. The little steam launches did what could be done in bringing to the shore what was most needed. Major Torney worked night and day in having the requisitions made by the surgeons in the field and hospitals. There was no red tape here; all they had to do was to inform him what was wanted, and it was delivered as soon as it could be brought to the shore. The lack of proper transportation facilities from the landing to the front cannot be charged to the medical department. It took more than a week of the hardest kind of work to land all of the supplies, and, considering the limited facilities available, it is and always must be regarded as a source of satisfaction that it was made possible at all. The *Relief* brought one thousand cots and an ample supply of blankets, which reached the hospitals with as little delay as possible. Lieutenant Crabbs, of the eighth cavalry, showed a creditable degree of ingenuity, energy, and often of courage in landing the supplies.

The complaint that the sick and wounded lacked medicine and dressing-materials is true only to a certain extent. Some of the medicines were exhausted, owing to the unexpected enormous demand, but they were supplied as quickly as could be done under the existing circumstances. The writer had the privilege of operating in all of the hospitals, and was always able to find the essential antiseptics and dressing-materials required in military practice, and this was at a time when the supplies were at the lowest. There was no lack at any time of stimulants and anæsthetics. There is no use in denying the fact that immediately after the battle the bandage and blanket supplies were inadequate, but these defects were corrected promptly. War always has had its hardships and discomforts; it cannot be prosecuted in parlor cars and clubhouses. Our soldiers expected deprivation and unavoidable discomforts, but on the whole they were subjected to less actual suffering than they had reason to look for. To the credit of the medical officers it must be said that they shared the unavoidable hardships with the soldiers. They lived on the same food, drank the same water, and made the moist ground their bed. The writer will always cherish the memory of the hardships incident to the campaign in a foreign country, a tropical climate, and among a strange people. The Cuban campaign was planned and executed so quickly that some omissions and defects had to be expected. It is a source of gratification to know that the complaints made against the medical department have come from newspaper correspondents and camp followers, more than from the soldiers themselves. Among the thousands of sick and wounded with whom I have been brought in contact during the Cuban campaign, I have seldom heard of a complaint; on the contrary, I have heard nothing but words of praise for the hard-working, self-sacrificing medical officers and the department they represent in the field.

LIEUT.-COL. N. SENN, U.S.V.,
Chief of the Operating Staff with the Army in the Field.

ON BOARD THE HOSPITAL SHIP "RELIEF,"
August 3, 1898.

RESTRICTIONS OF MEDICAL PRACTICE.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Your editorial with this title in a recent issue impels me to overcome my reticence and voice an opinion, even if it is an heretical one. So sincere am I in my convictions that I have the temerity to seek your columns, even at the risk of inviting the animadversions of interested parties.

It is my experience that legislative interference in any legitimate pursuit is detrimental to that pursuit and in a profession it brings about the opposite of what is intended. It legitimizes superficiality and hoodwinks the public; it creates spurious physicians to the everlasting detriment of the genuine and of the public as well.

As for restrictions, where and what are they? Will

any one deny that the acquisition of a medical diploma is an easy task and not restricted to the schooled, either in learning or in morals? The question of fitness never arises, and all who apply at the right door may enter. And what of those who gained access to the public by other means?

Are the glaring signs of "positive cures" ever disturbed? Are the brazen advertisements of charlatans ever challenged? Are the questionable schools of medicine ever fought in any other way than in politics and medical journals?

Is it not a fact that the number of medical colleges is rapidly increasing? Is it not a fact that the percentage of practitioners is steadily rising? Is it not a fact that the medical profession is yearly becoming more heterogeneous? Is it not a fact that quacks are steadily increasing, both as to numbers and kinds? Is it not a fact that competition is ever becoming keener and not limited to individuals, but includes charitable and private institutions, hospitals, boards of health, societies, patent-medicine venders, medical colleges, etc.?

Mr. Editor, pray what are the significance and logic of the word "restrictions"?

E. GOODMAN, M.D.

SAN FRANCISCO, July 17, 1897.

[It is possible that the conditions to which our correspondent refers still prevail in certain parts of the country, but they certainly do not in all. The general tendency is now to the consolidation of existing medical colleges rather than to the creation of new ones, the curriculum in the colleges is being lengthened, and the standard of medical education throughout the country is steadily being raised. In the States which have efficient medical laws, and they are in the majority, the question of fitness does arise, and by no means all who apply can enter, as the statistics of the various medical examining-boards attest. Dr. Goodman writes as one from the past, and many if not most of the evils of which he complains have gone into history.—ED.]

A MEDICAL TRIP TO EUROPE—WHY NOT TO HOLLAND?

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: With great interest I have read in your columns the correspondence of Dr. J. Preston Miller, entitled "The Different Fields of Operative Surgery and Gynæcology in Europe." For us who were born and live in the old world, it is always interesting to hear the remarks and benevolent criticism of those of your countrymen who come over the great ocean to see through their own eyes what is worthy to be seen. This is especially so in medicine, for this science is international, perhaps more so than any other science, and the younger generation of medical men in Europe should not think themselves sufficiently equipped for practice before having visited at least a number of the clinics and hospitals seen by your correspondent. So what he tells of the personal qualities and peculiarities of the leading surgeons and gynæcologists will be appreciated also by your European readers.

But there are those of one nation who were disappointed in reading the letters, and you will permit me to express my regret, when following your correspondent to Brussels, to see him taking route to London, without giving at least a glance at the old country of the Pilgrim Fathers. Had he done so, he might have seen that the Dutch doctor, as well as his quoted Brussels confrère, is accustomed to speak the modern languages—English, French, and German—for, because of the comparative smallness of his country, his education must be distinctly cosmopolitan; and I venture to say (with becoming modesty) that the Dutch teachers and operators do not deserve to have been passed over by your correspondent.

He might have gone to Amsterdam, a city with a population of about half a million, where much valuable material (if you do not partake of my objection to calling men material) is to be seen in the city hospital, which is almost entirely at the disposal of the clinical professors of the university. He could have seen the brilliant operations performed by Professor Treub in gynæcology and by Profs. Korteweg and Rotgans in surgery; he could have admired the diagnostic skill of Professor Pel; he could have heard the eloquence of Stohris; he could have taken a look at the polyclinic of Guye, of aprosenia fame.

He might have visited the old university of Leyden, and perhaps been rejoiced by the surgical genius of Iterson, or by the clinical instruction of the renowned Rosenstein.

Had he paid a visit to Utrecht, he might have deplored the sudden death of Halbertsma, whose theory on eclampsia puerperalis will not be utterly unknown to him; and he might have admired the ophthalmological institute of Snellen, the worthy successor of the world-famed Donders.

Even in the northern part of our country, at Groningen, he might have found a university with able professors, and might have enjoyed the didactic ability of Nyhoff in obstetrics and gynæcology. In returning to America he could have reached London from Rotterdam, and could have visited in this and other towns the municipal or private institutions, in some of which, called "Diaconessenhuisen" (deaconesses' hospitals), he might have seen the most heroic operations in general and gynæcological surgery.

In finishing, I wish to express the hope that some other occasional reporter of the leading medical paper of the United States may pay a visit to Holland, and follow the example of your countryman, Dr. J. A. Otte, now a medical missionary in Amoy (China) of the Dutch Reformed Church in America, who spent some months at the different medical and surgical clinics in Holland before settling in China, and who often told me he was very glad to have seen so much interesting work in Holland.

W. B. VAN STAVEREN, M.D.

ROTTERDAM, July 19, 1898.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending July 30, 1898:

	Cases.	Deaths.
Tuberculosis	200	157
Typhoid fever	28	8
Scarlet fever	99	15
Measles	94	8
Diphtheria	152	16
Laryngeal diphtheria (croup)	2	2
Cerebro-spinal meningitis	0	7
Chicken-pox	4	0

Pruritus Opii.—Dr. John H. Billings, of New York, writes: "Regarding the mention made of this in a recent issue of the MEDICAL RECORD, I have observed that in this condition the pruritus is largely of the scrotum and end of the nose, more particularly the latter. In one case the injection of one-eighth of a grain of morphine hypodermically, given to relieve abdominal pain, caused the most intense itching of the cutaneous covering of the scrotum. The patient being under observation for upward of a week, this symptom was observed on each exhibition of the drug."

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Original Articles.

THE RESULTS OBTAINED BY THE OPERATION OF PARTIAL THYROIDECTOMY IN EIGHT CASES OF GRAVES' DISEASE.[1]

BY J. ARTHUR BOOTH, M.D.,

NEW YORK.

In a paper entitled "The Thyroid Theory in Graves' Disease," read before this association on May 30, 1894, the writer reported two cases of this disease, whose condition had been much improved by the removal of one lobe of the thyroid gland. Since then six others have received the same form of treatment, and I think the present time and opportunity advantageous for the impartial and candid consideration of the facts herein given, in order that, by comparing the conditions now present with those existing prior to the surgical treatment, we may arrive at some definite conclusion as to the advisability of asking the surgeon's aid for the relief of the trying symptoms present in this disease. I confess that the results obtained from medical, hygienic, and other measures have been discouraging in a large number of patients, even in those who were able by their circumstances to take advantage of all that these different departments of medicine offered. When, however, one from a lower station in life, dependent on her daily labor for support, applies for relief, we feel indeed handicapped and usually fail in our efforts in removing not only the objective but also the many nervous symptoms from which these patients suffer. It was in consideration of the latter class and the introduction of the thyroid theory that prompted me to a trial of more radical measures, and though the results are not entirely satisfactory, still I can justly claim they are better than those obtained by me with other methods of treatment. The operation consisted in a removal of one lobe of the thyroid gland, and was performed by my friend, Dr. B. F. Curtis.

CASE I.—The patient, Louise E——, aged twenty-four years, was first seen January 23, 1893. The family history is entirely negative. She never had any illness worthy of note up to the date of the present trouble. About two years ago she first noticed enlargement of the neck, and three months later the eyes became affected. The patient is positive that there were no heart symptoms until six months later, when palpitation, throbbing in the vessels of the neck, shortness of breath, and flushing of the face appeared. All these symptoms gradually increased in severity, and in addition there was marked insomnia, because of the tumultuous action of the heart. Both eyes are very prominent, especially the left, and the lids do not follow the movements of the eyeballs. The pupils are moderately dilated, reacting to light and accommodation. Vision not impaired and fundus normal.

The enlargement of the thyroid is marked, the right lobe being the larger. On inspection, pulsation is quite noticeable over this region along the sides of the neck. Over the middle of the thyroid the neck measures fourteen inches. The pulse is 150 and of high tension. The apex beat is diffused but no murmur is present. Respirations, 24 to the minute. Measurement over bust thirty-one and one-half inches, and on full inspiration thirty-two and one-fourth inches. During a period of six months, from January to July, 1893, the patient received daily applications of galvanism and appropriate internal medication. At the end of the above period there was some improvement in all the symptoms, including a slight reduction in the size of the neck, and the eyes were less prominent. During July, August, and September, the patient received no regular treatment, but faithfully carried out my instructions as to resting several hours each day. After this time she relapsed into her former condition; the exophthalmos was well marked, and the right lobe of the thyroid very prominent. Further treament failed to make any material alteration in her appearance, or to cure the many subjective symptoms from which she suffered; so operative interference was considered and decided upon.

FIG. 1.—Case I.

The operation was performed by Dr. B. F. Curtis on November 11, 1893. A right transverse incision was made just below the hyoid bone and a vertical incision from the inner end of this at the median line. The flap thus made was turned back and exposed the right lobe of the thyroid. There was but little bleeding, the vessels being carefully dissected out and tied as found. A supernumerary lobe was found attached to the inferior angle and pressing directly upon the trachea; this was removed. The entire exposed mass was then separated from its bed and from the trachea, the isthmus ligated, and the whole right lobe removed.

During the operation the pulse was between 180 and 200, irregular and intermittent, but respiration continued normal and no stimulation was necessary. By evening she had made a good recovery from the ether, complaining of severe pain in the throat. Voice

[1] Read before the American Neurological Association, May 26, 1898.

not husky and of good strength. Up to the fourth day after the operation, nothing occurred worthy of note; the patient then had much nausea and vomiting, accompanied by a sharp rise in temperature. These symptoms continued for two days and then rapidly disappeared. On the tenth day the dressing was removed for the first time, and the wound was found healed by primary union.

The course of the case after this was satisfactory, and on the sixteenth day she was discharged from the hospital.

Inspection of the specimen after removal did not reveal any great degree of vascularity; it was homogeneous in appearance and hard in consistence. Microscopically, the tissue showed the structure of normal thyroid gland with the alveoli moderately dis-

Fig. 2.—Case II.

tended with hyaline material, and in places thickly crowded small cells, both in the alveoli and in the stroma, but principally in the latter.

May 30, 1894, seven months since the operation, there has been a progressive and decided improvement in all the symptoms; especially is this so with regard to the various nervous phenomena, viz., insomnia, restlessness, flushing of the face, excessive sweating, and palpitation. The eyes are less prominent, and the pulse now varies between 96 and 110, as compared to the former ratio of 120 to 160. The appended table shows the pulse average of the past nine months.

Average of Pulse Rate.

August, 1893	148
September, 1893	156
October, 1893	136
November, 1893	146
December, 1893	120
January, 1894	120
February, 1894	110
March, 1894	104
April, 1894	104

For the past four years she has been employed in one of the large department stores, being on her feet most of the time from eight o'clock in the morning until six at night, not missing a day from her work, and during this period she has not been disturbed by any of her former symptoms. The patient was examined on May 10, 1898, and the following notes were recorded: Eyes still prominent, but the wide, staring expression is absent. No palpitation or dyspnœa. The pulse is 90 after a rapid walk of six blocks to the office. The patient is perfectly satisfied with her present condition and considers herself cured.

Case II.—Anna D——, aged twenty years, single; seen April 23, 1893. Three years before she noticed enlargement of the neck and three months later a prominence of both eyes. She became very nervous, could not sleep, and was very much disturbed by frequent attacks of palpitation. The right lobe of the thyroid was removed on May 11, 1893. Marked improvement in all the symptoms followed. One year after the operation there was entire absence of any exophthalmos; the pulse, formerly 140, was down to 100, and the nervousness had disappeared. When seen on April 24th last, she said she was perfectly able to perform her household duties without any fatigue or palpitation and was feeling entirely well. The pulse was 80 beats to the minute and the eyes were normal.

Case III.—Nettie D——, aged forty-two years, single, was seen June 22, 1894, and the following history obtained: Twelve years ago the patient received a severe fright, the nature of which she will not give. She was very much prostrated and became very nervous. Six months later she noticed a bunch on the right side of the neck, which gradually increased in size and finally extended over to the other side. Two years ago she became very much annoyed by frequent attacks of palpitation and shortness of breath after slight exertion, also by a throbbing in the vessels of the neck. Within the last year the eyes have become very prominent, and this condition is well shown in the accompanying photograph. Recently she has passed large quantities of urine and has been under treatment for diabetes.

Examination revealed all the symptoms of the disease to an extreme degree. She was admitted to St. Luke's Hospital on September 24, 1894, and, no kidney complications being found, the operation of par-

Fig. 3.—Case III.

tial thyroidectomy was performed by Dr. Curtis on October 1, 1894. Shortly after the effects of the ether had passed off there developed a high degree of fever; the patient rapidly passed into a comatose condition and finally died twenty-four hours after the operation. An examination of the urine revealed a large percentage of albumin, hyaline and granular casts. No autopsy was made and therefore it is difficult to arrive at any conclusion as to the real cause of death; but from the examination of the urine and the symptoms it is probable that the final condition was one of uræmia and not to be explained by the sudden absorption of an excess of the secretion of the thyroid gland.

Case IV.—Nellie C——, aged seventeen years, single; seen November 5, 1895. When six years old a

sister, taking her in her arms, made a pretence of throwing her out of the window. She was very much frightened, and an attack of what was called brain fever followed. She was confined to the bed for several months, and during this time had a number of convulsions, but finally made a good recovery. She remained well until the appearance of menstruation six years later: about this time, when thirteen years

Fig. 4.—Case IV

old, a swelling of the upper lids of both eyes was noticed, which has gradually increased and now has become so noticeable as at once to attract attention. This symptom is more marked in winter than in summer.

She now complains of frequent attacks of palpitation of the heart, accompanied by throbbing in the neck and profuse perspiration; also of general nervousness and occasional headache. She has never noticed any prominence of eyes, enlargement of the neck, or swelling of the hands or feet. On examination the patient presents the appearance of a case of Graves' disease. When we examine the eyes, however, no exophthalmos is discovered, but instead a very marked and peculiar œdema of both upper lids, as is shown in the accompanying illustration. It is not a true œdema; no pitting follows pressure and it does not cause the closure of the lids, such as is produced by ordinary œdema. Movements of the eyes and lids are harmonious. On inspection there is no decided prominence of the thyroid gland, but on palpation swelling and a diffused hardness of both lobes are made out. The heart action is agitated and pulse rate rapid, averaging 120 beats to the minute. With the exception of loud hæmic murmurs at the base, the heart is normal. Face, neck, and both hands are covered with beads of perspiration. There is a slight tremor of the fingers.

One month later (December 5th) prominence of the left eye appeared. Having been unable to do any work for some time, even to attending to minor household duties, the patient willingly consented to operative interference, and on December 15th she was admitted to St. Luke's Hospital, where a few days later the right lobe of the thyroid was removed by Dr. B. F. Curtis. Her recovery from the effects of the operation was rapid and the progress of the case up to the present time has been entirely satisfactory. It is now two and one-half years since the operation, and during this time there has been a complete disappearance of all nervousness; the throbbing and palpitation have ceased, and with two exceptions the pulse has not been above 90, most of the time varying between 80 and 86; no exophthalmos. Although the improvement in the symptoms just mentioned has been marked, the peculiar œdematous swelling of the eyelids still persists.

Case V.—Amelia B——, aged twenty-one years, single, domestic; seen with Dr. Curtis November 29, 1895. Present trouble began four months before, when she felt a movable, painful swelling, about the size of a cherry, on the left side of the throat, which caused her pain on swallowing or talking. About a month later it had grown to about the size of a pigeon's egg and was quite visible. She became very nervous, could not sleep, and had attacks of palpitation. Examination did not reveal any prominence of the eyes. Pulse rate, 110 and irregular.

The left lobe of the thyroid gland was removed; the patient made a good recovery from the operation and was discharged from the hospital on December 2d, entirely relieved of the pressure symptoms from which she suffered. Three months later the nervous symptoms had disappeared, the pulse became normal, and when seen on May 18th last she was perfectly well, the pulse being 74; no nervousness or insomnia.

Case VI.—Addie T——, aged thirty-five, married. This patient was referred to me by Dr. Curtis on January 10, 1896. Her general health was good up to ten years ago; then she first noticed a swelling on the left side of the neck, which gradually increased in size. Palpitation of the heart and general nervousness appeared five years later. At no time had she noticed prominence of the eyes. Examination revealed a decided enlargement of the left lobe of the thyroid, throbbing along the vessels of the neck, and a pulse of 120. The eyes appear normal both in size and movement.

Fig. 5.—Case VII

One year ago her sister died with symptoms of the disease, and now another sister has the same trouble.

On January 11, 1896, partial thyroidectomy was performed by Dr. Curtis, the left lobe being removed. No shock followed, and she made an uneventful recovery from the operation. For the past year she has been entirely free from any marked nervous symptoms

and has had no tachycardia. The pulse now averages about eighty beats to the minute.

Case VII.—Mabel B——, aged twenty years, single. Patient first seen November 20, 1896. Enlargement of neck noticed one year previous, followed by general nervousness, tremor of hands, excessive sweating, attacks of palpitation and dyspnœa. Pulse rate very rapid—160 to 180. Has had frequent attacks of diarrhœa. Exophthalmos slight. After six months' rest in bed, and having received no benefit from either this or many therapeutic measures, she was prepared for operation, and on June 28th thyroidectomy was performed by Dr. Curtis, the entire right lobe being removed. She returned home on the 19th of February, 1897, unimproved. It is now a little over a year since the operation, and there does not seem to be any decided improvement in her condition, though she states that palpitation and throbbing are less. Before, she was disturbed four or five times at night by attacks of smothering and palpitation; she now sleeps undisturbed by any such symptoms. The tremor is still present, but not so marked. The pulse rate is now 120; formerly 140 to 180.

Case VIII.—Mary M——, aged thirty-six years, single; bookkeeper. Patient referred to me by Dr. David Webster on October 12, 1897. Onset of symptoms one year previous, consisting of general nervousness, prominence of eyes, rapid pulse—128–130, tremor of hands, and enlargement of neck. Admitted to St. Luke's Hospital on October 28th, and on November 13, 1897, the right lobe of the thyroid excised by Dr. Curtis. Her recovery from the effects of the operation was uneventful, and she returned to her occupation as bookkeeper in five weeks, feeling better. When seen on April 26th last she stated she had been very much improved in every way. She is less nervous, sleeps as well as ever. She is now able to write and keep her books neat; formerly she was not able to do this on account of the tremor of the hands, which was so marked as to resemble that of chronic alcoholism. She has hardly any palpitation now, and the pulse varies from 90 to 100. Prominence of eyes hardly noticeable.

Summary.—It will be seen from the preceding that the operation cured five of the eight patients. One died; in one no change has occurred; one has been improved, and in this case it is worthy of notice that the operation was performed only six months ago, so that we may expect still further improvement and perhaps a cure; for the longer the period of observation after operation the better appear the results. The order of improvement in my cases corresponds with that observed by others; first the goitre diminishes, next the nervous symptoms disappear, then the pulse rate and vasomotor phenomena improve, and the exophthalmos last of all.

Surgical intervention in Graves' disease has been espoused in the works of Stierling, Heidenreich, Lemke, Kocher, Buschan, Solary, and others, all reporting successful results in a number of cases. Solary in 69 observations reports 84 per cent. improved. Heidenreich in 61 cases had 50 cures and 5 failures. Buschan gives the following statistics: 80 cases—31 cured, 20 improved, 6 deaths, 16 failures, 7 unknown results. Mikulicz in 11 cases had 7 patients fully cured, and 4 essentially improved. Besides these, numerous other authors report cases cured or improved by operative measures.

The following is a list of fatal cases after partial thyroidectomy from 1890 to May 1, 1898: 1892, Lemke, 1; 1893, Cohen, 1; 1893, Wolff, 1; 1896, Mattieson, 2; 1896, Riedel, 5; 1897, Embden, 1; 1897, Lejard, 1; 1897, Wiesinger, 1; making 13 in all for this period. The deaths take place suddenly, either at the time of the operation or soon afterward, and the rapid onset of the acute symptoms, with death following in a few hours, has caused much speculation as to their cause.

Conclusions.—(1) Cases of Graves' disease may be entirely cured by operative measures. (2) Pathological and clinical evidence is in support of the view that the symptom complex is the expression of a primary neurosis multiplied by a secondary glandular intoxication. (3) While the ultimate cause of the disease of the gland is still a matter of speculation and a mortality of seven per cent. after operation is reported, we cannot justly recommend it as a routine plan of treatment. (4) Sudden death may occur in the course of or soon after operation, and has not as yet received a satisfactory explanation.

MOVABLE KIDNEY AND ITS TREATMENT.

By MAX EINHORN, M.D.,

NEW YORK.

While from an anatomical point of view movable or floating kidney was already known in the middle ages, its clinical significance was not recognized until this century, and has been fully appreciated only in the last fifteen or twenty years. In the following I have taken the liberty to present a brief historical review of this subject and to supplement this with the results of my personal experiences.

Rayer[1] was the first to make the diagnosis of floating kidney, as early as the year 1836, and has given an accurate description of this condition. In his celebrated work upon kidney diseases, vol. iii., page 783, this author writes as follows: "The movability of the kidneys, or that condition which admits of their sagging down, or slipping forward, or shifting backward or upward beneath the liver, is a cause of various occurrences, especially of frequent pains in the abdomen and in the corresponding leg—pains which have often been regarded as nervous colics, as symptoms of hypochondriasis, and occasionally even as lumbar neuralgias."

Rayer reports eleven cases of movable kidneys which he observed himself, and formulates the results of his experiences as follows: "In *résumé*, the movability of the kidneys constitutes a morbid condition which has been but little studied, and occurs much more frequently than is commonly assumed. The right kidney comprises almost exclusively the site of this anomaly; it is found much oftener in women than in men. Quite frequently it occurs in connection with an enlargement of the liver, with a displacement of the intestine, or with a prolapse of the uterus. It may result from a special disposition of the peritoneum, a deviation of the kidney, or the greater extensibility of the vessels, etc. Repeated pregnancies, exertion in carrying or lifting heavy burdens, appear in some cases to be the cause of this dislocation of the right kidney; in other cases, however, an explanation of this anomaly is lacking. The pain in the right lumbar region, which sometimes radiates in the direction of the lumbar and crural nerves—a pain which can be evoked in a condition of rest by pressing with the fingers of the right hand upon the right kidney, while the left hand supports the lumbar region behind—and a constant feeling of weakness and discomfort in the lower portion of the abdomen, are the most frequent symptoms of this disease."

In reference to the treatment, Rayer has already presented the most essential points. He says: "Experience has shown me that most commonly it is sufficient to support the abdomen by means of a properly applied bandage, in order to cause the disappearance of the pain due to the movable right kidney, or at least to render it more endurable."

The next important work on this subject is by

Charles J. Hare,[2] and appeared in 1858—that is, just forty years ago. I venture to cite the following remarks: "This 'movable condition of the kidneys,' though not very common, is yet, I feel convinced, much more so than is generally supposed, and is, at any rate, not so rare but instances of it must present themselves occasionally to most medical men who are engaged in extensive practice. I shall subsequently give you further particulars as to the relative frequency of this affection in the two sexes, etc., but I may mention here that it occurs very much more commonly among females than among males, and that mobility of the right kidney is much oftener met with than of the left, while, if the two organs be affected, the right is usually the more so. The habitual position of a mobile kidney is almost always lower than natural, but it varies notably according to whether the patient be in the recumbent or in the upright position, being lower, of course, in the latter; even when the patient lies on the back (if the abdominal parietes are moderately flaccid and not too fat), the lower end or perhaps even the greater part of the kidney may be felt below the costal cartilages."

Bimanual palpation is described by Hare as follows: "Suppose the right side is to be examined; the patient being laid on the back, with a slight inclination toward the right side, the head and shoulders being raised and the legs somewhat elevated, the observer should stand or sit to the right of the couch but somewhat facing the patient, and should place the fingers of the left hand on the postero-lumbar region, immediately under the last rib, at the same time gently pressing or pushing forward that part. The ends of the fingers of the right hand should then be placed in front, just below the costal cartilages, and there also a slight pressure should be exerted. The lower end of the kidney will thus probably be felt between the two hands. The patient should next be told to take a deep inspiration, and then to expire slowly; the observer should in the mean while keep his hands in the same position as before, but, just at the commencement of expiration, should press the fingers of the right hand rather sharply down toward the renal region. He will probably detect a much larger portion of the kidney between the hands than previously; it has been detruded downward by the action of the diaphragm. Sometimes the kidney may thus be retained between the hands, and now and then it may be detruded much lower into the abdomen, but it usually slips away from between the fingers, and is lost for a moment under the liver or in the proper renal region. In other cases, when the mobility is greater, if at the moment of commencing expiration (after a deep inspiration) the right hand be pressed edgewise along the margin of the costal cartilages, and sharply downward toward the renal region, the kidney will very probably glide or slip downward, so that the whole of it will be below the hand—below, that is, the level of the position where its inferior border is usually situated. In other instances, without this manipulation, the kidney is felt as a body so movable that it can be taken up, as it were, through the parietes, and be shifted or pushed to different parts of its own side of the abdomen, or even moved to the front of the spine. The degree of mobility, therefore, varies very much in different cases; it may amount to but a slight departure from the usual tolerably fixed condition of these organs, while, on the other hand, I have met with a case in which the right kidney could readily be moved upward and downward, over a space of between four and five inches, and to a considerable extent transversely across the right half of the abdomen."

Hare observed twenty-three cases, twenty in women and three in men. For the treatment of movable kidneys he recommends chalybeates, regulation of the bowels, avoidance of much standing, horseback exercise, and the wearing of a proper elastic abdominal bandage, and continues as follows: "But the greatest and most efficient relief is obtained from the use of an elastic abdominal support, provided this be made so as to fit thoroughly well; if not, it sometimes aggravates rather than relieves the pain; and one difficulty lies in preventing its slipping too high up on the abdomen, when it acts somewhat like a belt round the waist, and may even tend to detrude the kidney downward."

After quite a long lapse in the study of movable kidneys, there appeared several articles upon the surgical treatment of this affection. Thus Keppler[3] suggested extirpation of the organ as the only possible cure of floating kidney. This author states in his work that "floating kidney, *per se*, even when unattended with any complication whatsoever, should be removed by nephrectomy by means of abdominal incision, as soon as it causes any perceptible disturbances in the organism." This suggestion has, as a matter of fact, been frequently carried out, and from a tabulation by Sulzer[4] it appears that among 37 nephrectomies which were undertaken for the cure of floating kidneys there were 26 cures, 1 failure, and 10 deaths —a mortality of 27 per cent.

It may be readily understood that soon voices were raised against this severe and dangerous procedure, and E. Hahn[5] was the first to propose the fixation of the kidney, or nephrorrhaphy, for the cure of movable kidney, an operation which has been often performed by this surgeon and, following him, by many others. According to the compilation of Sulzer, the results of fixation of the kidneys were 93 successes, 4 improvements, and 15 failures—that is almost one-third; among 80 cases of nephrorrhaphy, 2 terminated fatally.

In this country Edebohls[6] has perfected the technique of nephrorrhaphy, and performed this operation fifty times, in the period of 1890 to 1895, with but one death. Landau,[7] one of the best diagnosticians of floating kidney, expresses himself as opposed to any operative interference in this affection.

Our knowledge of movable kidney or floating kidney was immensely enlarged by Glénard's[8] masterly work. This author recognized that it is not the kidney alone which is displaced downward, but that in connection with it several other abdominal organs become looser or more movable, and descend more or less. The "ren mobilis" is, according to him, one of the concomitant appearances of enteroptosis: that is, a descent of the stomach, intestine, and other abdominal organs. For the recognition of movable kidney, which, so to speak, forms one of the chief symptoms of enteroptosis, Glénard justly places full weight upon bimanual palpation, which was originated by Hare, as appears from the above description. To Glénard, however, belongs the credit of having laid the foundation of our knowledge of enteroptosis and having promulgated the same in the medical world. Coincidentally with the advances made in the study of enteroptosis, the study of floating kidney was more widely diffused and appreciated. Ewald,[9] and, following him, Kuttner,[10] Bial,[11] and Huber,[12] in Germany, have made instructive contributions to our knowledge of this affection. Here, in this country, I [13] published, in 1891 and 1895, some observations upon this subject. The surgical treatment of floating kidney has now, and with justice, been relegated to the background; for, as this condition is only one of the concomitant appearances of enteroptosis, very little benefit is derived, as a matter of fact, from a nephrorrhaphy.

In the last eight or nine years I have had an opportunity of observing nearly five hundred cases of movable kidneys, and I take the liberty in the following to describe this anomaly on the basis of my personal experiences.

Definition.—By the term "movable kidney" or

"floating kidney" is understood a condition in which the kidney is more or less accessible to palpation.

According to Landau, the kidneys are situated normally in the posterior region of the upper abdomen, and in part within the bony walls of the thorax, at the sides of the transverse processes of the vertebræ, the inner margin being at an average distance of 7.5 cm. from the median line. They extend laterally from the lower border of the eleventh dorsal vertebra to the lower border of the second lumbar vertebra; they are inaccessible to palpation.

According to Glénard, four different degrees of mobility of the kidneys can be distinguished, viz.:

First degree of nephroptosis:* The lower part of the kidney can be felt during deep inspiration, while during expiration the organ returns to its place, and it is not possible to hold it securely.

Second degree: The greater portion of the kidney can be palpated and can be held firmly, but the upper border cannot be felt.

Third degree: During deep expiration the upper border of the kidney can also be reached.

Fourth degree: The entire kidney is accessible to palpation, even during expiration (the movable or floating kidney of authors).

A congenital floating kidney is covered with peritoneum, and is of rare occurrence; clinically it cannot be differentiated from the acquired movable kidney.

Etiology.—Movable kidney occurs more frequently upon the right than upon the left side. Occasionally both kidneys are movable, although it is extremely rare to find the left alone movable. This anomaly occurs much more frequently in women than in men. The statistics regarding the frequency of floating kidney differ in the writings of the older and of the more recent authors. Senator,[15] as late as 1883, computed one floating kidney to about one hundred and seventy-one women. On the other hand, Glénard found this anomaly in one out of every four women: Lindner[16] noted a similar proportion, namely, one floating kidney in every five or six women. This great divergence may be explained on the ground that since Glénard's publications the examinations for floating kidneys have been more frequently instituted and more critically (bimanually), so that the more recent authors can furnish more careful statistical material. The proportion of frequency among men and women is clearly represented by the statistics of Kuttner. This author has examined 100 cases of palpable kidneys, comprising 94 in women and 6 in men. Kuttner has also investigated the position of the stomach in 89 of his cases of floating kidney, and found it normal in 10 instances; that is, the stomach was situated above the umbilicus; while in the remaining 79 the greater curvature was situated two or three fingers' breadth below the navel.

Hilbert[17] has examined 100 cases of movable kidneys in women, in 65 of which the right kidney alone could be felt, in 35 both kidneys. Among the cases in which the right kidney only was palpable, 40 presented the first degree and 25 the second degree of mobility. The first degree of mobility of both kidneys was observed by him in 8 instances; the second degree in 9. A true floating kidney was noted by him only once among 100 cases, and then in connection with a palpable kidney on the left side. Among these cases Hilbert never met with a left palpable kidney. Disturbances could be referred to this anomaly only in 15 per cent. of the cases.

In order to gain exact information regarding the frequency of floating kidney in men and women, I have reviewed the cases recorded in my private notebook since 1897, especially those affected with digestive disturbances. Altogether, 1,315 patients are recorded, comprising 772 men and 543 women.

Among the 772 male patients 14 were affected with floating kidneys, all on the right side. As expressed in percentage, the proportion of movable kidneys was 1.81 per cent.

Among the 543 female patients, 112 presented floating kidneys—107 being on the right side, 4 on both sides, and 1 on the left side. The frequency of movable kidneys in some female patients, therefore, amounts to 20.6 per cent.

As regards the degree of renal mobility, among the 14 cases of floating kidneys in the male sex 4 were in the first and second degrees, and 10 in the third and fourth degrees. Among the 112 cases of women, 32 were in the first and second degree, 70 in the third, and 10 in the fourth degree.

In about one-third of the cases of floating kidneys of both sexes, a marked gastroptosis (the stomach usually lying between the navel and symphysis) was present; while in the majority of the other cases the greater curvature reached as far as the umbilicus, or from one to two fingers' breadth beneath; coincidentally, the transverse colon was, of course, displaced farther downward.

Among the 112 women affected with floating kidneys, 5 presented ptosis of the liver and 1 a ptosis of the spleen. The uterus was also often found displaced downward, although all the cases were not examined with reference to this point, and hence I am unable to furnish exact figures.

If, as we have seen, floating kidney almost always occurs in conjunction with a ptosis of other abdominal organs, it is of interest to learn whether ptosis of the abdominal viscera may take place without floating kidney. Inasmuch as gastroptosis is most readily recognized, and, moreover, is always a characteristic feature of enteroptosis, I have since 1897 examined those of my patients unaffected with floating kidneys with reference to this point, and have determined a marked descent of the stomach in fourteen women and two men, among these being two females who at the same time presented marked degrees of hepatoptosis. Hence cases of enteroptosis (gastroptosis) also occur without the presence of movable kidney.

Cause.—The corset is frequently considered as the etiological factor in the occurrence of floating kidney, and even Cruveilhier[18] said: "I have several times noted in women who wear the corset tightly laced, the right kidney in the iliac fossa of that side. This displacement of the kidney arises when, in consequence of the pressure exerted by the corset upon the liver, the right kidney is dislodged from the position which it occupies at the inferior surface of that organ, somewhat like a kernel pressed between the fingers."

Witthauer[19] and Sulzer also seem to hold the corset responsible for the development of floating kidney. According to Sulzer, a much more dangerous agent than the corset in women and girls of the lower classes is the tightly laced waistbands of their dresses, which produce a more or less deep furrow, upon which rests the weight of all the clothing. This pressure crowds the intestines and kidneys downward.

Landau and Senator lay great stress upon previous childbirths as an etiological factor. Sulzer coincides in this, and explains it as follows: "Normally, in the presence of tense abdominal walls, the intra-abdominal pressure aids in holding the kidneys in position against the posterior wall of the abdomen. After delivery, when this condition is no longer active, and when on assuming the upright posture a prolapse of the digestive organs takes place, the kidneys tend much more readily to leave their normal situation, and, as a result of severe labor, or from pressure, straining, etc., may be dislocated downward." At the conclusion

* Israel[14] considers the first degree as still within the domain of the physiological limit of kidney mobility.

of his work, Senator expresses himself as follows regarding the etiology of floating kidneys: "The three named etiological factors—the relaxation of the abdominal walls, displacements of the sexual organs, and tight lacing of the upper abdominal region—appear to me as the most important causes for the development of renal descent, and also explain its great predominance in women."

Rapid emaciation has been regarded, and with justice, as a cause of renal dislocations. Landau says: "One of the most important and frequent causes of mobility is the disappearance of fat in the fatty capsule and the loosening of the peritoneum. Of course, the disappearance of renal fat can become the cause of mobility only when it has been present in large amounts and has been rapidly consumed."

Becquet [20] considers the increased congestion of the kidneys at the time of menstruation as an etiological factor of floating kidneys. The organ becomes heavy and descends, the capsule being stretched and then relaxed, and a dislocation is thus rendered possible.

All the above-mentioned agencies probably play an important part in the origin of floating kidney, but they do not suffice always to explain its occurrence, for sometimes, although rarely, we meet with floating kidneys in young girls (even before the appearance of menstruation) who have not been addicted to the corset or tight lacing and are not emaciated. In males, cases of this kind, in which no cause for the renal dislocation can be determined, are observed even more frequently. I must, therefore, completely coincide with Sulzer's view that it is necessary to assume an individually varying predisposition as regards the degree of fixation of the kidney or its possibility of being displaced. This explanation, of course, applies not only to the kidney, but also to the displacement of other abdominal organs.

Symptomatology.—Movable kidney, as well as enteroptosis, may run its course without any symptoms whatever, and this, indeed, happens quite frequently. On the other hand, cases of floating kidney are encountered which are attended with the most diverse gastric and intestinal affections. In order to describe the pathological appearances of movable kidney, we must not, of course, attribute to the existence of the palpable kidney every morbid phenomenon which a sufferer from this anomaly may present. It will be necessary, therefore, to mention only those symptoms which occur quite frequently in movable kidney and appear to be dependent upon the latter, being removed by appropriate treatment directed to the movability of the kidney (and the ptosis of other abdominal organs).

These symptoms are as follows:

1. A feeling of traction and weight in the abdomen.
2. Quite violent palpitation in the epigastrium (pulsation of the abdominal aorta).
3. The disturbances are usually more pronounced when standing or walking, and disappear on lying down.
4. Frequent urination, occasionally attended with slight burning.
5. Pains in the sacral region after slight exertion.
6. In women the discomfort is usually increased at the time of menstruation, and considerable improvement manifests itself during pregnancy.*

These six symptoms need not always be present; they may all be absent, or occur separately.

Most of the gastric and intestinal symptoms, such as pains, eructations, nausea, occasional vomiting, irregularity of the bowels (chiefly constipation, sometimes diarrhœa), which are present in persons with movable kidney, occur usually independently of the latter, and require therapeutic measures appropriate to such conditions. Gastric neuroses, which originate by reflex action from a movable kidney, are met with, but rarely; among them I would place nervous vomiting and nausea. Whether cases of periodic attacks of continued gastro-succorrhœa can be regarded as reflex symptoms of a movable kidney appears to me doubtful. Of course, these conditions are found in patients suffering from movable kidney, yet I have observed cases in which neither the wearing of an abdominal bandage nor the performance of nephrorrhaphy caused the disappearance of the periodic gastro-succorrhœa.

That floating kidney may be complicated by the most manifold gastric affections, appears clearly from the following summary, which I have taken from my last tables of cases treated by means of intragastric electrization.* According to these, among the 177 cases referred to, 43 were affected with floating kidney; among the latter, 24 suffered from hyperchlorhydria, 10 from chronic gastric catarrh, 2 from achylia gastrica, and 7 from various gastric neuroses (1 case of nervous vomiting and 6 cases of nervous gastralgia). Of course, all other gastric affections (such as ulcer and cancer) may also be present; the latter, however, are not mentioned in the tables, because these diseases are not treated with electricity.

Diagnosis.—The recognition of a movable kidney is quite easy. Palpation is practised bimanually, and differs in no essential respect from the method already described by Hare in the above-cited paper. The hand placed above should not exert too strong pressure, because this may cause a somewhat movable kidney to be forced upward and prevented from gliding downward. When the tumor is felt between the hands, the decision of the question whether it originates in the kidney is not difficult in the majority of cases. Quite frequently the contour of the kidney can be accurately made out by palpation. Occasionally we may be at first in doubt regarding the nature of a tumor situated in the right ileo-cæcal region; whether it is a kidney (movable kidney of the fourth degree) or a distended segment of the ascending colon. If, however, pressure is made upon the tumor, it will be possible, in case it belongs to the colon, to alter its shape (by dislodging the fæcal mass), and now and then a gurgling or other noise will be heard, which is evoked by palpation in the subjacent segment of intestine. A gall bladder filled with calculi is more likely to be confounded with a floating kidney of the first or second degree, but even here the latter can ordinarily be recognized by its shape. Under pressure of the finger, a gall bladder filled with stones sometimes alters its form, owing to the displacement of the latter; yet an error as regards this point may happen to the most experienced diagnostician.

Treatment.—As mentioned above, the use of the abdominal bandage for supporting and lifting up the lower portion of the abdomen had been recommended by Rayer and Hare. This treatment was also adopted by Glénard, and is quite generally recognized. By some surgeons, however, the value of the bandage is questioned. Thus Edebohls says: "In all resources against the condition, it [the bandage] ranks second to nephrorrhaphy; but, in my opinion, it is a poor second." The same author says farther on: "Faithfully as I have tried bandages, however, I must own that I accomplished little good with them." Lewis[21] appears to be of the same opinion. At the conclusion of his article on movable kidney, he says: "The non-surgical treatment has never more than a palliative effect." According to my view, the bandage is a very valuable resource, if we expect from it no more than a

* All these symptoms (1 to 6) may also occur in enteroptosis not complicated with floating kidney; and the treatment of such cases is identical with that of floating kidney.

* These tables may be found in my article, "Nouveaux faits en faveur de l'électrisation intrastomacale." Annales d'électrobiologie, May 15, 1898, p. 319.

relief of the symptoms which result from the abnormal mobility of the kidneys (and other prolapsed abdominal organs). If, however, we expect that this measure will at the same time remove all the existing disturbances (gastric and intestinal affections), we shall meet everywhere with disappointment.

The disturbances of the stomach and intestinal canal must be treated according to the principles prevailing at the present time. It will be necessary first to make an exact diagnosis before recourse can be had to a successful line of treatment.

Besides a serviceable, well-fitting abdominal bandage (a cushion for the kidney can almost always be omitted), the medical treatment consists in promoting the nutrition and strengthening the organism. The former is done by a liberal diet (forced feeding), so that an increase in weight takes place.* The latter is accomplished by gymnastics, by general massage, and electricity. In a few cases, after a considerable increase in flesh has occurred, I have observed not only a disappearance of all the subjective symptoms, but also the return of a previously movable kidney in the second or even third degree to its normal position, so that the organ could no longer be palpated. As regards the special method of kidney massage as operated by Thure-Brandt (Unternier-Zitterdrückung), and warmly recommended by Bachmaier,[22] I have no personal experiences at my disposal, although it appears to me to be unnecessary.

The surgical treatment consisted, first, in extirpation of the kidney, as proposed by Keppler, but this procedure was justly soon discarded. Landau expresses himself as follows in regard to this: "What would one say to the suggestion to amputate a leg on account of sciatica or because of a varicose ulcer, an advice which would be on a par with that here given, namely, to extirpate the kidney?"

Later, nephrorrhaphy was practised. This operation, which was suggested by Hahn, is essentially the same procedure which, although modified in its details (Edebohls, Senn,[23] Reed [24]), is performed at the present time by surgeons.

We now come to the important question: Shall the treatment of movable kidney be surgical or are medical therapeutic measures sufficient? The statements made in the literature regarding this point are widely divergent. On the surgical side, this operation is regarded by some as the only curative measure. Thus, for instance, Edebohls says that the symptoms of movable kidney may be improved by the dorsal posture, the Weir-Mitchell treatment, massage, electricity, and abdominal bandages; all these measures, however, fail in the vast majority of cases, and even the improvement obtained is usually only of transient character. A nephrorrhaphy properly performed in appropriate cases, as demonstrated by his own experience, always brings about improvement and presents a good prospect of a permanent cure. Lewis, who has recently written on this subject, also contends vigorously in favor of operative treatment. On the other hand, Landau is opposed to all surgical intervention, and Huber remarks as follows: "In reference to the therapeutics of enteroptosis, I would emphasize that, up to the present time, I have never been induced, owing to the severity of the symptoms or inefficacy of the adopted non-operative treatment, to refer the patients to the surgeon for the performance of nephrorrhaphy, the most radical treatment which at present still appears admissible. This much can be said, at any rate: that an intelligent application of bandages, in connection with an appropriate dietary and medicinal treatment of the gastric symptoms, will, as a rule, be adequate." Boas[25] also does not appear to be a vigorous supporter of surgical procedures.

My own experiences point decidedly in favor of medical treatment, and for the following reasons:

1. The results of internal dietetic-mechanical treatment are very favorable, if the gastric and intestinal symptoms are treated according to modern methods, if attention is paid to promoting nutrition, and, if necessary, the wearing of an appropriate abdominal bandage is recommended. On reviewing once more the cases of digestive disturbances in connection with floating kidney treated with electricity (electrization was employed on account of the severe gastric symptoms, and not on account of the condition of the kidney), I find that among the above-mentioned 43 patients, 27 were completely cured—that is, all the subjective symptoms disappeared—and 16 were considerably improved. The results were equally favorable in many cases in which electricity was not applied. I refer only to the above cases, however, because I possess accurate data regarding them, and had them for a greater length of time under observation.

2. As is generally known, very many cases of movable kidney are unaccompanied by symptoms. We find a large percentage of digestive disturbances in patients affected with floating kidney, because these ailments afford us the opportunity of examining the patient. If we were to examine all healthy persons, it would soon come to pass that digestive disturbance in subjects of floating kidney perhaps do not occur much more frequently than in those whose kidneys are in a normal position.

These digestive disturbances in the vast majority of cases, therefore, do not depend upon the movable kidney, but upon other general causes; hence an operation upon the kidney would not in the least remove the trouble. Moreover, movable kidney, as already mentioned above, is only one of the manifestations of a general enteroptosis, and suture of the kidney would not remove the ptosis of the other organs.

3. The results of nephrorrhaphy are in no respect better than those of rational medical treatment. As stated above, according to the statistics of Sulzer, the results were unsatisfactory in about one-third of the cases subjected to operative measures; aside from this, there are the risks of the operation, which still has a mortality of two per cent.

In the last few years I have personally had an opportunity of observing three cases in which nephrorrhaphy had been performed by well-known New York surgeons, and in which no improvement whatever occurred after the operation. One of the patients, indeed (Miss M. S——), both of whose kidneys had been sutured, asserted that her ailment had become considerably worse since the operation.

That some surgeons are too quick to undertake the operation is shown by the following case, observed by me during last month:

Miss L. N——, twenty-four years old, came under my observation May 12, 1898. For three years she had suffered from pains in the region of the stomach, which were especially intense about one hour after eating. The appetite is good, but, owing to dread of pain, the patient eats at present but little, and only the lightest food. Bowels are regular and urine is normal. The patient reported that about six weeks ago she had consulted a distinguished surgeon of this city on account of her ailment. This gentleman found a floating kidney on the right side, and explained to her that an operation was necessary. A nephrorrhaphy was then performed, but when, after three weeks' stay in bed, the patient got up, her old disturbances returned with the same severity as formerly. Examination of the thoracic organs showed nothing abnormal. On examination of the abdomen, however, it was found

* More detailed information on this subject can be found in my article, "The Diet of Dyspeptics," MEDICAL RECORD, January 1, 1898.

that the greater curvature of the stomach was situated one or two fingers' breadth beneath the umbilicus. At no place was there any particular tenderness to pressure present. In the right posterior upper lumbar region a scar left after the nephrorrhaphy was observed.

On May 14, 1898, an examination of the stomach contents one hour after the test breakfast showed: HCl +; acidity = 78; free HCl = 48.

On May 16th the stomach was examined in the fasting state, and was found empty. A diagnosis of hyperchlorhydria was made, and the patient was directed to take frequent meals and alkalies. Since then she has felt better, although her pains have not been entirely removed.

While, in general, I am opposed to operative treatment in cases of floating kidney, I believe that in rare instances nephrorrhaphy may be justifiable, especially when a connection between the symptoms (both the direct as well as the gastro-intestinal disturbances) and a movable kidney appears to be proven in a high degree, and the above-described dietetic-mechanical methods of treatment have completely failed. At any rate, every surgeon, before advising operative intervention in movable kidney, should completely exhaust the suggestions and remedies of the physician. By proceeding in this manner the vast majority of patients suffering from floating kidney will be relieved of their disturbances without any surgical intervention.

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20 EAST SIXTY-THIRD STREET.

VENEREAL DISEASES—THEIR RELATION TO THE PUBLIC HEALTH, TO SOCIETY, AND TO THE PHYSICIAN.[1]

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MR. PRESIDENT AND MEMBERS OF THE SOCIETY: My paper is not a scientific discourse in the use of medical technicalities, for I have purposely adhered where I could to plain English to express my thoughts. I fear some of you may think my effort better suited to the pulpit or a missionary meeting than for this occasion.

But if you agree with me that the necessity exists for giving the subject some thought in the manner I here consider it, then I am sure the discussion to follow will interest us and be a benefit to all here. I wish to ratify the authority given to health boards and other proper officials to demand from physicians reports of contagious diseases which they discover in practice. The wisdom of providing such a law and the justice of enforcing it to prevent unnecessary spreading of such diseases cannot but be manifest to any one having reason; and the physician is in this instance the keystone of the arch upon which rest the physical integrity and well-being of the people.

He is here wiser than the State, and he is master of the law; for the one must come to him for instruction and the other can execute only when his decision is made. Upon him therefore is placed the responsibility of preserving the health of a larger patronage than he realizes. How well and truly he performs his task and how well the people heed his admonitions I purpose to show.

The law relative to health matters is conspicuously inconsistent in its failure to attack contagious diseases in their greatest stronghold, and our law makers have never yet had their attention soberly and earnestly called to this inconsistency by physicians. Nor have the people been intelligently educated and aroused to harness themselves with physicians for the purpose of unitedly and perseveringly petitioning legislators to remove this inconsistency.

Syphilis and gonorrhœa are contagious, infectious, and communicable. They are dangerous to the public health and a menace to human happiness. They infect to a greater or less extent a considerable percentage of the people of all nations and tribes on the globe. They prevail and parade in the same garb and swarm with the same detestable qualities, if not with equal frequency, in Christian lands as they do among savages and heathens. They manifest no discrimination in their choice of habitation. The royal and the vulgar, the banker and the baker, the fat and the lean of either sex all alike fall heir to entertaining them as a retributive punishment for indulgence in unclean dissipation. They entail upon the old in their declining days, when life should be a guiltless and peaceful preparation for eternal rest, their plague-stricken footprints and horrifying sores.

Syphilis is a transmissible disease, and it therefore carries with it a sting and a taint for the innocent and blameless babe yet unborn: the sin of a parent's wilful transgression thus becomes the unwelcome heritage of those who deserve a better birthright than a grossly imperfect physical existence, the cause for which they themselves may never know, and the responsibility of guessing the unfortunate riddle for them may bewilder the surmises of many physicians.

Like consumption, diphtheria, and measles, syphilis and gonorrhœa are stamped with their own characteristic marks, and they are distinguished with as unerring certainty as is any disease: each is disseminated

[1] Read before the Bay County Medical Society, March 14, 1898.

only by its individual and specific germ, and neither can in any known way be made to generate or perpetuate the germ of any other disease; so when it is discovered each can be known and called by its proper name.

As to the common occurrence of the venereal diseases, their baneful effects upon the human family, and the percentage of deaths that can justly be accredited to their immediate or remote existence, as compared on parallel terms with other contagious diseases, the experience of physicians in different localities will of course be wide apart.

My own experience has been only that of a general practitioner, covering twenty-two years of urban and rural practice, and with no special effort to get venereal cases. This influences me to conclude that syphilis and gonorrhœa in acute or chronic form, linked with the various grave pathological conditions they create, lead to more misery for mankind than the six other communicable diseases named on the postal cards that have been given me by direction of the Michigan board of health, to be reported for the people's protection against contagious diseases.

According to the weekly statement of contagious diseases reported to the department of health, borough of Manhattan, New York, as given in the MEDICAL RECORD, there have been eleven diseases noticed in these reports since January 1, 1898. They are consumption, typhoid fever, scarlet fever, measles, diphtheria, croup, chicken-pox, cerebro-spinal meningitis, whooping cough, mumps, and erysipelas.

I have taken the statistics here reported because they are fairly representative of those from any large city, because they are current and undoubtedly reliable, and because I believe the comparison made with reference to the Michigan board of health will justly apply to these reports; that is to say, syphilis and gonorrhœa are more prevalent, and are the cause of more suffering to the population of the borough of Manhattan than are all the contagious diseases for which reports are required by its department of health.

The total number of cases of all contagious diseases reported to this health department from January 1st to March 5th is 9,362, and the total of deaths 1,557, or a mortality of about 16⅔ per cent. I think that if any one of the reputable physicians of New York City, who has been in active general practice there for twenty years, will calmly review his business for that time, reflectively analyze his venereal cases, and place to the credit of syphilis its primary pustule in one, its mucous ulcerations of the mouth in another, the gummy tumors of all who had them, the ugly bone lesions of many, the wholesale destruction of the visceral organs in not a few, the dozens of miscarriages due to its effects, and then let him place in the same column gonorrhœa, and credit it also with every male and female coming to him with it, with every stricture he has seen from the disease, with every old man he has seen dying with cystitis as a result of such stricture, with all the pus tubes and ovaries removed by surgeons and directly attributable to it; and again, he can go farther yet, and contemplate how many homes have been disrupted, and how many dishonored wives and mothers and disgraced children have felt the sting of the venereal diseases, and then he will be able to answer and say whether it be the reported or the unreported contagious diseases that prey most heavily upon the health and happiness of the people; and whether in the face of conditions thus stated, it is not senseless parley to discuss these conditions unless they are stripped of all morbid sentiment, or to consider them at all for the public welfare except on the plan of unveiling them without distinction, so that the people can properly recognize them in the same sense that they do all other diseases.

If Mary Jones calls at the dispensary of a hospital with a sore throat, and upon examination she is found to have diphtheria, she will be told so, and the physician will wisely report the fact to the proper authorities for caring for her. They will go to her and inform her that she is dangerous to the public health, and that she will not be permitted to communicate with other persons who are free from her disease. She will be duly quarantined, the entrance to her apartment will be suitably placarded, and the public will thereby have warning to keep away from her.

But when John Jones, her father, calls at the dispensary, and he is found upon examination to have ugly sores upon his penis, the physician smiles in a questioning way, and informs him that he has syphilis; that it is a dangerous disease to himself if not promptly dealt with, and that he will communicate it for weeks to any woman with whom he may have sexual intercourse.

At the same time that John is receiving these instructions his son James is presenting himself at another dispensary for examination and treatment. He also receives an interrogating smile, and is told that he has gonorrhœa; is likewise informed that he will communicate it to any woman with whom he may have sexual intercourse, and for weeks or months at that. Father and son both receive their prescriptions, depart with sordid mien, and without restraint from dispensary authorities, unnoticed by the law, unclean to the public, masked to society, to roam at their pleasure, to contaminate without stint. What parent having a daughter to be reared in this life, and educated under the prevailing rules of society to marriage and motherhood, who would not wish to unmask and forestall a deceitful and diseased lover before she should be united in sacred bondage to him upon whose person she would too late discover concealed the cause for her matrimonial unhappiness, the poison for her own physical ruin, the canker to infest and gnaw the lives of her children, and her grandchildren may be to the third generation?

This picture is not one of imagination, but has its original in more than one instance within my memory and experience, and its importance here to illustrate what is passing unheeded about us every day is not light, because I am sure the majority of physicians can call up in their memories like occurrences. And the application of the picture indicates the need of a remedy to restrict or prevent such occurrences, if possible. Later on I offer a means to help in that direction, and if it appears severe it is because I believe that nothing milder will accomplish what is desired—a decided decrease in the spreading of venereal diseases.

It is my opinion that the majority of reputable men in the profession find it neither agreeable, satisfactory, nor profitable to inspect and treat them. My own experience and my talk with other physicians in this respect lead me to think so. A man who will patiently submit to lying upon his back for weeks under treatment for a fever, or from some injury, and who will accept your explanations on the tedious nature of his complaint with confidence and commendable resignation, and who will pay you cheerfully for your services when he is again well, will walk into your office with the gonorrhœa, look leeringly at you as he takes his seat, and, humiliated by his disgrace, he will begin by adding a lie to his shame and unload the responsibility for his woe upon a strain he received some weeks before. After this silly introduction of his case he will appealingly beseech you to heal him in two or three days, and if you assume the management of his case he will be one of a majority soon to get intolerant of your service, go to some other physician, or be led to try the snapshot of a companion;

and when he is finally convinced that he is cured, his last drug receives the credit. You are remembered by him only in hatred, and have his condemnation without your pay for your pains. A man with a mouth reeking with syphilitic ulcers, expecting to get a start in his treatment for the dollar in his pocket and the balance on his next pay day, will never turn out to be a Klondike to the doctor who takes him on his hands. Women who come into your office with venereal diseases are more brazen than the men, more disgusting to treat, and are less remunerative to the doctor. Physicians bear altogether too much responsibility in their relations with these diseases, and receive too meagre pay for treating them to desire them to continue, notwithstanding the liberal fees announced in society schedules. Therefore doctors can well afford to make alliance with whatever plan is best suited to restrict or prevent them.

The adoption of the scheme for the State to license prostitution by causing all women engaged in it to be registered and regularly examined, would not be the unkindest cut of all to these women, provided every man who goes in to lie with them is first and at each visit himself examined and given a clean bill; and provided further that these women receive from the State a guarantee with their license that if they should become infected in these houses they would receive indemnity. Under such a state of things many married women, I know, would find greater security for their persons here than at home with their husbands, under existing conditions. But as a measure to restrict or prevent the spread of venereal disease the execution of such a plan can result only in apprehending a small fraction of the persons who do the greatest mischief to society in this direction. The keepers of houses of prostitution are themselves interested in having only women who are clean in respect to disease, for the success of their enterprise depends much upon the fewest number possible of their patrons becoming infected on their premises. They entertain complaints from such infected patrons, and cause investigations to be made by physicians among their inmates, for the purpose of finding the source of the contamination; and the woman found with it is either retired or discharged until cured. Men who visit these houses are also moved by surmise to be on their guard, and they take precaution against infection by washing themselves immediately after copulating, a procedure probably not worthless as a protection to them in many instances.

Having in mind that I should some day write a paper of this character, and wishing to be in a position to defend the radical proposition it promulgates, as against the less sensational plan of licensing vice to curtail crime and disease, I have for years made it a practice to question nearly all who came to me for treatment with these affections as to the source of their disorder, and I am convinced from such questioning and the answers received that eight out of every ten persons with venereal disease have contracted it outside of recognized houses of prostitution. This is conspicuously true of gonorrhœa. Many of the women thus specified may be prostitutes in every sense of the term, and they may regularly or irregularly inhabit such houses; but in their excursions outside they stamp the seal of iniquity with terrifying effect upon many an unfledged lad and improvident man. Then there is in every city a class of dissolute young fellows who hunt up companions among young girls who have been reared under lax home government, and as a result of these inauspicious social alliances, carried on at unreasonable hours of the night, undue liberties pave the way for boldness, and the real virtue in many of these unguarded and misguided young girls crumbles gradually away, and one by one they become victims to the curse of which I write. And in this condition many of them, while yet employed as domestics, clerks, or what not, growing more fearless as they proceed with their male associates, are not to be overlooked as a very fruitful factor in perpetuating the disease. There are other places from which trespassers on morality drink every now and then polluted draughts, found in varying numbers in all municipal communities. These are the homes of women of mature age, many of them married but not mated in fidelity, who are not entirely abandoned to vice; yet in their quiet way they maintain lascivious relations with male visitors, and not infrequently one such woman becomes responsible for the sudden appearance in the community where she lives of a half-dozen or more new cases of gonorrhœa or syphilis, and the husbands of noble women and faithful wives are too commonly the victims. The following bit of history from my own experience shows what shocking occurrences will sometimes be revealed to a physician, and points out most emphatically the need of the State's aid to avoid the repetition of like occurrences:

A girl of twelve years, whose father and mother are respectable but heedlessly indulgent with their children, was brought to my office with a vaginal discharge. The case read gonorrhœa in every particular. Several days from the time I first saw this girl a fine little boy of six years came with his mother to my office, to be inspected for a discharge from his penis. A Christian woman, devoted to her children to the verge of self-sacrifice, the mother was at first disposed to regard my statement that her boy had gonorrhœa as an insult to her. It was true, and the disease was obstinate to treat. The boy's home is only a block from where the girl I was treating lives, so I sought to relate them by tracing association between the two. I could not, nor could the mother with all her cunning. Within a day or two from this second discovery I attended a woman in labor, living two blocks from the boy. I was informed on this occasion that her little girl of ten years complained of a discharge which made her sore. Here was gonorrhœa again, and under circumstances which aroused me to a determination to find how it came in this neighborhood, and why it should be with such young persons. I conferred with the little boy's mother, and she had no trouble to get his simple story of the immodest behavior of this second girl with him. I returned to the first girl on a new tack for the history of her infection, and traced it to a girl of eighteen years, whose reputation for depravity went unchallenged and whose diseased condition at the time was a theme for raillery with her companions. She lived but a block from these two young girls, and, as if to attain the culmination of her wickedness or to grasp an opportunity to avenge the loss of her own chastity, she enticed them together to her room and there taught them in their youthful innocence their first lesson in immorality; and with her instructions she communicated to them a disease of more consequence to be rid of than mumps or whooping-cough, one having qualities which render it more dangerous to the public health and society than chicken-pox or measles, one which every respectable physician thinks of with disgust, and examines with greater dread than he does either typhoid fever or consumption.

What I have here pointed out to you does not show all avenues open to the mischief done by venereal diseases, but I have attempted to put enough on record to warrant me to urge that as a menace to immoral and unrighteously inclined parents in times of temptation; as a warning to young men and young girls against indifference to the principles of chastity, and as a reminder to them that the people have expressed a respectable regard for the purity and safety of girls and women; as a check upon the lewd, depraved mem-

bers of society, whose persons are never free from pestilence, who relish indecent and lustful associates, and who love to boast of their seduced victims as though a reward of merit had been offered for the extermination of virtue—for these reasons, and as an offer to improve the social and physical welfare of all mankind impartially, disregarding all sentimentality, heeding no exceptions in its expression of the law, the State should print syphilis and gonorrhœa upon its public-health postal cards, along with other contagious, infectious, and communicable diseases. Of course I realize that this is a most radical proposition, and I presume many of you will at first be inclined to receive it as a jest. It is not made without first contemplating seriously the embarrassments which such a step would place upon the complex structure of society as it at present exists, and what a rebuff it would receive from all who are disposed to regard venereal diseases as merely unfortunate accidents happening along the trail of the amorous relations between the sexes; who look upon such relations as practically indispensable, and upon such accidents as being surrounded by circumstances which render them pre-eminently privileged. I fully comprehend the impulsive character of the sexual passion, and recognize it as a natural physiological function necessary to the end of perpetuating our species. I argue only in favor of its curtailment within its lawful limits, and of its restraint when it is diseased and dangerous to others. You will say that if the State should ask it of them, neither physicians nor others possessing the knowledge would report to officials the names of persons having these diseases. I grant that at the beginning of such an innovation only rarely, compared with the number of cases occurring, would reports be made; but they would be of the class most prolific in the reckless distribution of the germs. They would be the impudent and dissolute chaps who boast with disgusting pride among their fellows that they have the pox, and regard their repeated doses of the gonorrhœa as of little moment to themselves or others, as if they had acquired a fresh cold; and who delight in "springing" jokes on their chums by directing them to the source whence they became infected, perfectly indifferent to the far-reaching and disastrous results to come from it. They would be women hardened to iniquity and disease to the extent that they harbor both as harmless possessions, to be cultivated and shared with others at every opportunity. There are physicians who would comply with the law and report many such cases. Circumstances would lead many of these victims to report others of their companions, and enough of them would go on record to deter many others from continuing libertine lives.

When John Jones has been reported to the health department as having syphilis, and James Jones has been reported as having gonorrhœa, what will be done with them? Have the proper official go to each of them with a notice, in printed form, containing the section of the law relative to contagious diseases, inform him that if he communicates his particular disease to any other person he will be punished according to the terms of the specific law.

Even if every physician should find the majority of the cases he discovers to be surrounded by circumstances amply justifying him to keep them secret, and only now and then at the beginning a report comes from another source, yet the method I propose for the restriction and prevention of venereal diseases will gradually wedge itself with favor into public opinion, and with less and less friction as its beneficent results are realized by the people.

Even criminal law has at times been diverted from its proposed lines of action by some extenuating circumstances connected with the deeds of culprits, whereby guilty ones have escaped justice; but the need of a law against criminal acts is none the less a just and desired measure because of that fact, and no one can doubt the restraint it places upon the conduct of many who by inclination would commit crime without its warning presence.

With syphilis and gonorrhœa printed upon the public-health postal cards, side by side with other contagious diseases, and all subject without distinction to the same sanitary law, not only would it deter thousands through fear of public exposure from risking their persons to the chances of infection that they now so recklessly incur, but the general public would have liberal opportunity to become enlightened from a reliable source and in a convincing manner by the literature, charts, and statistics which would be distributed by health boards concerning the alarming frequency of and danger from these diseases; and respectable people at least would soon be taught to view them with the serious consideration they deserve.

All participants at the communion table would have revealed to them the real significance of having individual cups for this holy service, and the actions of judges at our courts in deciding to exempt affirmers from kissing the Book, because they reasonably think that disease has been by this practice communicated from one person to another, would be correctly interpreted and rightfully upheld by those conservative people who now oppose these two innovations, and regard them as a meddlesome step toward extreme nicety and an unjust departure from a proper solemnity for these occasions. For the introduction of these praiseworthy changes the active and intelligent physicians can claim credit, and it will be by their influence, backed up by their experience in practice and armed with reports of genuine instances to prove what they preach to elders, ministers, and judges, that the new order will continue to prevail and expand.

It is the mouth sores of syphilis which physicians have chiefly in mind when they advise this caution, and the people should be plainly told so through the agencies I have mentioned.

If Dr. William Osler could speak specifically to the people, and to their full comprehension, as he does in the concrete to physicians when he says to them, "Know syphilis in all of its manifestations and relations, and what remains to be learned will not stretch the pia mater of a megalocephalic senior student," they would be surprisingly impressed with the paradoxical revelation that the health departments had been hoodwinking them with bluster about attacking contagious diseases, the most frequent of which and the ones presenting the most terrible danger to the public having been overlooked and ignored by them altogether.

It requires only a moment's reflection to conceive what a calamity it would be to mankind if to-day persons with leprosy were allowed to mask their spots and mingle promiscuously with the people, or if patients with diphtheria and small-pox were permitted to go about unnoticed and unrestrained; and we all know how limited are these diseases, compared with the population, as the result of the State's efforts to restrict and prevent their spread under present sanitary methods.

Venereal diseases on the other hand are increasing appallingly all over the world, and yet it requires only that the State should apply the same sanitary methods to them to have their presence correspondingly diminished. I have faith that the State will some day rise to the loftiness of its duty, and under not only national bnt international regulations all contagious diseases whatsoever will be lawfully noticed and satisfactorily controlled.

YELLOW FEVER OF THE TROPICS.

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THE following is supplemental to my article on yellow fever that appeared in the MEDICAL RECORD of last week.

The sequelæ of yellow fever are numerous—among others, pimples, boils, swelling of the parotid glands, at times suppuration, etc.

Malaria.—The rôle of malaria in the tropics is a constant quantity. No one living in the tropics escapes. Dr. Girerd, at Panama, devoted a great deal of time to examining the blood of Frenchmen who came to Panama while work was in progress on the Panama Canal. The blood of new comers from France was normal. After a month's residence he examined it again; malaria had made its impress in every instance.

So much by way of preface. I recall cases of yellow fever occurring in men who had been on the isthmus of Panama some months ere contracting yellow fever. After convalescence began, well-marked malarial manifestations were in order. The intercurrent rôle of malaria in tropical disease is so well known that any comment may be omitted.

Another condition met with in such convalescents, especially in the severe cases, was the very slow pulse. Its slowness, while the disease was active, has been dwelt upon. Its slowness during convalescence will cause much surprise to those to whom the disease is a new one. At times it will be found as low as 35 and 40. It remains slow—at times for days together. Gradually it gets back to a normal standard, as strength is regained.

The temperature in many cases during the early days of convalescence will be subnormal—97.5° - 98° F. In many cases this will be observable for days. In the cases in which malaria is an element, after days it will run up and show its own characteristics, when small doses of quinine are in order.

When death follows, the body is that of a well-nourished individual. The majority of its victims are men and women previously in full health. Death has come so quickly that the wasting has been almost *nil*.

The rich tinting of the skin in the convalescents may remain weeks and occasionally months.

The sending of the convalescents to a northern climate to complete convalescence is very necessary. Convalescence is much more rapid. When fully restored they can return, forever immune.

I have yet to learn of a case of secondary yellow fever in any one who has had specific yellow fever. I have compared notes with many profoundly versed students of yellow fever. I fail to recall a single exception to this statement, and it embraces my own as well as the experience of practitioners in the several localities named.

Post-Mortem Findings.—My post-mortem work simply confirmed what an old-time and clear-headed American writer on the disease has stated: "Yellow fever has no pathology." Dr. Grenville Dowell's brochure is an "arsenal of facts."

The conditions found are so variable, in patients cut off by the disease and who have had the same symptoms, that no fixed reliance can be placed upon them. Kindly recall my earlier statement, embodying my view, that it is a blood disease and that the poiso expends itself in the blood. If this view is accepted, any marked pathological changes, except in the blood, need not be expected—save those in certain organs due to imperfect nutrition caused by the impaired blood.

The Liver.—Many writers on yellow fever dwell on the liver. That so large and so important an organ should suffer will not surprise one familiar with malaria and tropical disease.

The yellow or chamois-skin liver is supposed to be the characteristic liver in yellow-fever post mortems—that is, according to the text-books. I never saw but one, and that was the result of upward of one hundred post-mortems conducted by Dr. Didier, an M.D. of Paris, and the physician-in-chief to the Panama Canal hospitals at Panama.

In my own post-mortem work, I have found it presenting a normal appearance to the eyes; again, fatty, with an easily detached capsule; yet again, fatty and on section showing many tiny oil globules. In the latter case the patient, a Scotchman and a physician, a large heavy man, had been stricken with the disease a few days after landing at Panama. In short, nothing constant in this organ.

The Kidneys.—Again no constant condition. Many normal to the eye; others large, in harmony with the hepatic degeneration. In several cases the kidneys appeared to be smaller than normal.

The Stomach.—In view of the great pain and constant vomiting, including "black vomit," one naturally would expect to find in it marked pathological changes. It always presented signs of marked inflammation. Coats thickened. It contained more or less black vomit. In one case I found all of a pint of it. Frequently the inner surface showed many foci or well-marked minute points of a deep carmine hue. Again, small spots of blood, adherent to the wall of the stomach.

Dr. Castellanos, then a physician at Panama and physician to the Military Hospital, had had a very large hospital experience in his native island, Cuba. He told me that it was the only constant condition found by him in yellow fever, *i.e.*, signs of acute inflammation of the stomach. While in Cuba he had made nearly one hundred and fifty autopsies in yellow-fever cases.

Drs. Didier and Castellanos jointly had made nearly two hundred and fifty autopsies. A number of us at Panama were working in close touch and in perfect harmony, constantly comparing notes.

Dr. Castellanos' early field had been Cuba, where a history of the disease has been recorded for over one hundred successive years.

Dr. S. Didier, a native of Martinique, French West Indies, came from a centre frequently swept by epidemics of yellow fever.

Dr. Girerd, my brother, the late Dr. George W. Nelson, and myself—we had to face it in epidemic form, as strangers, and learn of its death-dealing powers.

The Brain.—Dr. Didier, in his large experience, found "*rien digne de remarque*"—"nothing worthy of recording."

The Intestines.—Frequently they contained the "black-vomit stools"—a dark, pitchy substance, or altered blood. The motions of such patients by many inexperienced men are deemed a diarrhœa.

The Bladder.—Generally it contained a few drachms of highly albuminous urine. Remember the previous suppression.

Among other noticeable things, the body retains its temperature for many hours after death. Its coloring was very pretty—a light canary-yellow, with spots in dependent situations of a mulberry tint on a yellow field. Its early and great rigidity was very marked.

Regarding black vomit, nearly all the cases in which it appears end fatally. The French writers on yellow fever happily name it *marc de café*, or "coffee-ground vomit." The name is clear and very expressive. It has a peculiar odor, an odor very difficult to describe. Confusion may arise in the minds of students of yellow fever when the disease is new to them. Are the vomited matters bilious in character or do they contain altered blood? Of course I know what the mi-

croscope tells us of such material. To clear up the question of bile, I collected some black vomit from a Swede, a sailor, whom I had under observation in hospital, and tasted it. It was faintly acid. As I had had the disease at Panama during the epidemic of 1880 I did not deem the experiment as being in any way dangerous to me. I wanted to dissipate a doubt, and that was the only way to do it.

Black vomit is an indication of blood changes. Blood exudes from the mucous surfaces. In women quantities of blood come from the vagina. Frequently the tongue in fatal cases becomes a fiery red; as it loses its mucous membrane the blood exudes—a very bad symptom.

When black vomit is allowed to settle, the altered blood goes to the bottom of the vessel, while the upper fluid resembles in color weak black tea.

Regarding the blood found post mortem, I always found it in a fluid condition. Two hours after death I got enough to take its specific gravity. It was normal.

As I have stated in my earlier article, Dr. Girerd examined the blood microscopically in a fatal case, and failed to find a single red corpuscle. Let us remember the very large amount of albumin found in the urine—often twenty-five and fifty per cent.

To repeat, I deem yellow fever of the tropics a blood disease pure and simple. I have held this view since 1884. If I am right in the matter, we have, I think, a full explanation of many of the symptoms of yellow fever and the absence of many looked-for pathological changes. The symptoms and changes are due to necræmia or death of the blood.

Virchow attributes loss of consciousness to the failure of the red corpuscles to carry oxygen.

Much remains to be explained about yellow fever. It is our old enemy. Many honest and patient toilers are at work on this great and timely problem.

Dr. Domingos Freire, of Rio de Janeiro, Brazil, was the first investigator along a special line. In 1879 and 1880 he commenced a series of experiments with earth taken from over the bodies of yellow-fever victims buried in the Sta. Isabel Cemetery, near the city of Rio de Janeiro. The earth was washed. With the washings he made cultures, and later injected the fluid into the tissues of guinea-pigs. Result, fever, great disturbance, and death. Next he took blood from yellow-fever patients and made cultures. The early or strong cultures killed the animals used for experimenting. Later, attenuated cultures were used, when the animals showed some febrile movement and escaped. Next, he used on the animals so protected the strong cultures, and they all escaped. In the animals not made immune the strong culture killed them without exception.

Next, he dealt with man. Years of time, study, and research have been devoted by him to an effort to solve this great question. He believes, and many familiar with his work, including the writer, believe that he has found a fluid or culture that, injected into the human body, causes a mild type of yellow fever and that it confers a certain immunity.

Vaccine is used to protect us against small-pox. Much of our reasoning regarding vaccine and its exact rôle in the human body is empirical. It protects, and that seems to be ample for general purposes.

The fact remains that Dr. Domingos Freire has been indorsed by the government of Brazil; that a considerable sum annually has been voted to aid him in his excellent work — work faithfully carried on along Jennerian lines.

I have been familiar with Dr. Freire's work from its inception. If my memory is right, I was the first to translate his early reports—back in the early eighties.[1]

[1] Canada Medical Record, Montreal, 1882–83.

Dr. Carlos Finlay, of Havana, for many years past has been experimenting along the same lines, making cultures, etc. In 1887, I had the pleasure of comparing notes with him in Havana and of examining his cultures. Dr. Delgado, of that city, was associated with him in the work.

Dr. Freire named the germ discovered by him the cryptococcus zanthogenicus. Dr. Finlay named the germ found by him the cryptococcus tetragenus flava.

Dr. Finlay, fully twenty years ago, pointed out the mischief caused by mosquitoes in transmitting disease, particularly yellow fever. This function of the mosquito seems to have been rediscovered of late.

Dr. Girerd, at Panama, following along the lines laid down by the discoverer, Dr. Freire, made cultures from the blood of yellow-fever patients. When they were sufficiently attenuated, he gave himself a few injections, but did not push it to full immunity. Then he proceeded to give the best possible proof of his faith in the matter by a crucial experiment in his own person. In the yellow-fever building of the Panama Canal Company (acting on Dr. Finlay's discovery) he allowed mosquitoes to settle on a man who had severe yellow fever—man in fifth day of the disease. Later the mosquitoes were captured and allowed to settle on Dr. Girerd's hands. At the end of two days he had the symptoms described by me under the heading mild yellow fever. His case was watched carefully. All the symptoms were noted. Albumin was found in the urine. His personal experience I duly translated and it was published in the *Canada Medical Record*, Montreal, in 1885, together with an editorial.

The honor and credit in this matter are due wholly to Dr. Domingos Freire. His work was confirmed by Dr. Finlay, in Havana, and by Dr. Girerd, at Panama. The gentlemen named have worked in perfect harmony, seeking a common end—the good of their fellow-men.

Dr. Domingos Freire's latest work on this matter has just been issued, and its title is as follows: "Mémoire sur la Bactériologie, Pathogénie, Traitement et Prophylaxie de la Fièvre Jaune." The above memoir of one hundred and sixty-one pages was duly presented to the Madrid International Congress of Hygiene and Demography, that met there in the spring of this year.

The Bacilli of Beriberi.—Dr. G. Nepveu describes three varieties of bacilli which he has isolated in the blood of beriberi subjects: the large, the medium-sized, and the small bacillus, as he terms them. The large bacillus is seldom found in the blood-vessels, and then only in association with the two other forms; it is demonstrable in the kidney, in the glomeruli, in the convoluted tubules, in the loop of Henle, and occasionally in the tubuli recti. It is 6–10 μ long, and 0.3–0.4 μ wide; is straight or slightly curved, with rounded, dark-colored ends, and has a distinct capsule. The medium-sized bacillus is 3–4 μ long and about 0.3 μ broad. Like the former, this bacillus shows also, after proper staining, alternate light and dark areas. It is found in abundance in the arteries, capillaries, and veins of the kidney; sometimes in almost pure cultures. The small bacillus exists in large numbers in the blood; it is as long and about one-half as broad as the tubercle bacillus, and is bent at a slight angle. It is found close to the border of the red blood corpuscle, giving it a toothed appearance. The writer thinks it possible that these three forms are identical. The large and medium-sized varieties show a marked resemblance to the bacillus of chicken cholera and of rabbit septicæmia.—*Centralblatt für innere Medicin*, No. 11, 1898.

THE ROENTGEN RAYS IN SPINA BIFIDA.[1]

By CARL BECK, M.D.,

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In speaking of spina bifida one is apt to think only of its cystic form and of its location in the lumbo-sacral region. But besides this most common type there are several others, which require to be distinguished before we can choose the proper therapy. Thus it cannot be a matter for indifference whether there is (1) a so-called simple meningocele—in other words, a hernia-like protrusion of the pia, containing cerebral fluid; or (2) a myelomeningocele, a frequent variety, which is characterized by the spinal cord expanding itself, like the optic nerve in forming the retina, around the protrusion, and, together with the pia, constituting the sac; or (3) whether there is a myelocystocele—that is, a tumor caused by cystic dilatation of the central canal of the spine.

It is also important to discriminate whether the tumor is situated in the cervical, dorsal, lumbar, or sacral region. If situated in the cervical or dorsal region, the cord cannot protrude into the hernial sac, as it does in the lumbar or sacral portion, which corresponds to the end of the cord. It is also desirable to know whether there is a hiatus in the spinal column, and how extensive it may be; and furthermore, whether or not the fluid contained by the tumor can be dislodged into the spinal canal.

In view of these anatomical distinctions, it will be easily understood that simple meningocele gives the best chances of a cure. Whether injection treatment or extirpation, however, should be preferred, is not yet agreed upon among the profession. I have cured three or four cases of simple meningocele by repeated aspiration, followed by the injection of a few grams of a ten-per-cent. iodoform-glycerin emulsion; and I generally prefer injecting to extirpating, provided the surface of the skin be normal. But if there be well-developed gangrene, or even any considerable abrasion of the epidermis, then septic infection of the cyst wall cannot be arrested unless immediate and extensive removal is undertaken.

On the other hand, myelomeningocele and myelocystocele offer a less favorable prospect. In these cases the injection treatment is always a failure. If in myelomeningocele the nerves are freely dispersed in the sac, the area medullaris vasculosa, after being circumcised, must be reduced into the vertebral canal, and the union of the soft tissues above must be perfected in the most minute manner. If the nerves have dishevelled themselves in the wall of the sac, the latter, after having been freely exposed, must be reduced in the same way. If situated in the lumbo-sacral region, the preservation of the nerve strings is of but little importance.

In myelocystocele the reposition should be made in the same manner. If there be any opening in the bone, protection should be sought by covering it with strong flaps, consisting of integument and muscle. It goes without saying that such delicate operations must be performed only after the most rigid aseptic precautions. Hemorrhage can be reduced to a minimum by temporary constriction, applied by a small rubber tube and by methodical interrupted compression.

According to the unanimous opinion of all authors known to me, one of the greatest difficulties encountered in the treatment of spina bifida is that its various types cannot, as a rule, be defined before operation; between meningocele and myelocystocele, indeed, the certain distinction is (often) quite impossible. Sometimes conclusions may be drawn if an opening of the bone can be palpated, or if a portion of the fluid can be reduced into the spinal canal by pressure. Paralysis of the lower extremities, of the rectum and bladder, all point to the existence of myelomeningocele; but all these signs are far from being absolutely reliable. Considering only this one point—that in meningocele aspiration should be tried first, while in the other varieties extirpation should be resorted to—it must be admitted that our deficiency in scientific knowledge makes itself felt rather strongly as regards therapy. Some authors advise opening the lower portion of the tumor first, in order to ascertain whether the spinal column is open, as in myelomeningocele, or not open, as in meningocele. Koenig and Hildebrand go so far as to emphasize the necessity of ascertaining how the nerve strings are dispersed, by first making a lateral incision into the tumor, even after they can state that there is a myelomeningocele.

All these procedures, the reason for which no surgeon would dispute until recently, are now rendered entirely superfluous by the discovery of the Roentgen rays. The skiagram shows with absolute distinctness not only whether there is an opening in the bone, but also tells of the presence and sometimes even of the expansion of the nerve substance in the sac. In those rare cases in which the presence of lipoma or fibromyoma is in question, it is again the skiagram which gives the needed information.

The skiagram which I had made represents a formidable specimen of the lumbo-sacral type of spina bifida, and serves as an illustration of these views. The integrity of the spinal column and the cystic character of the contents of the sac are there apparent. (If any nerve strings were present, a marked shading would be noticeable.) In this case a very extensive gangrene of the surface of the tumor induced me to resort to extirpation, which verified the correctness of the skiagram. Had there been no gangrene, I should surely, on the testimony of the skiagram, have selected the injection treatment.

The patient, a boy, was five days old when the operation was performed. While this article goes to print, four weeks after the operation, he is doing well.

[1] Case presented at a meeting of the physicians of the German Poliklinik, March, 1898.

Progress of Medical Science.

The Therapy of Carcinoma of the Rectum.—Dr. Hochenegg has operated in 129 cases of rectal carcinoma since 1890; of these 34 were colostomies, 89 sacral extirpations, and 6 perineal amputations (*Wiener klinische Wochenschrift*, 1897, No. 32). Of the 89 sacrally operated cases, 8 were fatal, though 3 of the deaths had no connection with the operation. This is certainly a magnificent record. The writer refuses operation in cases of marked general debility and when there are symptoms of internal metastases; in cases in which the tumor is immovably fixed in the pelvis; and when the glandular infection cannot be limited by the examining finger. Adhesions to the prostate, bladder, vagina, or uterus form no contraindication to a radical operation, since these organs can if necessary be extirpated. In doubtful cases a colostomy is at first performed; two weeks later, when the tumor becomes less fixed, the extirpation is done. Symptoms of acute intestinal obstruction also form a contraindication to radical operation. Radical extirpation may be performed by either of two methods, different in principle: perineal and sacral. Hochenegg applies the perineal method in those cases also in which the carcinoma has not involved the anal portion very high up and in which the rectal mucous membrane is soft and easily movable over the tumor. In all other cases he prefers the sacral operation.

His procedure in the sacral operation is as follows: With the patient on the left side, a convex incision is made—with the convexity toward the right—from the left sacro-iliac synchondrosis to the right lateral border of the coccyx. After the skin has been raised, the coccyx is extirpated and the left wing of the sacrum is chiselled off; in extensive carcinomatous disease the sacrum is severed transversely. Further procedure depends upon the location and extent of the tumor. If the anal portion be also involved, an incision must be made around this portion; the rectum is then isolated and amputated to a point above the site of the neoplasm; the lumen of the remaining rectum is drawn down and sewed in the place of the removed anus, or is brought under the skin at the site of the removed sacrum (anus præternaturalis sacralis); the writer prefers the latter method. If the anal portion be not diseased and the sphincter intact, the severed rectum and the healthy anus are sewed together; this is the "ideal" operation. To prevent separation of the line of suture, because of the insufficiency of the circular stitch, Hochenegg proceeds as follows: The tumor is isolated and cut off above, and is then isolated below, but not yet amputated. The healthy rectum above is then isolated and the amount of its mobility is tested. If this portion of the rectum can be easily brought to the anal opening, the tumor is cut off transversely at a point one centimetre above the sphincter, the anal portion everted and freed of its mucous membrane with forceps and scissors; through the tubular wound surface thus produced the healthy rectum above is drawn and is sutured *in situ*. There are two rows of sutures: one, introduced from the outside, in front of the anus; the other, introduced through the sacral wound. Finally, the ring of the sphincter is connected with the rectum by several buried sutures. If the healthy rectum above is not sufficiently movable to be brought so far down, less of the anal portion must be sacrificed. If the rectum cannot even for a short time be brought through the anal opening, nothing is left but to introduce the sutures through the sacral wound. After the introduction of the sutures the writer leaves enough of the wound open to secure drainage. The bowels are moved after the fifth day of operation. At the slightest sign of phlegmonous inflammation, the whole wound is immediately reopened and drained.

Antidotal Action of Pulped Nervous Tissue upon Strychnine.—M. Toniot and M. Georges Brouardel communicated to the meeting of the Hospitals Medical Society held on March 29th, some observations of M. Widal and M. Nobécourt on the antitoxic action of pulped nervous tissue upon morphine and strychnine. If a mixture of one gram of nerve substance and a fatal dose or even twice a fatal dose of sulphate of strychnine is injected into a guinea-pig, M. Toinot and M. Brouardel found that the animals in question invariably lived. The observers made researches into the cause of this interesting fact, and found that strychnine was really present in the mixture, that it had not lost its toxic properties, that dilution of the poison made no difference, and finally that guinea-pigs thus experimented on, if treated with a fatal dose of strychnine, forty-eight hours afterward always died, showing that they were neither refractory nor immune. M. Toinot and M. Brouardel also tried the effect of fatal doses of strychnine mixed with various inert substances, such as charcoal, talc, potato starch, and spinach, and they found that an admixture of these substances had the same preservative effect as nerve pulp, if used in the same proportion and doses. Results were just the same whether the mixture was made twenty-four or forty-eight hours previous to the injection or immediately before. The explanation of these results is in reality very simple and is easily verified by a chemical experiment. Mixtures of carbon, talc, or nerve pulp with strychnine give a filtrate which is absolutely non-poisonous to guinea-pigs, and which when tested shows not the least trace of poison, which, however, can be extracted from the material left behind on the filter. It is obvious, then, that in an injection of this mixture the poison is so fixed and held that it cannot act as a whole, but is set at liberty only very gradually, and the very slowness of this action prevents a mortal dose being set at liberty at one time in the organism. Chemists know well that a solution will give up to inert bodies in certain cases that which it holds in solution, and organic pulps have the same inherent properties and play the same part as inert bodies, as is evident by these experiments. These facts show, moreover, that we must not be too hasty in ascribing antitoxic properties to animal tissues.—*The Lancet.*

On Compensatory Hypertrophy of the Suprarenal Capsules.—Dr. Simmonds, in an article read before the Biologische Abtheilung des Aerztlichen Vereins, Hamburg, March 8, 1898, says that the fact that there are ofttimes no symptoms in extensive disease of the suprarenal capsule makes it probable—reasoning from analogy—that other healthy portions of the capsule become hypertophied and take up the proper function of the gland. He describes such a case, in which one suprarenal capsule was atrophic (weight, two grams), while the other was hypertrophic (weight, fifteen grams). The hypertrophic gland was normal both microscopically and macroscopically; the atrophic gland showed connective tissue and smooth muscle-fibre bundles scattered throughout the gland. In one corner of the atrophic gland were found isolated miliary tubercles, proving these to have been the cause of the atrophy. The speaker described his experiments on animals, in which, after a one-side extirpation of the suprarenal capsule, there was always a vicarious compensatory hypertrophy of the remaining gland in a short time. From these experiments and from his observations on man, Dr. Simmonds concludes that these capsules belong to those "pairing" organs of the body, in which one undergoes vicarious hypertrophy upon disease of the other.

Experiments on the Therapy of Infected Gunshot Wounds.—The experiments were made by Dr. H. F. Koller (*Deutsche Zeitschrift für Chirurgie*, Bd. xlvii., p. 211) with bacteria cultures virulent for rabbits, yet not so virulent as necessarily to cause death. Weak cultures of staphylococcus aureus, pyocyaneus, and a streptococcus capsulatus were employed. The experimental gunshot wounds were all made in the thigh, without doing injury to the arteries, nerves, or bone. The after-treatment of the wounds was conducted in the following series: (1) In the control animals a simple bandage, with or without suture; (2) energetic thermo-cautery; (3) pencilling of the wound with strong tincture-of-iodine solution; (4) drainage of the wound with iodoform gauze; (5) glass drainage; (6) disinfection of the wound with carbolic-acid solution (five per cent.). The interesting and practical results showed that the control animals treated with the simple bandage, and the other animals treated with glass drainage or iodoform-gauze drainage, and one (infected with pyocyaneus) treated with five-per-cent. carbolic-acid solution—were all cured. On the other hand, the remainder of the animals treated with five-per-cent. carbolic-acid solution and those treated by iodine tincture and thermo-cautery all died. This proves that, despite the destruction of germs in the wound, the bacteria infected surrounding tissues and thus did much harm.

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THE SOLDIER AND THE MEDICAL DEPARTMENT OF THE ARMY.

NOTWITHSTANDING the complaints of the entire press of the country regarding the neglect of the sick and wounded in our late battles, the secretary of war seems to be content to dismiss the whole subject with the statement that whatever occurred was to have been expected and that in reality no one was to blame. In other words, he wishes it to be understood that there was no way to prevent the sending of transport ships loaded with soldiers and without medical supplies or surgeons, the crowding of soldiers into quarters not fit for cattle, and the neglect of the sick and wounded exposed as they were on the battlefield for days together without medical or surgical assistance. It is hardly warrantable for him to say that these are not facts, even if they were based only on newspaper reports. The surgeon-general of the army, in the last issue of the MEDICAL RECORD, in answer to our former queries, makes from his standpoint an excuse for shortcomings in his department, but does not wholly explain why such excuse should have been necessary. The dreadful fact stares every one in the face that the poor soldiers, who had a right to expect everything from a country for which they were willing to sacrifice their lives, really did not receive as good treatment as would have been given to ordinary cattle under like circumstances. Close and filthy quarters, bad food, and foul water were the disgraceful incidents connected with the incoming voyage of one transport after another. These were hardly the ordinary accidents of war, considering the ample time allowed the authorities for preparing for such emergencies.

Every one having responsibility in the premises is ready with some sort of excuse, but none seems to be able or willing to discover the actual guilty parties. The surgeon-general in a measure accounts for the misery and suffering of the sick and wounded by saying that the medical supplies were left behind at Tampa. Whose business was it to have prevented such a gross neglect of ordinary duty? If the general of the army is to blame, he certainly should be called upon to add his quota to the long chapters of explanations from other army officers. Who was the medical officer in charge of these supplies, and why did he not protest at the right time and in the right way as soon as he discovered the true nature of the situation? It was his business to remind his superior officers of the facts, and thus absolve himself from all responsibility in the matter. But apparently he said nothing until called to account by the surgeon-general and then he throws the blame on the commanding officer at Santiago. But General Shafter says the entire responsibility rests upon the medical department.

It seems proper and just, and it ought certainly to be possible, that the blame should be fixed directly on some party who can be proved guilty by a properly conducted and reasonably exhaustive examination into all the facts in the case. Even the secretary of war cannot hush up a proper inquiry because he may for reasons of his own think that it would not be either interesting or instructive. It has not yet been made clear why some of the transports came to New York without medicines, and in one or two cases without surgeons. Surely the commander-in-chief did not leave the surgeons side-tracked at Tampa along with the quinine pills. This sending of sick troops on a sea voyage without surgeons, medical supplies, or even digestible food is too serious a matter to be dismissed with a mere statement that such was not the case and that all the newspapers misrepresented the actual condition of affairs. Those at the front who had the matter in charge should throw some light on the whys and wherefores of such lamentable results. The surgeon-general still owes it to the public, to the profession, and to the noble, faithful, and energetic members of his corps to urge the fullest investigation into all the facts, and to answer still more effectually than he has thus far done the widespread criticism of the management of his particular department. We have some facts, but many more have still to be presented before the real blame can be made to rest where it should properly belong.

THE AMBULATORY TREATMENT OF FRACTURES.

DURING the past few years much has been written concerning the ambulatory treatment of fractures of the long bones. A great deal of interest has been manifested, both here and abroad, and a great deal of confusion, more than is warranted, seems to exist in the minds of some who have spoken and written upon the subject, as to exactly what ambulatory treatment is. Many of those who have discussed the question appear to be under the impression that the ambulatory treatment of fractures consisted in the application of a plaster-of-Paris splint, say to a fractured tibia, in the usual way, and the allowing of the patient to get about on crutches as well as he might be able to do. This method of treatment can certainly not be designated ambulatory, in the sense in which the term should be used. The patient is undoubtedly getting about, but it is largely his determination or his necessity and his success in learning to use crutches that enable him to do so. In these instances the discomfort of the

patient is apt to be much increased by the swelling of his foot, which results in part from its dependent position and in part also from the fact that the muscles are not acting, and consequently are not assisting venous return.

Those writers and speakers who have the clearest conception of what ambulatory treatment really is have given us quite another picture. Still taking a fracture of the tibia with or without a fracture of the fibula as an example, we have described to us a radically different but superficially similar procedure. This true ambulatory treatment consists in applying the plaster of Paris to the limb so that it is suspended in a rigid case from the knee down, and is enveloped in soft material with a thick pad under the foot. The weight of the body in attempts at walking is carried by the splint, which must have a thickly padded collar of plaster of Paris at its upper end, just below the tuberosities of the tibia, upon which the weight of the body rests. The whole splint must be strong enough not to "buckle" under pressure, and still must not be so heavy as to prevent the patient getting about with ease. If we apply such an apparatus soon after the occurrence of the fracture, and allow the patient to attempt to walk, perhaps with the aid of one or two canes at first, we are really employing ambulatory treatment. The success of the method will of course depend to some extent upon the nature of the fracture, and we shall also find that patients will vary very much in their inclination to avail themselves of the possibilities of this method.

Fractures close to the knee-joint, especially if there is any comminution, would be better treated by some other method. Fractures of the femur may in some cases be treated by the ambulatory method, but the apparatus must necessarily be much more cumbersome, and the difficulty in maintaining sufficient extension may be considerable.

There is another side to the question in introducing a therapeutic measure which seems so different from accepted methods. Many surgeons would hesitate, and very justly, to attempt this form of treatment, because of its effect on the mind of the patient. The idea that a broken bone must be "set" and held firmly in position is so well fixed in the minds of the laity that, if we should neglect to go through some process which we must describe as "setting" with subsequent fixation, we may leave a germ in the patient's mind, the mature fruit of which will be a charge of incompetence and neglect, and a suit for malpractice in case the result should not be perfect, something which can practically not be absolutely guaranteed. Wrapped up in this idea of "setting" is the idea that fracture of the leg must be treated by rest in bed, so that the bones may "knit."

It is for such reasons that our treatment of fractures, especially of the long bones, has been of the most conservative nature, and our hesitation has been so great to depart from the old lines. However, in selected cases, this ambulatory method has given results good enough to encourage us to go on with it, and to attempt to define the limits within which it should be applied.

THE HEROES AT THE REAR.

Amid all the bitter charges of culpable inefficiency in the medical, commissary, and quartermaster departments at Santiago, there has never been anything but praise for the noble work of the surgeons in the field or in the fever camp at Siboney. Few in number and handicapped by the lack of almost everything usually regarded as indispensable in operative surgery as well as in the treatment of the sick, these men worked on and on, day and night, in sun and rain, without food and without rest, doing what they could with the little they had at hand for the relief of suffering and the saving of life. A *Sun* correspondent, who visited Siboney after the army had passed on and the fever-infected town had been burned, describes the scene in a few words:

"The train was an hour and a half lurching down to Siboney. What a forlorn, repulsive place it was, all ruins and soiled tents, the air impregnated with sickening hospital odors! The tents covered the wounded and sick who had not been taken off to the cool relief ships and the twenty-fourth (colored) infantry. Sullen and listless, the soldiers sat about their tents as if hating their fate and dreading the fever, and no sound came from the wounded. The hospital doctors were quiet and thoughtful, and their eyes sometimes scanned the sea for a sail, which was force of habit. They seemed to be unsociable, but they were weary almost unto death. These men were the heroes of the rear, and they deserved the medal of honor even more than the men who had led their companies up to the trenches on San Juan. The story of their devotion to duty and sublime unselfishness can never be written, but if there is a recording angel it was not in vain."

Here were no deeds of valor aroused by the din of battle, the fever of action, or the example of others—only the higher heroism of the man who does his duty as he finds it, with no hope of reward other than the ineffable peace of a quiet conscience.

Another correspondent writes of the surgeon in charge at Siboney: "A stocky figure in a faded service uniform of brown, a round, full face with a quiet gray eye, almost a sleepy face, and you have Major La Garde, in charge of the hospital for wounded at Siboney. He always wore a linen helmet night and day. No one ever saw him lay it aside, certainly not during those awful nights in the beginning of July, when the groans and moaning of the wounded were heard ceaselessly from the cots of sufferers. It was La Garde over whose face the tremor of sympathy ran when a badly wounded man was brought in, and when the procession of unfortunates grew it was La Garde who bustled about to make room for a new patient; it was La Garde who looked after the nurses, brought help to the operating-table, wrote prescriptions hurriedly, made a hundred suggestions, answered all questions, whose watchful eye saw everything, and who uncomplainingly made the most of the means at his command—the hospital was none too well equipped. . . . Assistants left this brave doctor; hard work, loss of sleep, the reek, the sights, and, finally, the yellow fever were too much for them; but he was enlisted for

the war and stayed to the end. It would have been morally impossible for Major La Garde to find an excuse for leaving his post. The writer last saw him on July 26th. The man was brain-fagged and spent from physical weariness. His step was not so quick and firm as it had been, but he was still game to the core, and there could be no doubt that he would be the last man to leave the hospital. . . . Shafter took Santiago; La Garde took men's hearts, and he will live in them. Duty was his beacon."

This war has demonstrated to an incredulous world that the American soldier is second to none in any of the qualities that make a warrior, and the members of the medical corps are second to none of their combatant comrades in any of the qualities that make a hero.

THE METRIC SYSTEM.

The metric system dates from the time of the French revolution. In 1789 the French national assembly determined to reform their weights and measures and enforce a uniform system throughout the country. At the same time, with the view of devising a system which should be adopted universally, they invited the other European nations to take part in a conference for the purpose of considering the matter. England alone of the nations refused to be represented at the conference.

At the present time the metric system is in use for all purposes by all the civilized nations, with the exception of England, Russia, and the United States. Here its use is optional, and in Russia it will soon be obligatory. It is argued by some that, as our commerce, exports, and imports with the United Kingdom amount to much more than with all other European countries put together, therefore we and England should not be dictated to as to what methods of measurement we are to use, but rather are in a position to dictate to the world. However, this argument will hardly hold water, as it has been conclusively shown that a large amount of trouble, not to speak of risk of error in calculation, would be avoided by the adoption of the decimal system. Undoubtedly the change would occasion some temporary inconvenience, but this would in the long run be more than counterbalanced by the benefits resulting from it. Happily there is evidence in both countries that both scientific and business men are becoming convinced of the superiority of the metric system, and it is probable that ere long it will be in force in all parts of the civilized world. The International Railway Congress, at its session held in London, June to July, 1895, adopted the following resolution: "The congress expresses a unanimous desire that those countries which hitherto have not employed the decimal system should make every effort to adopt the metric system as soon as possible for their weights and measures."

In the revised edition of the British Pharmacopœia, recently published, the members of the council have done their best to hasten the adoption of the metric system by using both systems. One thing is certain, that if either this country or the United Kingdom decides upon the enforcement of the decimal system the other country will be compelled to follow suit. Why should not America lead the way?

News of the Week.

A Conference of State and Provincial Boards of Health of North America was opened at Detroit on August 10th. On the day preceding the opening there was a meeting held in celebration of the quarter-centennial of the Michigan State board of health, at which many congratulatory addresses were made by visiting sanitarians, of whom nearly one hundred were present.

Dr. John McG. Woodbury, of New York, has been appointed by General Wilson, the military governor of Porto Rico, chief surgeon of the sanitary corps for the island. Dr. Woodbury was on General Wilson's staff previous to his appointment as chief sanitary officer.

Prof. E. v. Leyden, of Berlin, was recently elected corresponding member in the section of medicine and surgery of the Academy of Sciences of Paris.

The Canadian Medical Association will hold its thirty-first annual meeting in the reception hall of Laval University, Quebec, on August 17th, 18th, and 19th, under the presidency of Dr. J. M. Beausoleil. The preliminary programme contains the titles of twenty-four papers which are to be presented during the meeting.

The White Cross Mission is the name of a new society recently organized in Oregon. It is similar in character to the Red Cross Society, and with the permission of the war department will begin its work of nursing at Manila.

The Philadelphia Pathological Society.—Drs. William H. Welch, of Baltimore, M. V. Cornil, of Paris, and R. Virchow, of Berlin, were recently elected corresponding members of the Pathological Society of Philadelphia.

Dr. Pepper's Will.—Contrary to expectation, Dr. Pepper, whose will was probated in Philadelphia on August 9th, left no public bequests. The document provided for a gift of $75,000 to the University of Pennsylvania, but a codicil revoked this bequest, with the explanation that the gift was made during Dr. Pepper's lifetime.

Survival from an Electric Shock.—An employee of one of the underground trolley roads in this city apparently received a discharge of two thousand volts through his arms a few days ago and was not killed. He entered the conduit through a manhole in order to remedy some defect, but while climbing out after completing his task accidentally placed both hands on the channel rail. He was instantly rendered unconscious and was picked up apparently dead, but soon revived and had only some severe burns on the hands to remind him of his carelessness. The full strength of the current was two thousand volts.

Veterinary Study in Massachusetts.—The last legislature of Massachusetts appropriated $25,000 for the erection and equipment of a veterinary laboratory and stable hospital in connection with the State Agricultural College. Provision was also made for an annual appropriation of $1,000 as a maintenance fund for the veterinary laboratory, to provide means of instruction, and to carry on investigations of the diseases of domestic animals. This allowance is to be made from January 1, 1899. Two new buildings are to be erected. One will be used as a hospital, and the other will contain the class-rooms for students in veterinary science, the private office of the professor in the department, his cabinet of specimens, and other rooms connected with the work. The cabinet will open into the laboratory, so that the specimens can be used for either class-room or laboratory work. The Agricultural College, although giving a thorough preliminary course in veterinary medicine, does not grant any degree. Those who wish for this must take the regular courses in professional veterinary schools.

A Polish Medical Congress.—Preparations have been making for several months to hold a congress of medical men from Russian, Austrian, and Prussian Poland. The meeting was to have been held this summer at Posen, but now the Prussian government has forbidden it, through fear that it would serve as an occasion for a Pan-Slavic propaganda, which would be highly disagreeable to both Austria and Prussia.

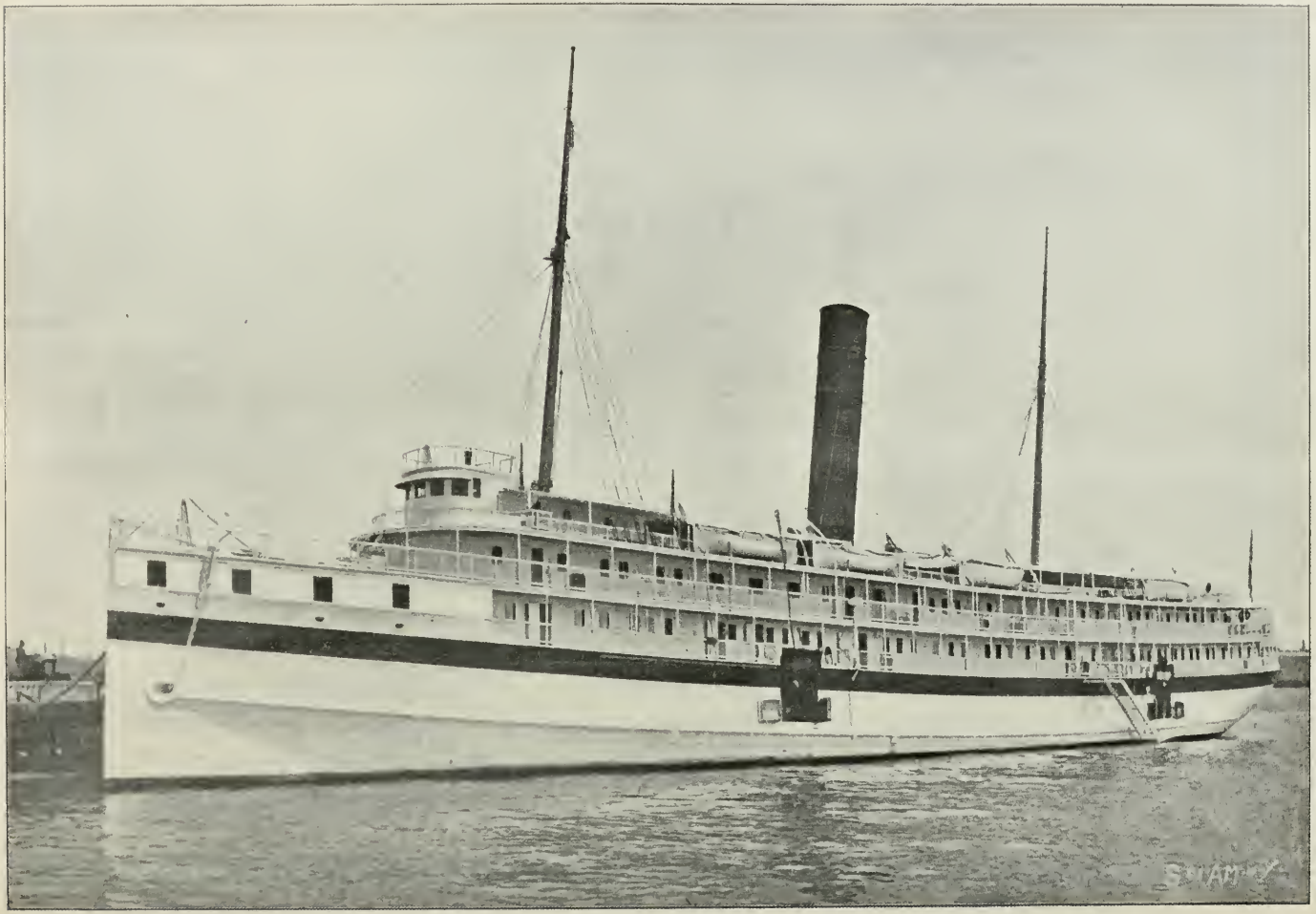
Artificial Albumin.—It is reported that a Dr. Lilienfeld, of Vienna, has discovered a process for making albumin artificially out of certain coal-tar waste products. He claims that it has all the properties of peptone, and that by means of it one can obtain albumin in sufficient quantity to support life at an expenditure of about eight cents a day. It occurs in the form of a brown powder and has a taste resembling egg albumen.

Obituary Notes.—Dr. Richard M. Swearingen, of Austin, Tex., died suddenly on Sunday, August 7th. He was born nearly sixty years ago, and obtained his medical degree from the New Orleans School of Medicine in 1867 and from the Louisville Medical College in 1886. Dr. Swearingen was State health officer of Texas for twelve years, and rendered most efficient service on several occasions, notably during the yellow-fever outbreak on the Gulf coast in the autumn of 1897. At this time he sustained Dr. Guitéras in his diagnosis of yellow fever in Galveston and other places, and for this was most severely criticised by many of the medical profession as well as of the business community in the infected places. He was a member of a number of medical organizations, and had served a term as president of the Texas State Medical Society.—Dr. John H. Pickett, of Elizabeth, N. J., died on August 9th, after a long illness. He was born in New York about seventy years ago, and was a graduate in medicine of the University of Buffalo, medical department, in 1860. He served as surgeon in the civil war, receiving a medal for important services at Gettysburg, and at the close of the war settled in Elizabeth, where he had for many years an extensive practice. He leaves a widow.—Dr. Thomas J. Doughty, of Fishkill, N. Y., died at the residence of his father, Dr. John H. Doughty, in Matteawan, on August 2d. He was born at Poughquag, Dutchess County, in 1865, and was graduated in medicine from the University of Michigan in the class of 1896. He had practised in Fishkill since his graduation, and was health officer for the town of Fishkill and the village of Matteawan.—Dr. Carl E. Elsner, of New York, died at his home, on August 8th, after a lingering illness. He was born in Germany, and received his medical degree from the University of Halle in 1874. He came to this country about twenty years ago.—Dr. Warren Kemble, of Saugerties, N. Y., one of the most prominent physicians of Ulster County, died on August 10th, at the age of fifty-seven years. He was a graduate of the College of Physicians and Surgeons, New York, in the class of 1868.

Dr. A. Monae Lesser, of the Red Cross, who was sent North on the *Concho*, and, though ill, was forced to take care of the sick and wounded because there was no other surgeon on board, has been seriously ill since his return. We are glad to learn, however, that he is now rapidly convalescing.

The Camp at Montauk Point.—A new camp has been established at Montauk Point to receive the fever-stricken troops from Santiago, some of whom have already arrived, while others are on the way. Some difficulty has been experienced in getting water, because of the presence of large boulders that interfere with digging or drilling, but otherwise the site is admirably adapted for its purpose. The general hospital for the camp is said to be one of the most complete of its kind ever constructed. There is one central covered passageway, and at the sea end of this are the quarters of the surgeons attached to the hospital and the division surgeons. Near by is the operating-tent and the tent for the storage of hospital supplies. From the covered passageway range sixteen rows of tents, containing five hundred cots. Other rows can be added should necessity arise. At the farthest part of the hospital camp are the kitchen and wash tents. Colonel Forwood is the surgeon in charge. Near the outskirts of the camp will be five detention hospitals, with two hundred and fifty beds. These will be used for detaining men who are brought in sick. As soon as the surgeons in charge are satisfied that the nature of the illness is not such as to make quarantine necessary, the men will be transferred to other quarters. In addition to the general hospital, each regiment will have its own hospital, which will be in charge of the regimental surgeon.

Transports under the Care of the Marine Hospital Service.—The secretary of war has issued an order placing all sanitary matters pertaining to the condition of transports and crews under the jurisdiction of medical officers of the United States Marine Hospital service. Every vessel engaged in the transport service between the United States and Cuban or Porto Rican ports is to carry a medical officer of the army or of the Marine Hospital service, whose duty shall be



that of sanitary inspector of the vessel, and who shall see that in a foreign port no material or person is taken aboard liable to convey yellow fever; he will also keep the crews of the transports under surveillance, and on the return voyage act as sanitary inspector. In his instructions to the sanitary inspectors, Surgeon-General Wyman says that if a transport brings back sick or wounded soldiers, the latter are under the care of the medical officer of the army detailed for this purpose. For their treatment, medical supplies, etc., the medical department of the United States army is responsible. If, however, an inspector is called on by the proper authority for assistance to the sick or wounded soldiers, he is authorized to render it. In absence of a medical officer of the army, he will render such assistance as may be possible. The inspectors are especially instructed to look carefully after the water supply on the transport. In order to obviate the necessity of a vexatious quarantine of transports containing sick or wounded soldiers, it has been determined to station a receiving-ship at all the principal ports in Cuba and Porto Rico for the reception of those intending to sail for this country. This ship will be practically a detention camp and quarantine station, and passengers seeking homeward voyage are to be taken from the receiving-ship after they have undergone a period of observation and after their baggage has been thoroughly disinfected. The troops sent north from Santiago are to be held under observation for from three to five days in a separate camp not infected with yellow fever. They must be bathed and their clothing and luggage are to be disinfected before they are permitted to embark.

The Health of the Navy.—In reply to an inquiry from the secretary of the navy, Admiral Sampson, on August 6th, telegraphed the following report of the health of the men in his fleet: "Marine battalion is in excellent health. Sick list numbers two and one-half per cent. Fleet surgeon reports that they are in better condition for service in this climate than they were when they first arrived South in June. Health of the squadron at Guantanamo fairly good. Sick list numbers about three per cent. General tone of health of the ships' companies has fallen considerably since the 1st of July. This, however, is not due to the prevalence of any disease, but is probably due to the release from the strain and constant effort under which they so long lived, and to this, probably more than to any other cause, is due their somewhat impaired physique. I do not think it necessary to send the marine battalion North. The crews have borne their privations in a manner beyond praise; those of three ships have not been ashore for seven months, and these months in a debilitating climate."

A Home for Convalescent Soldiers.—The park board of this city has offered the use of the West End Hotel, in Fort Washington Park, near Washington Heights, for convalescent soldiers. Fort Washington Park contains forty-one acres. The West End Hotel, which is offered for the use of the convalescent soldiers, faces the Hudson. It is a large brick hotel, surrounded with spacious piazzas, and is admirably adapted for the purpose suggested. A number of citizens in the neighborhood of the park have offered to furnish the hotel for the accommodation of the soldiers.

Gifts of Drinkables.—A well-known French wine house has presented to the medical department of the army twelve hundred bottles of extra dry champagne, and a German firm has made a donation of ten thousand bottles of a table water.

THE HOSPITAL SHIPS.

The accompanying excellent illustrations, depicting respectively a ward on the army hospital ship *Relief* and the operating-room on the naval hospital ship *Solace*, we are enabled to present to our readers through the courtesy of the proprietors of the *Scientific American*. In recent numbers of the Medical Record descriptive sketches have been given of these vessels, but it may be as well to recapitulate their more salient features.

The naval ship *Solace*, formerly the coasting steamship *Creole*, was the first to be fitted out and put in commission for hospital and ambulance purposes; closely followed, however, by the *Relief*. The *Solace* is 375 feet long, of 3,800 tons displacement, with a speed of about sixteen knots an hour. She has ample capacity for carrying a very large quantity of ship's stores, pantry supplies, medical, surgical, and hospital necessaries, and has a large sterilizing-plant. On the main deck are blowers for promoting artificial ventilation, quarters for the crew, hoisting engines, etc., and immediately abaft a large ward with berth and cot accommodations for one hundred patients. Well aft is the emergency ward, with fifty swinging cots. Great care has been exercised to insure to the patients plenty of room, so that they may have the benefit of pure air. Between the berth decks are the laundry, drying, cold storage, and engine-rooms, the artificial ice plant, and quarters and messroom for apothecaries, petty officers, nurses, etc. Forward is the operating-room, tiled with interlocking rubber discs, with ceilings and bulkheads enamelled white. The operating-tables are of steel, also white enamelled. The illustration shows two operating-tables, a steam sterilizer immediately to the rear thereof, and the array of trays and shelves and cases for instruments and appliances on the right. Two steam launches, fitted with platforms for the accommodation of the ill or wounded, form a part of the ship's complement, together with a specially devised apparatus for hoisting or lowering the sick or wounded.

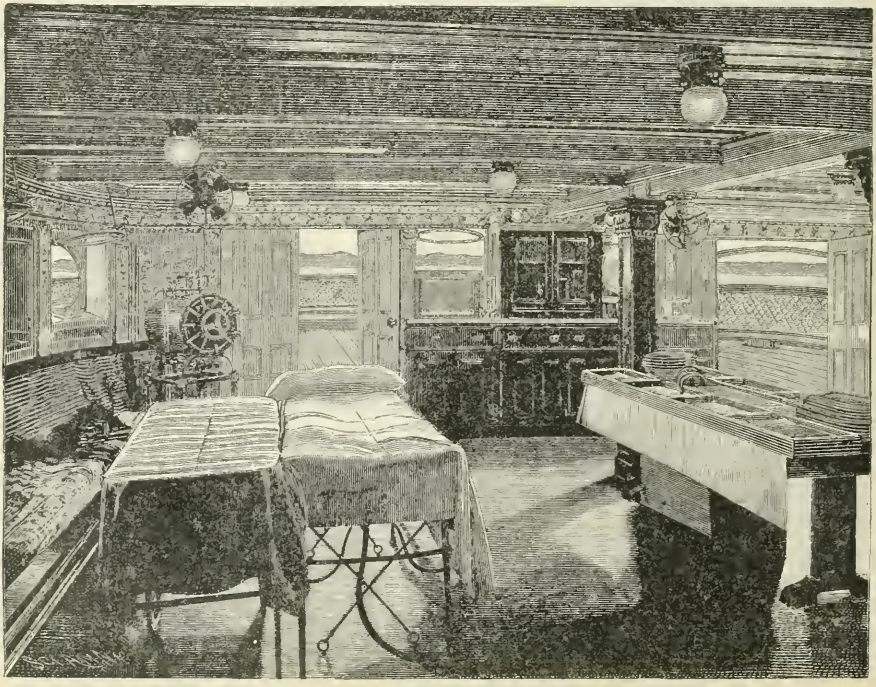
The *Relief* is somewhat shorter and slower than the *Solace*, and is of 3,500 tons displacement. She is divided into five wards for the accommodation of patients, the two largest of which are on the main and berth decks. Our illustration exhibits the one on the main deck. Each of these wards will accommodate about one hundred sick men. The general details of the *Solace* and *Relief* are practically identical, although probably the *Relief* is rather the better-equipped vessel of the two. Both ships are furnished with complete *x*-ray outfits, electric fans, refrigerating-plant, microscopic laboratory, photographic appliances, ice-making machine, and distilling-plant.

The medical staff of the *Solace* includes four naval surgeons, three naval apothecaries, and thirteen male nurses and attendants. On the *Relief* are eight army surgeons and hospital stewards, and sixteen nurses and attendants. The accommodation for patients on board the *Relief* is much more extensive than on the *Solace*.

MAIN DECK FORWARD WARD OF "RELIEF."

It is estimated that if necessary she could provide cots for nearly five hundred patients.

The United States have every reason to be proud of the *Solace* and *Relief*, and the only pity is that they had not more of the kind. The results of the Cuban expedition have clearly demonstrated the absolute need of properly equipped ambulance ships, so as to insure efficient medical treatment for the sick and wounded while on board, and a speedy and comfortable transit to their native land.



OPERATING-ROOM ON THE NAVAL HOSPITAL SHIP "SOLACE."

Society Reports.

THE BRITISH MEDICAL ASSOCIATION.

Sixty-Sixth Annual Meeting, Held in Edinburgh, July 26, 27, 28, and 29, 1898.

(Special Report to the MEDICAL RECORD.)

GENERAL SESSIONS.

FOR the third time since its foundation, the British Medical Association met in Edinburgh, on July 26, 1898, in magnificent weather, in the ancient and beautiful capital of Scotland. Those members who arrived on Monday found the reception room open for their accommodation at the Odd Fellows' Hall, conveniently near to the Royal Infirmary and the new university buildings, in which most of the meetings take place. Between six and seven hundred members took out their tickets here during the day, and obtained information as to the many arrangements for the meetings, the entertainments, the excursions, and so forth. They then had time to visit the museums or other attractions of this city. A stroll through the Pathological Museum afforded an excellent preliminary to the other work in store. This fine collection was displayed in the dissecting-room of the university, and the exhibits were grouped under six headings. The committee very successfully aimed to illustrate the subjects which at present bulk largely in the minds of the profession, with special reference to such as form the basis of discussions and papers in the several sections of the present meeting. Altogether some two thousand specimens are exhibited. In the education section a series of casts and dissections from the surgical laboratory of the university, by Mr. H. J. Styles, aptly illustrate Professor Chiene's method of cerebral localization for operative purposes, and alongside these specimens there are numerous illustrative stereoscopic photographs. In this section also are specimens of the abdominal organs hardened by formalin, also the work of Mr. H. J. Styles; and a number of gelatin casts by the same gentleman and Mr. David Wallace, illustrative of surgical anatomy. Then there are specimens of Mr. Cathcart's method of making casts in glycerin, gelatin, and papier maché. Dr. Shennan shows specimens of Jore's formalin method of mounting, in which the natural colors are retained. Mr. James Simpson has some ingeniously mounted specimens for museum purposes, with the history of each case and its microscopic structure. Close by is a stand for showing the human skull in a natural position, the bones of Sir Walter Scott's "Black Dwarf," and the skin of a tattooed man. Then there are some very fine blotting-paper models by Mitchell Caird. Dr. Peters shows some remarkably delicate plaster casts. He sprays melted paraffin wax with a powerful blast on to the subject, alive or dead, and then backs it with gypsum. The results are remarkably fine, and the method is said to be easier than that usually employed. There is a dissected dead rabbit with all the viscera displayed, and the head of Dr. Harvey Littlejohn, who is happily still alive and can therefore examine this fine counterpart of himself. The parts are not flattened by the weight of the plaster, and the process is certain to be widely used.

In the surgical division there are forty specimens of elbow-joints operated upon by Professor Annandale, and twenty-four specimens of knee-joints, and about as many of intestinal surgery. Close by Mr. Alexander Miles exhibits interesting specimens of the skull and brain, showing the effects of severe injuries. The bacteriological series is very full and instructive, and is largely indebted to Drs. Robert Muir and Shennan. Dr. Sims Woodhead has sent a number of small animals—white mice, guinea-pigs, etc.—illustrating the effects of inoculating tuberculosis.

In the medical series Dr. Byrom Bramwell shows the original water-colored drawings and photographs which were done for his splendid atlas, and Dr. Allan Jamieson a number of drawings of rare skin diseases. There are many specimens of cerebral tumors exhibited by Drs. Bruce, Murray, and George Richardson. Another attractive exhibit is a fine series of eyes, mounted in gelatin jelly, by Drs. M'Gillivray, Paterson, McKay, and Buchanan. A collection of more than thirty skulls, showing the variations in the frontal sinuses, is by Dr. Logan Turner. Round the room are about one hundred and fifty microscopes with slides illustrating modern pathology.

The committee has also found room for the exhibition of some curiosities, such as the dissecting-case which John Goodsir used at his lectures and demonstrations; John Hunter's writing-desk and the boiler in which he boiled the body of O'Brien, the Irish giant; a post-mortem table from the old Royal Infirmary; John Knox's dissecting-table and surgical instruments, which once belonged to Liston, Miller, and Spence.

First Day—Tuesday, July 26th.

In the morning a preliminary service of greeting was held in the historic Cathedral of St. Giles, where the leading men of the several denominations met to welcome the association. The Very Rev. J. Cameron Lees, D.D., LL.D., dean of the Order of the Thistle and of the Chapel Royal, and chaplain to her Majesty the Queen, was to have opened the proceedings, but was unfortunately prevented by indisposition from attending; but his place was ably filled by the REV. WELLWOOD LANE, one of the assistant clergy of the cathedral.

The RIGHT REV. WILLIAM BLAIR, D.D., moderator of the United Presbyterian Church of Scotland, read the lesson of the day, 1 Cor. xiii.; and an address on Sir Thomas Browne was delivered by the RIGHT REV. ALEXANDER WHYTE, D.D., moderator of the Free Church of Scotland, who pronounced an eloquent eulogium upon the author of "Religio Medici," the extraordinary depth of whose language and the richness and imaginative sweep of whose mind, no less than his rare wisdom and wealth of heart, and his quite wonderful English style—all combined to seal Sir Thomas Browne with his well-earned reputation. Having glanced at the life of his subject as it appeared to himself and others, the right reverend moderator proceeded to consider Sir Thomas as an author, and said that his other works acquired their value and took their rank just according to the degree of their affinity to the "Religio Medici." Properly to understand this wonderful book, it must be opened and studied honestly and devoutly, especially if any gain and enjoyment were to be derived from its perusal. "I am a medical man," said Sir Thomas Browne, in introducing himself to us, "and this is my religion. I am a physician, and this is my faith, and my morals, and my whole true and proper life. The scandal of my profession, the natural course of my studies, and the indifference of my behavior and discourse in matters of religion might persuade the world that I had no religion at all. And yet, in despite of all that, I dare, without usurpation, assume the honorable style of a Christian."

The speaker then went on to say that the author of "Religio Medici" was never angry with any one, even his enemy, and, while preferring the Church of England, never unchurched or ostracized any man, and had no genius for religious disputes. On the subject of

admirers, Dr. Whyte said that Samuel Johnson, Coleridge, Thomas Carlyle, Hazlitt, and Lytton were among them; also Pater, Leslie Stephen, and Saintsbury, than whom no one had written more appreciatively of Sir Thomas Browne, who had also many editors and annotators, among others Sir Kenelm Digby, Simon Wickin, Dr. Greenhill, and Dr. Lloyd Roberts. In conclusion, he alluded to Browne's imagination and faith, and his nobility and purity of mind. Up through "all the weeds and tares of his brain," as Sir Thomas himself calls them, his imagination and his faith shot and sprang and spread, till they covered with their finest fruits the whole mind and heart and life. Sir Thomas Browne was a noble illustration of Bacon's noble law; for he carried all his studies, experiments, and operations to such a depth in his own mind and heart and imagination, that he was able to testify to all his fellow-physicians that he who studies men and medicine deeply enough will meet with as many intellectual and scientific and religious adventures every day as any traveller will meet with in Africa itself. Browne never wrote a single line, even in the greenest studies, that on his deathbed he desired to blot out. A purer, more humble, more devout hand never put English pen to paper than was the hand of Sir Thomas Browne. And if even in his greener days he had a doubt about any truth of natural or revealed religion, he tells us that he had fought down every such thought in his closet and on his knees.

The fine old church, which contains some beautiful stained glass and many famous old regimental colors, was filled throughout by a large and attentive audience, including a number of ladies; the congregation appeared to appreciate and in many cases heartily participate in the simple service, which concluded with the apostolic benediction.

The first general meeting was held at the McEwan Hall in the afternoon, and was well attended, a remarkable feature of the meeting being that many of those composing it were ladies, who seemed to take a lively interest in the proceedings. The lord provost, magistrates, and town councillors, in their robes of office, added a novel feature to the proceedings, the lord provost occupying a seat on the right of the president's chair.

After the adoption of the minutes, the retiring president, Dr. Roddick, of Montreal, said that it was his pleasing duty to relinquish his position in favor of Sir Thomas Grainger Stewart, who needed no other introduction from him (Dr. Roddick) to those present than the mention of his honored name. His reputation was world wide, both as a skilful physician and as an able and attractive teacher. In Canada the name of Sir Thomas Grainger Stewart was a household word, he having had to do more or less directly with the training of the more eminent physicians and doctors in the dominion than perhaps any other teacher living.

He congratulated the association on meeting on this occasion in the beautiful city of Edinburgh, the Modern Athens, and he also congratulated himself on the opportunity that had been afforded of handing over his office to so distinguished a successor. [Applause.]

Sir Thomas Grainger Stewart, having taken the chair amid renewed applause, called upon the lord provost to bid the association welcome.

The Lord Provost, who was attired in his gorgeous robes of office, was very cordially received, and said that on behalf of the municipality and the inhabitants of Edinburgh he had great pleasure in offering a most cordial welcome to the British Medical Association, embracing as it did representatives of the medical profession from all parts of the United Kingdom and the colonies, to the capital of Scotland. He was sure that no one would for a moment think that he said this in a boastful spirit, but the association could not have selected a more suitable place for its deliberations, for, apart from its beauty and its many historical associations, Edinburgh possessed one of the most important medical schools in the world. It might interest the association to know that the town council had a large share in the patronage of the university chairs, and when he told them that at one time when it was sole patron it elected such men as Christison, Allison, Playfair, Simpson, Bennet, and Haycock, he was sure the members would agree that it exercised its privileges with discretion and wisdom.

The medical school of Edinburgh still held a prominent position, and that to a large extent was due to the men in whose hands was the present teaching of the students. It was a thankless task to single out names, but he was sure that his brethren in the profession would understand him (the lord provost) and join with him in saying that the inhabitants of Scotland received with the liveliest satisfaction the news that the General Medical Council had conferred the blue ribbon of the profession upon their townsman, Sir William Turner. His lordship then referred to the fact that recently the freedom of the city had been conferred upon Lord Lister, and went on to say that the selection of a president of the association, so well known and so highly respected as Sir Thomas Grainger Stewart, was most gratifying. He hoped that under Sir Thomas' presidency its meetings would tend to the advancement of medical science, and that the interchange of thought and opinions among the members would have a soothing and healing effect on human suffering. The medical was a noble profession, and their reward was the satisfaction of knowing that their lives and work were given for the alleviation of the miseries of mankind. He concluded by once more offering them a cordial welcome to the city of Edinburgh. [Applause.]

The lord provost and council then withdrew. On the motion of the chairman; the thanks of the meeting were given to Dr. Roddick, the first colonial president, who was elected a vice-president of the association for life.

Honorary Members.—The president of the council, Dr. Saundby, then said that the success of the meeting of the association in Montreal was largely due to the governor-general (the Earl of Aberdeen) and the high commissioner for Canada (Lord Strathcona and Mount Royal), and to show its gratitude the council recommended that both gentlemen should be elected honorary members. The council also recommended the election of Prof. Francesco Durante, the eminent Italian surgeon, as an honorary member; and all three were duly elected accordingly amid much cheering.

Annual Report.—This was on the whole satisfactory, mention being made that this was the association's third visit to Edinburgh, the high position the city occupied in the medical world fully entitling it to the honor. The revenue of the year had been £40,443, while the expenditure had been £36,973, leaving a surplus of £3,470. During the year premises had been purchased at the corner of Agar Street and the Strand for £79,000, and the council now congratulated the association upon possessing a home worthy of its importance. In regard to the question of medical defence the council had taken an attitude of *non possumus*. It proposed to institute a scholarship in memory of the late editor, to be known as the Ernest Hart scholarship.

Medical Defence.—When the report was concluded much discussion, more or less heated, took place upon the question of medical defence, and several amendments were moved to that part of the report. Dr. James Myrtle (Harrogate) moved that the question of undertaking medical defence by the British Medical Association having been decided by a majority at for-

mer annual meetings, the council undertake to reconsider the report, with a view of bringing the question to a satisfactory issue. He contended that the council was wrong in counting as opposed to the proposal all those who had not returned post cards. He could equally well claim that their indifference showed they were in favor of it. [Laughter and applause.]

Dr. Jackson (Plymouth) said he could not understand why the council should say the majority were against the proposal, merely because the half of the members did not take the trouble to vote.

Mr. Victor Horsley said the question concerned the members of the United Kingdom alone, and the fact that sixty per cent. of these members voted in favor of the proposal was a sufficiently strong argument in favor of the council taking up the defence. He went further, and said that when they got that sixty per cent. to vote they got as many votes as they could expect. The profession had yet to be aroused upon that and other points. If the council had decided that it was unwise for the association to take up the question of defence, it should propose an alternative, such as subsidizing those who undertook the work.

Dr. John Haddon (Hawick) said the association was brought into existence for the advancement of medical science, and should have nothing to do with such a scheme as general medical defence.

Dr. Ward Cousins said there were great difficulties in the way of carrying out such a scheme as that proposed. He believed there was a large number of members in favor of it, but there was a still greater number who were opposed to it.

Dr. Woodcock said there were members of the council who thought that medical defence by the association was a desirable thing, if it could be done with safety, but in the face of the strong opposition they could not carry it out. Important branches, like that of Dublin, were strongly against it, and if it were carried they would have to face a revolt of that branch, and probably a secession. If it were attempted to go on with the scheme at the present time, the results in all probability would be most disastrous to the association.

Dr. Garret Horder said he was strongly of opinion that the majority of the members in general meeting assembled had given such an expression of opinion in favor of the proposal that the council should be encouraged and not discouraged in going on with the scheme.

Dr. Brassey Brierley also supported the amendment.

Mr. Muir (Glasgow) said that at a small meeting—thirty out of three hundred members—in the west of Scotland, there was a small majority against the proposal; but he wished to point out that the majority were consulting practitioners, to whom the question was of little or no importance. The minority were general practitioners, to whom it was simply vital.

Dr. Saundby, in replying on the discussion, said it was not because they did not think medical defence a good thing that they did not take it up, but because of the practical difficulties in the way. The council at a very large meeting unanimously approved of the report, and, no matter how the meeting voted, the council could hardly change its mind now. The remedy of the association, if they felt aggrieved, was to turn the present members out. [Cries of "Oh!"]

On a show of hands the amendment was defeated by one hundred and one votes to eighty-nine.

Loud cries of "Divide, divide!" were passed unheeded.

Reports of various committees were then formally submitted. On the report of the parliamentary-bills committee Dr. Brassey Brierley complained that the committee had not done anything with regard to the amending of the medical acts.

Dr. Saundby said they were sorry that the bill for the amendment of these acts was presented so late that it only came before the committee on July 5th, and the committee felt they could not do justice to so complicated a matter in the short time at their disposal.

Dr. Brierley expressed himself as satisfied with this explanation.

The meeting adjourned about five o'clock to meet again at half-past eight to listen to

The President's Inaugural Address.—There was a brilliant gathering at the adjourned general meeting in the evening to listen to the address. The magnificent hall was not crowded, but the area of the hall and the lower gallery were occupied by ladies and gentlemen in evening costume, while the upper gallery was allotted to students and others who were not members of the association, or were unable to appear in suitable attire. The organist to the university beguiled the time of waiting by a selection of music that was greatly appreciated. As the president made his progress up the hall he was loudly cheered, and among those who occupied seats on the platform were Dr. Roddick, who took the vice-chair; Dr. Saundby, chairman of the council of the association; Dr. Osler, of Baltimore; Dr. Farquharson, M.P.; Sir William Stokes, Sir Henry Littlejohn, Sir Robert Pullar, Dr. Bruce Goff, and others. The president proceeded at once to deliver his address (see page 203).

Professor Roddick, of Montreal, in moving a vote of thanks to the president for his very able and interesting address, said that it was just what was wanted, but that when he touched upon vaccination it was a sore point with them in Canada, where it and smallpox gave them more trouble than anything else. Some medical men, who, he was sorry to say, were French Canadians, had for several years carried on a crusade against vaccination and persuaded many of their countrymen from accepting the immunity it afforded against a most loathsome disease; but an epidemic broke out and many deaths followed—three or four thousand—and since then there had been no trouble about vaccination. He also thought it time that a great country like this should have a minister of public health, and if England did not hurry up in that respect Canada would soon be ahead of her.

Dr. Pavy, of London, seconded the vote of thanks in a neat little speech, and thought it was a great pity that there was not sufficient firmness of mind among Englishmen not to yield to the unbalanced minds of faddists. The freedom of the individual must yield for the benefit of the number.

The motion was put by Dr. Saundby and was carried by acclamation. The president bowed his acknowledgments.

The Royal Army Medical Corps.—A vote of thanks to Dr. Gordon for his work on the subcommittee on army medical reform was then moved by Mr. Macnamara, seconded by Dr. Farquharson, M.P., and cordially adopted. The speakers expressed satisfaction with the new warrant, and said the army service would henceforth afford an excellent career for earnest young surgeons.

The Lord Provost's Reception.—By this time every one was anxious to get away to the reception by the lord provost and Mrs. Mitchell Thomson, which was fixed for nine o'clock, but the guests began to assemble much earlier—some, it was said, arrived before eight—and there was a continuous stream of cabs and carriages toward the museum from that time until ten. Those who had attended the president's address walked to the door which was opened for their accommodation, but it was hardly wide enough at first, and for

a time there was a crush worthy of a royal drawing-room day. The museum is a kind of smaller South Kensington, and there was a great crowd. More than four thousand ladies and gentlemen were said to have attended. The lord provost, in his official robes, and Mrs. Thomson were attended by the sword and mace, the chief city officers, who announced the guests. The museum presented a brilliant spectacle, especially as seen from the galleries, where many took up a position to witness the ceremony of the official reception. After all had been announced, music was played by the band of the Royal Scots (late First Foot), familiarly known in the army as Pontius Pilate's body guard, on account of its antiquity. When the eleven pipers in full blast marched round the upper gallery, in which space had been reserved for them, an unappreciative Englishman whispered to your reporter that the Dumdum bullet is not the only "inhumane" implement (to quote Bruns) used against the gentle Afridi, and he quite understood the feelings which made them concentrate their fire on the pipers. Light refreshments were served at several tables. Outside the traffic was well regulated as the assembly broke up, and departing vehicles were heard until after midnight.

Second Day—Wednesday, July 27th.

There was a large attendance of members in McEwan Hall; the chair was occupied by Sir Thomas Grainger Stewart, the president of the association.

The Next Meeting.—Dr. Saundby intimated that at a meeting of the council, held that morning, it had been agreed to recommend that the invitation to hold the annual meeting of the association next year at Portsmouth should be accepted with thanks, and that Dr. Ward Cousins, of that town, should be appointed president-elect.

He moved the recommendation, and said there would be something appropriate in going from Edinburgh to the extreme south of England, which they had not visited for a number of years. Dr. Ward Cousins had been a very active member of the association, and it could not have a president who had done more to earn his position than he had.

The resolution was adopted, and Dr. Ward Cousins was congratulated by the president on his appointment.

Dr. Ward Cousins thanked the association for having accepted the invitation to Portsmouth. That town was, as they knew, a great naval and military centre, and he did not need to remind them that naval and military medical officers were warm friends of the association. [Applause.]

The Address in Medicine.—Dr. Thomas Richard Fraser, professor of materia medica and clinical medicine, University of Edinburgh, then delivered the annual address in medicine (see page 205).

Sir William Broadbent moved a vote of thanks to Professor Fraser for his able address; Prof. William Osler, of Baltimore, seconded. He said that Scotland had that combination of theory and practice which was needed in the medical profession. He felt that in some countries there was gradually arising a dissociation between theory and practice. The physiology that was taught in many eminent schools and the pharmacology taught in others often had not the direct and specific object of enabling the young men ultimately to cure disease. In Edinburgh they had a great advantage in having a man who was not only a laboratory worker, but also held a hospital position. Too many of them were too optimistic with regard to disease. There were plenty of diseases they would never cure, and it was lucky for the race they could never cure. Sir Thomas Browne, to whom they might go for occasional lessons in medicine as well as in morals, had pointed that out years ago.

The vote of thanks was carried by acclamation.

Some questions relating to proposed changes in the bylaws and the expenditure were then considered, and the proceedings terminated.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

First Day—Wednesday, July 27th.

The Teaching of Obstetrics.—Dr. A. R. Simpson, professor of midwifery and diseases of women and children at the University of Edinburgh, delivered the presidential address. He said that he was the occupant of the oldest chair of midwifery in the world, instituted by the town council of Edinburgh in 1726. The council resolved that the new professor should be "vested with the same privileges and immunities that are known to appertain to a professor of midwifery in any other well-regulated city or place:" but when one came to search for the privileged professor he was nowhere to be found. The chair of midwifery next in seniority was that of Strassburg, which was instituted two years later, in 1728. In that same year, Victor Amadeus II. of Piedmont started in Turin the first school for teaching midwifery, by setting apart a ward in the San Giovanni Hospital for Lying-in Women, where midwives should have practical instruction. This circumstance, that the first Italian obstetric clinic was provided for the teaching not of men but of women, suggested the reason why medicine and surgery had precedence of midwifery in the development of facilities for study in the respective departments. Through long ages the care of the lying-in woman had been consigned to members of her own sex, and the question of the propriety of allowing men to attend women in labor emerged in the seventeenth century only to give rise to bitter controversies, lasting until far on into the eighteenth. Even yet inadequate provision was made in medical curricula for the disciplining of students in this part of the healing art, although from the point of view of the legislator it took equal rank in importance with the other two great departments of medicine and surgery. If we had regard to the activities of the obstetrician as manifested in various relations, we would see that in none of them did he come behind the physician or the surgeon. If we looked to the journals that were open to the discussion of subjects in all branches of the profession, we could not fail to be impressed with the large space occupied by the papers on obstetrics and gynæcology. The speaker had occasion some years ago to look through a chance volume of the *Edinburgh Medical Journal*, and to note that the obstetric material amounted to more than a third of the whole—of the 630 pages occupied with original articles 233 being devoted to articles in this department. If we took the great "Sammlung klinischer Vorträge," we would find that important serial setting gynæcology on an equal plane with medicine and surgery. Perhaps this tendency to predominance of the gynæcological series might be due as much to the interest of the readers as to the productivity of the writers of the gynæcological literature.

This tendency to large development and diffusion of obstetric essays was not due to any special peculiarity in obstetric problems. The secret was to be found in the circumstance that a preponderating share of the best time and most anxious thought of the general practitioner was taken up with his obstetric cases.

The speaker once requested a country practitioner to look up the number of individual cases he had visited in the preceding month. These were 60 in number, and divided themselves into 11 men, 34 women (of whom 13 were general cases, 6 gynæcological, and

15 obstetric), and 15 children, besides again the 15 infants. Thus in this gentleman's practice fully a third were obstetric and gynæcological cases; and if were added the fifteen infants which he had learned in his midwifery course how to deal with, we would find that nearly one-half of the individuals under his care that month were dependent for their successful treatment on what he had been set in that class to learn. Young practitioners must learn that the successful conduct of confinements was the surest guarantee for speedy success in the career of an ordinary practitioner. Coming into a locality, a young doctor might get a reputation in the community for managing well an outbreak, say, of typhoid fever, or operating well in some case of injury. But his very triumph over the typhoid would be complete only when he had succeeded in preventing the possibility of its recurrence; and people would not be less careful to protect themselves from injuries though they knew they had a skilful surgeon near at hand. But each time it was whispered among the ladies that he was specially skilful in the handling of his confinement cases, the rumor of his skill and kindness must fall on the ear of some one who would say to herself: "My time is coming; I must have him to attend on me." It was the only gate into general practice that was always open everywhere.

The ordinary run of deliveries were cases of natural labor that might not call for active intervention, but at any moment emergencies might arise that would tax to the uttermost the practitioner's resourcefulness and self-reliance. If he had a case of heart or lung or brain disease that left him undecided when he saw it first as to what would be the best line of treatment, he could prescribe something that would be useful, or at least not hurtful, until on a second visit the course became more clear, or until he had had time to read up the subject in a system of medicine. But if a man came to a midwifery case and found an arm protruding, it was too late to think of reading up; if at the end of a labor that had gone on smoothly he found his patient becoming pale and pulseless, he had no time to get assistance. Before help could come the flooding might be fatal. If he was not to see the patient die before his eyes, he must recall the measures he had been taught to adopt in this contingency, and he must apply them with his own hands immediately. But how did this predominance of midwifery in practice look in comparison with the little time devoted to it in college study? The obstetric teacher, among a company of physicians and surgeons, was apt to find his subject regarded as a kind of subordinate specialty, which could be lectured on at any odd time to senior students, whose best hours were all laid out for them in the interests of systematic and clinical medicine and surgery, and their subsidiary branches. Dr. Simpson pleaded for greater recognition of the importance of midwifery study, and he said that every student should be drilled in the use of the various obstetric and gynæcological instruments and appliances; and especially he should be practised in the application of forceps and in the operation of version on the phantom. He ought to attend the clinics in a maternity hospital, since women were sent there because they were the subject of some difficulty or complication, which gave the teacher the opportunity of enforcing on the student the lessons of the didactic course, and showing him how abstract teaching was adapted to concrete cases.

A vote of thanks to the president for his address was proposed by Professor Playfair, and seconded by Professor Martin, of Berlin.

The Surgical Treatment of Pelvic Inflammation.—A discussion on this subject was opened by Dr. Cullingworth, of London. He commenced by stating that five years ago he drew attention to the backwardness of this country in the treatment of these diseases. More active treatment was now generally accepted, but there were some points still open to discussion. These points were: (1) Indications for operation in pelvic inflammation; (2) time to be chosen for operation; (3) methods of operation; (4) the extent of the principles of conservatism. In this paper he would deal with the first two only. The indications for operation were usually stated as (1) inflammation of the connective tissue, and (2) inflammation of the peritoneum.

As to pelvic cellulitis, there was a general agreement that when there was no suppuration no surgical treatment was needed. When there was suppuration the pus should be let out as soon as its presence was diagnosed, but always without opening the peritoneum, and generally by an incision above Poupart's ligament. When the pus was deeper an incision like that for tying the external iliac artery was suitable. A rarer situation for the pus was between the bladder and cervix. Still more rarely it passed through the sciatic notch into the loin, etc. Most cases which had been recorded as suppurating cellulitis in the upper parts of the broad ligament were really abscesses of the tube and ovary.

In pelvic peritonitis operative interference was not called for when the affection was due to simple catarrhal salpingitis, but it was called for when the presence of pus was diagnosed. It was not always easy to say when pus was present. The temperature was of little use as a guide. No absolute rules could be laid down, but the following were some points to guide in deciding on operative treatment: Operation was indicated after subsidence of the acute symptoms, when the bimanual examination showed a mass extending into the pouch of Douglas. In simple cases in which the mass was formed by a thickened tube, it was possible to trace the tube as a thick cord from the uterine cornu, but the outer extremity of the tube could seldom be defined. If, however, such swelling was larger than could be accounted for by the above condition, or if it was increasing, we were almost sure to find pus. If there was a tense globular cystic swelling bulging down into the vagina, there was probably an abscess. Operation was also indicated when there were outbreaks of recurrent pelvic peritonitis. Such attacks suggested the presence of pus, generally shut up in an ovary (abscess) or tube. Operation was demanded also when, with a lump in the pelvis, there were symptoms of general septic infection. In the speaker's own experience, such cases were generally of tubo-ovarian abscess due to the opening by ulceration of a pyosalpinx into an ovarian cyst. Sometimes when pus was not present, the swelling might enlarge and present fluctuation; it was then either a hydrosalpinx or a diseased ovary, and in either case it needed to be removed. Cystic disease of the ovary was so frequent an accompaniment of salpingitis as to suggest that the disease of the tube was a cause. Operation was also indicated, even when there was no sign of pus, in working-women who could not afford time for rest. In such cases the author considered an operation to be perfectly justified after matters had been explained to the patient.

As regarded the time for operation, general opinion was in favor of deferring operation until the acute symptoms of local pelvic peritonitis had subsided, because, in the first place, it was difficult to say whether pus was present or not. Secondly, the mortality was much greater when the patient was operated on while acute symptoms were present. Similar results were found in dealing with appendicitis; the peritoneum was much more tolerant after an attack of acute inflammation—which suggested immunity—and experiments on animals had shown the same thing. It had

been suggested that an injection of antistreptococcus serum into the peritoneal cavity be made on the day before the operation. A practical deduction was that the immunity passed off soon, and one should not postpone the operation too long after an acute attack had subsided.

Abdominal Hysterectomy and its Indication; Modification of the Technique of Vaginal Hysterectomy.—Dr. Doyen, of Paris, read a paper with this title. He said that he had been obliged to remove the uterus by vaginal hysterectomy in cases in which the adnexa had been removed by laparotomy, and now he often performed total ablation. Three operations might be performed per vaginam: (1) simple incision into the pus focus; (2) unilateral ablation of the adnexa; (3) total vaginal castration. In performing laparotomy, simple incision into the pus focus, he used the Trendelenburg position. The uterus should be removed when necessary. The vaginal method and laparotomy were not competing methods—each was suitable for its own class of cases. In his own method of performing vaginal hysterectomy, he crushed the broad ligaments with special forceps and left the forceps on for forty or fifty seconds. He closed the peritoneal cavity entirely.

Vaginal and Abdominal Way.—Dr. Jacobs, of Brussels, read a paper with this title. He used the opening by the vagina for ovarian abscess or pyosalpinx. Many patients were cured, but some relapsed and required further operation. The vaginal way was best for old-standing suppuration with fistulæ. He had used the vaginal way in 434 cases, with 8 deaths; the abdominal way in 95 cases, with 3 deaths. In the first series there were 5 cases of ureteral fistulæ and 2 of intestinal fistulæ. In old-standing cases of suppuration, he found that the pus was not virulent.

Vaginal Cœliotomy.—Dr. Landau, of Berlin, read this paper. He urged the importance in statistics of vaginal cœliotomy of stating for what the operation had been done. Many cases were only examined by the finger; in others the finger opened sacs and let out fluid, the origin of which alway remained a mystery. He gave statistics of his operations for the last three and a half years. In only one case was there perforation of the bladder; this was sutured and healed by first intention. The best results oftentimes ensued when least was done. Vaginal cœliotomy was indicated only when cœliotomy of any kind was indicated. The advantages were (1) that the peritoneum and intestines were not exposed, and (2) that the cicatrix was out of sight. He had known of two cases in which the scar yielded. The disadvantages were that it was impossible to introduce the hand; only two fingers could be used, and only the organs within reach of the finger could be dealt with. He would exclude from this operation all tumors which must not be ruptured in removal, and he would never perform it when ascites coexisted or when there was a suspicion of malignancy. The conditions for which he would perform it were the following: (1) For plastic operations on normal-sized uterus or ovaries; (2) for the removal of myomata up to the size of a child's head; (3) for the removal of ovarian tumors. The size of a tumor, if unilocular, was immaterial. He would never remove a papilloma by this method. Dermoids were not adapted for this method, as the contents were injurious to the peritoneum. Extra-uterine pregnancy was adapted for this method except when it had ruptured and was complicated by inflammation. He did not advocate extirpation of inflamed appendages by it, or its use when there was evidence of inflammation. It did not matter if it should become necessary to open from above to complete the operation, and it was better to do so than to persist on principle.

Dr. Sänger, of Leipsic, said that when it was possible to preserve one ovary or tube, he would do so. Professional opinion was going back to abdominal operation for complete removal in cases of suppuration and was against the use of clamps. He pointed out the frequency of appendicitis complicating inflammation of the appendages. He strongly advocated the Mikulicz method of drainage.

Dr. Fehling, of Halle, said that in doubtful cases he would make a puncture with the Dieulafoy aspirator. He always completed the operation by closing the peritoneum. He thought that when one appendage was affected, the Germans had been too radical in their procedures, but now they were tending the other way. In cases in which diagnosis was doubtful the abdominal way was better, as it gave more opportunity for inspecting the appendages. He protested against the practice of removing the uterus and leaving one ovary.

Dr. Martin, of Berlin, said that, in considering the question of operation, he made a point of inquiring carefully into the history, for if that led one to suppose that the condition was due to gonorrhœa the treatment was different from that required when it was due to sepsis. When it was due to gonorrhœa, he felt bound to adopt expectant treatment; when due to sepsis, it was less liable to be benefited by medical treatment. There was sometimes much difficulty in differentiating inflammatory conditions from extra-uterine pregnancy. In numerous cases in which the gonococci or other cocci were supposed to be the cause of the condition he had found extra-uterine pregnancy. He was doubtful whether it was necessary to remove the product of conception in all these cases when the fœtus was dead. One cause of these inflammatory conditions not commonly recognized was infection by the bacterium coli. This occurred especially in young girls suffering from chronic constipation. Menstruation began, attended by feverish disease, by and by swelling of adnexa; and when finally operation was done, infection with bacterium coli, either through adhesions or through lymphatics, was found. He recognized the necessity of operating early in poor people. In the technique it was very important to preserve the uterus, and if it gave rise to trouble it could be removed later. He did not now use drainage.

Dr. McCann, of London, delayed operation until he found it absolutely necessary. He thought that we ought to adopt the foreign method of making the bimanual examination with the patient on her back, using the right hand for examining the right side of the pelvis and the left hand for the left side.

Dr. Byers, of Belfast, said that there were many cases in which the question of pus could not be settled until the abdomen was opened. He thought that the vaginal method was especially suitable for cases in which women with pus in the pelvis came in an extremely exhausted condition; he quite agreed with previous speakers that operation in cases of acute peritonitis was very dangerous.

Dr. Ward Cousins, of Portsmouth, said that when the tumor impinged on the rectum he opened through the rectum. He had treated large numbers of cases of gonorrhœa in the Lock wards of Portsmouth Hospital, and had not found any which required operation.

Dr. Taylor Young, of Sydney, thought that the dorsal position should be used in conducting an examination.

Dr. Lapthorn Smith, of Montreal, agreed with Dr. Cullingworth as to the immunity conferred by an attack of peritonitis, and cases in which there had been several attacks did better than those in which there had been only one. He had just returned from a visit to the continent, and had seen the practice of many of the celebrated surgeons of Europe. As a result of his observation, he would lay down the rule that all large

tumors, pus tubes large and high up, hydrosalpinx, tubal pregnancy, should be removed by abdominal section. The operation of vaginal cœliotomy was suited to the removal of small tumors, cystic and cirrhotic ovaries, and for the treatment of retroversion with fixation. As regarded the question of removing the uterus, he would remove it if both ovaries and pus tubes were removed. He had given up drainage.

Dr. Amand Routh, of London, said that in cases of parametritis when the presence of pus was suspected, he used the aspirator and then incised and kept the opening from closing by using a diverging stem pessary.

Dr. Aust Lawrence, of Bristol, said he considered persistent diarrhœa a sign of dangerous sepsis.

Dr. Cullingworth, in closing, said he quite agreed with Professor Martin that in cases of gonorrhœa the probabilities were greatly in favor of resolution as compared with cases due to a septic cause. He also agreed as to infection by the bacterium coli, and he thought that the profession was not alive to the importance of keeping the bowels cleansed in these cases. He urged strongly the importance of diagnosis, and of comparing what we diagnosed with what we found at the operation. He always used and taught the method of bimanual examination with the patient on her back. The abscess in cases of acute pelvic suppuration frequently burst into the rectum, but not often into the bladder.

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Second Day—Thursday, July 28th.

The proceedings on this day were marked by a very large attendance and characterized by much animation.

The Use and Abuse of the Midwifery Forceps.—Dr. Milne Murray, of Edinburgh, opened the discussion on this topic. He said that Baudelocque had remarked that the midwifery forceps were the most valuable surgical instrument ever invented, but to justify this praise it must be shown that the forceps diminished suffering and saved the life of both mother and child. The following were the indications which he laid down for the use of the forceps: Generally, when their use was better for both mother and child than non-interference; this aphorism should be more generally adhered to. No strict rules could be laid down, but it must be left to individual judgment. There were certain common errors in the use of the forceps, some due to lack of judgment as to when to use and when not. But this was not all; many injurious results were due to faulty technique. He would sum up in this way: Forceps were often used at the wrong time, sometimes not used at the right time, and frequently badly used. The dangers were: (1) laceration; (2) too sudden emptying of the uterus; (3) injury to the fœtal head. He thought that the greatest abuse of the forceps arose in connection with their application when the os was small. He recognized a special form of undilated os; this occurred when the woman had been in labor for some hours; examination in the absence of a pain showed that the os was soft and apparently dilatable, and that the head was low down; if the forceps were applied and the woman was then examined during a pain, the os was found to be tight and only half open. This condition the speaker denominated "spasmodic undilated os." On account of the thinness of the edge in such cases the cervix was easily lacerated. In the cases in which forceps were not used when they ought to be, vesico-vaginal fistula resulted, but this was now rare. He thought that a reaction was now showing itself against the frequent use of the forceps, and he feared that our vigilance in seizing the right time for their use might be relaxed. In the last report of the Rotunda Hospital it was stated that in forty-five cases forceps were used in the second stage after four hours' delay; he objected to this as giving the impression that time was the main factor in deciding on the use of the forceps. He would enunciate the following aphorism: "Wait till you see what nature can effect, not what she can endure."

In occipito-posterior positions when flexion was deficient, he thought that the sooner forceps were applied after the os was dilated the better; he had no faith in manual rotation. Forceps were abused by being badly used, through faults of technique, in not employing the most efficient instrument. The principle of axis traction, first introduced by Tarnier, was now always taught in the Edinburgh school, and the speaker thought that axis-traction forceps were superior at all stages of labor; they did not compress the head as much as ordinary forceps. He never removed the forceps before completing labor, and believed that under deep anæsthesia the use of axis-traction forceps saved the perineum. It was still the teaching of British schools that the forceps should be applied at the sides of the pelvis, but he held that they should be applied to the biparietal diameter, however the head might be placed. In the final stage of extraction he held the forceps with his right hand, pressing with his left hand on the uterus, and exerted traction as far as possible only during the pains; but he made an exception in certain cases in which each pain was accompanied by spasm of the vulvar orifice; in these he extracted under chloroform in the intervals of the pains.

Dr. Playfair, of London, thought that Dr. Japp Sinclair's address at Montreal had done good, but he did not agree with all that was said on that occasion, and he altogether denied the truth of the statement that the obstetrician furnished most of the material for the work of the surgical gynæcologist. The objection of improper use applied to all innovations in treatment. The case of the Princess Charlotte bore eloquent testimony to the badness of the practice of delay when the head was low down; in her case the fatal result was brought about by allowing the head to remain on the perineum for forty-eight hours, when forceps should have been used long before. A great gain in modern practice was the almost total abolition of craniotomy, and to this Dr. Sinclair did not allude in the address mentioned.

Dr. Smyly, of Dublin, said that in the Rotunda Hospital, while he was master, they always used axis-traction forceps at all stages of labor. He said that before it was allowable to use the forceps the head should be presenting and partially engaged in the brim, the os should be dilated, and the membranes should have been ruptured. When the forceps were applied above the brim we might not be able to deliver in certain cases in which, if we had had patience, nature might have accomplished delivery; the speaker attached very great importance in these cases to the moulding which took place. The explanation of the four hours' limit to which Dr. Milne Murray had referred was that that was the time fixed by the rules within which the student was to send for assistance, in the second stage. The statistics of the Rotunda for the seven years while he was master were 269 forceps deliveries out of 8,000 cases, or 1 in 33.

Dr. Fehling, of Halle, thought that we ought to teach students very carefully when to use the forceps, as the tendency of young obstetricians was always to use them too often. He still used the old form without axis traction. He would lay down as a rule that at least one-half of the head should have entered the brim before forceps might be applied. Dr. Cullingworth had shown that puerperal fever in private practice had not diminished, and Hegar had stated the same thing; the speaker thought that this might be due to our plac-

ing too much reliance upon antiseptics, and so becoming careless about the infliction of injuries and lacerations. He would apply the forceps at the side of the pelvis, and thought that by endeavoring to put them on in other positions lacerations were caused. His statistics showed about one in thirty forceps deliveries.

Sir William Priestley, of London, said that he had no doubt more children were saved and fewer mothers injured now than when he began the teaching of midwifery fifty years ago. Nevertheless he had seen very serious damage caused by the application of the forceps when the head was above the brim and the os was undilated.

Dr. Stephenson, of Aberdeen, laid down the axiom that artificial extraction must never derange the mechanism of nature.

Dr. Macan, of Dublin, taught the use of the ordinary long forceps as axis-traction forceps by applying both hands and pulling in such a way that the line of traction was parallel with the blades.

Dr. Byers, of Belfast, pointed out that cases were met with in which the rule of waiting for dilatation of the os before applying forceps must be broken; such were cases of eclampsia and of labor in aged primiparæ. In cases of flat pelvis he had obtained better results by the application of forceps at the brim than by version. He completed labor without removing the forceps.

Dr. Japp Sinclair, of Manchester, wished to deny emphatically that he had ever advocated a return to the old bad practice of leaving women in the second stage of labor when they ought to be delivered by forceps. The lesions to which he had alluded in his address were most frequently met with in the out-patient room.

Dr. Milne Murray, in closing, maintained that flexion was favored by axis-traction forceps.

One Hundred and Ninety-Eight Cases of Induced Premature Labor.—Dr. John Moir, of Edinburgh, who, the president announced, was in the ninety-fourth year of his age, read a paper with this title. The method which he adopted was the use of a blunt-pointed metal bougie of the thickness of one's finger; he passed this through the os and separated the membranes all round. In most cases labor ensued within a few days; if it did not, he followed this up by puncture of the membranes.

Missed Labor.—Dr. Mary Scharlieb, of London, reported a case of missed labor verified by operation and also post mortem. The woman expected her confinement in July, 1895, but no labor ensued; in September following there were pains and vaginal hemorrhage. On admission to the hospital in that month the patient was very ill, had fever, sordes on the lips, etc.; the abdomen was enlarged, but no fœtal heart sounds or movements were perceptible. Extra-uterine pregnancy was diagnosed. The operation was performed on September 28th. When the woman was under anæsthesia the fœtal parts could be felt through the abdominal walls. The uterus was opened in the middle line, and fetid fluid escaped. A macerated fœtus, weighing twelve pounds, was removed. The uterus, which was friable, was amputated low down. The patient died twenty-eight days after the operation. Careful examination of the uterus and appendages proved conclusively that gestation was intra-uterine.

Aseptic Midwifery.—Dr. Jardine, of Glasgow, read a paper with this title. After stating his opinion that all cases of puerperal sepsis were due to infection from without, with the single exception of those caused by the existence and bursting of a pelvic abscess, he laid stress on the following points in prevention: Careful cleansing of vulva and surrounding skin, done by the accoucheur himself; avoidance of examination under the clothes, as so often done; careful toilet of the vulva, after delivery, by the accoucheur himself. The speaker did not believe in routine douching in normal cases. In the puerperium he advised frequent cleansing of the genitals and sitting up of the woman in bed on the third day in order to facilitate escape of the discharges. The catheter should always be passed by sight and not by touch.

(To be Continued.)

AMERICAN ORTHOPEDIC ASSOCIATION.

Twelfth Annual Meeting, Held in Boston, Mass., May 17, 18, and 19, 1898.

Robert W. Lovett, M.D., of Boston, President.

First Day—Tuesday, May 17th.

President's Address.—Dr. Robert W. Lovett, of Boston, delivered this address. He said that the transactions of this association now constituted modern American orthopædic literature, and that, one after the other, the medical schools were announcing systematic instruction in orthopædic surgery. While it was natural that the first efforts of the association should have been toward the better management of the more common deformities, it was time now that the members gave more of their time to studying the pathological side of their specialty. No important additions had been made for many years to the pathology of hip disease, and next to nothing was known concerning this phase of acetabular disease. In his opinion, the good results that had been secured in the treatment of clubfoot were largely due to a clearer knowledge of its symptomatology and pathology. A more exact working basis, founded on a better pathological knowledge, would both dignify and broaden orthopædic surgery.

Traumatism of the Spine Simulating Pott's Disease.—Dr. T. Halsted Myers, of New York, read a paper with this title, and described a number of cases, chiefly in adults, in which traumatism was followed by the symptoms or deformity of Pott's disease, yet the subsequent history disproved this diagnosis. One case was that of a lad of eighteen years, who developed an abscess in the lumbar region, which opened and discharged bony spicula. After two months a small kyphos was discovered, and a spinal assistant was used to support the vertebral column. After three years a large sequestrum was discharged and the abscess closed. Dr. Myers said that when the vertebræ were fractured without injuring the cord to any extent there would not be much tenderness or local weakness, but gradually the weight of the body increased the kyphosis or lordosis, and the clinical picture came to resemble Pott's disease quite closely. It was not right, however, as was the case with the young man whose history had just been alluded to, that the life insurance companies should refuse such risks on any hard-and-fast rules, for there was much reason to doubt the existence of a tuberculous process. The special object of the paper was to direct attention to the fact that there were certain cases of traumatism of the spine, with a short and uneventful history, in which it seemed justifiable to exclude tuberculosis.

Dr. R. H. Savre, of New York, said that he could not very well agree with the author, that all cases of bone injury which terminated in recovery in a reasonable time were non-tuberculous. It was quite common to find at autopsies evidences of healed tuberculous processes, in cases in which the existence of this disease had not previously been suspected.

Hallux Valgus Extremis.—Dr. A. J. Stelle, of St. Louis, exhibited photographs of a case showing an extreme degree of hallux valgus. The toe was adducted to a right angle with the first metatarsal bone,

and the phalangeal base was displaced so as to articulate with the outer side of the metatarsal bone. The metatarso-phalangeal articulation was exposed by a longitudinal incision over the inner and upper aspect, and the base of the proximal phalanx was divided with forceps and removed. After the division of the extensor tendon the toe was readily brought into line, and was then maintained in proper position by the application of a plaster-of-Paris dressing. Dr. Steele said it was usually advised that the head of the metatarsal bone should be removed, but he had purposely avoided doing this in the present instance, since it was one of the points of the tripod upon which the foot rested, and he could not but think that its removal must impair the sustaining and propulsive power of the foot.

Dr. F. S. Coolidge, of Chicago, said that once after excision of the head of the metatarsal bone, and twice after partial excision of the head of this bone, he had noted that convalescence had been exceptionally tedious, and the pain had lingered for four or five months. In all of his cases the proximal end of the phalanx had been allowed to remain.

Dr. J. E. Goldthwait, of Boston, said that, although in his operative cases he had made it a rule to remove the head of the metatarsal bone, he had not observed any unpleasant after-effects and the patients had usually been able to walk around after two weeks.

Dr. Ansel G. Cook, of Hartford, said that he had operated upon three cases similar to the one reported by Dr. Steele, and in all of them, although the phalanx was normal, the head of the metatarsal bone was so extensively diseased as to require removal.

Dr. W. R. Townsend, of New York, said that, although theoretically scars should not be tender, it was a fact that, unless the scar was so placed as to be protected from pressure, it was likely to prove a source of much discomfort.

Dr. R. H. Sayre said that it had been his custom in these cases to remove some of the bone, even when the disease was not extensive, on the supposition that there was an overgrowth of the head of the metatarsal pone. However, the recent study of some skiagraphs indicated that the prominence of bone was not the result of hypertrophy, but of a dislocation of the phalanx, with marked separation of the first and second metatarsal bones and stretching of the transverse ligament. He now thought that division of the metatarso-phalangeal ligament would answer the same purpose as excision of the head of the bone.

Dr. Goldthwait remarked that he had done a number of operations along the lines suggested by Dr. Sayre, but convalescence had been slower—not less than six weeks—and the ultimate result, as regarded joint motion, much less satisfactory.

The Boot as an Orthopædic Appliance.—Dr. H. P. H. Galloway, of Toronto, present by invitation, exhibited a number of different styles of shoes which he had found of service in his orthopædic practice. In making a flatfoot shoe, he advised that the sole should be made to project, in addition to being made thicker on one side. As compared with an ordinary shoe, it should have a straighter inner border, greater width of sole, and a flatter sole. A clubfoot shoe, the invention of Dr. B. E. McKenzie, of Toronto, was shown. The last for this shoe was so made that the front part was bent outward at a point corresponding to the medio-tarsal joint. The heel counter was very firm, and an additional stiff bracing of leather, at a point corresponding to the first metatarso-phalangeal articulation, furnished the necessary counterpressure. In his opinion, a properly constructed cork-sole shoe should possess the following features, viz.: (1) The inside line should be nearly straight; (2) it should hold the foot in an abducted position; (3) there should be plenty of width across the metatarso-phalangeal articulation; (4) the sole of the boot should be as wide as the sole of the foot; (5) the sole should not be convex from side to side, but flat; and (6) the heel should be both broad and long.

Observations on Morton's Painful Affection of the Foot.—Dr. Royal Whitman, of New York, presented a paper with this title (see p. 189).

Further Studies upon the Arch of the Foot in Infancy and Childhood.—Dr. John Dane, of Boston, said that, as a result of the study of wet tracings of the infant's foot, he had published in 1892 the statement that the arch of the foot seemed to be present at birth, broke down again as the child began to walk, and was again found to be well built up at the age of three or four years. A recent study of this subject, made by means of measurements and hardened sections of the foot, had shown his first observations to be erroneous, chiefly owing to a pad of fat in the infant's foot giving, in wet tracings, a wrong impression of the condition of the arch. In his more recent work, the measurements were taken from (1) over the metatarso-phalangeal joint of the great toe, (2) over the tuberosity of the scaphoid, and (3) over the bearing-surface of the tuberosity of the os calcis. One hundred of these measurements of the arch showed the average to be 1.5 cm. for a child of a year, 1.51 cm. for a child of two years, and 2.73 cm. for a child between three and four years old, while for an adult it was 2.7 cm. A study of the frozen sections showed the space filled up in the infant with a pad of fat, and the arch of the foot to be perfectly formed at birth in the vast majority of cases.

Dr. Myers remarked that in a number of women wearing badly shaped shoes and having the arch of the foot badly flattened he had succeeded in giving relief by attending to the condition of the tendo Achillis and by compressing the metatarsal bones, without making the patients wear any special kind of shoe.

Dr. R. H. Sayre said that he had met with one case of metatarsalgia in which the pain had been immediately relieved by riding a bicycle and pressing the pedal up into the arch of the foot. By gouging out a place in the sole of the shoe for the heads of the metatarsal bones to rest, he had relieved the patient.

Dr. Samuel Ketch, of New York, said that in a young woman having an obstinate form of metatarsalgia, absolute relief had been afforded by the usual internal remedies for gout. She had a decidedly gouty family history.

Dr. L. A. Weigel, of Rochester, said that the mechanical support of the arch and attention to the kind of shoe worn had not proved very successful treatment in his hands. He had long ago expressed the opinion that many of these cases would not yield without appropriate medication for the underlying constitutional condition. As regarded the question of etiology, it should be noted that skiagraphs failed to disclose any such condition as had been described by Morton.

Dr. Goldthwait said that he would explain the greater frequency of anterior metatarsalgia in women by the fact that men wear wider boots, which allow the bones to rest more on the ground. Skiagraphs from these cases indicated that, in many instances, the paroxysmal pain was not the result of the crowding together of the metatarsal bones, but of the crowding of the first phalanx of the last toe against the head of the fourth metatarsal bone.

Dr. G. G. Davis, of Philadelphia, said that the simple device of wrapping adhesive plaster around the fourth toe he had found extremely effective in relieving Morton's painful affection.

Tuberculosis of Bones and Joints.—Dr. Edward H. Nichols, of Boston, delivered an address on this

subject at the evening session, held in the Harvard Medical School. It was freely illustrated with lantern slides. The diagnosis of tuberculous disease of these structures, he said, was based (1) on the more or less constant presence of the tubercle bacillus in the diseased tissue; (2) on the occurrence of the essential tuberculous structure in the diseased bones and joints, *i.e.*, the miliary tubercle; (3) on the production of general tuberculosis in susceptible animals by inoculation with the diseased tissue; (4) on the production of a similar joint or bone disease in animals by injuring their joints after having inoculated them with some of the diseased tissue or with pure cultures of tubercle bacilli; and (5) on the occurrence of general tuberculosis as a manifestation secondary to the primary focus in the diseased joint. Injuries of moderate severity favored the occurrence of tuberculous disease in bones and joints. In a very large proportion of the cases the tuberculous disease of the bones or joints was secondary to a tuberculous focus in the bronchial or mesenteric lymph nodes. The process almost invariably began in the epiphysis of the long bones, but in the "short long" bones the process frequently commenced in the shaft and spread rapidly to the adjacent bone. After an exhaustive study of one hundred and twenty cases of joint disease, Dr. Nichols said he was free to confess that he had not met with a single instance of primary synovitis. In spinal tuberculosis the presence of abscess was often overlooked during life and was first noted at autopsy. In twenty cases of excision of the hip-joint that he had examined very thoroughly, in more than half the disease was found to have begun in the acetabulum.

Dr. J. Collins Warren, of Harvard University, called attention to the extensiveness of the process in tuberculosis of bones and joints and its rare occurrence primarily in the synovial membrane, because, as he said, he regretted to see the tendency of late to believe that the disease often originated in the synovial membrane, and that consequently it was wise to resort to such partial operations as erosion of a joint or excision of the synovial membrane. The old operation of excision of the whole joint had a more sound pathological basis, and would be found to give better results in practice. On this occasion, Dr. Warren said, he desired to announce that a lady of Boston had recently left, by bequest, sufficient funds to provide for systematic and advanced scientific research into the treatment of such diseases as had hitherto proved to be incurable.

Dr. William T. Councilman, of Harvard University, then spoke of the great debt which pathology owed to the surgeon, and particularly of the far-reaching influence of that great light of both the pathological and surgical worlds—John Hunter.

Drs. R. H. Sayre, V. P. Gibney, and E. H. Bradford made suitable responses on behalf of the association.

Second Day—Wednesday, May 18th.

Proposed Apparatus for Preventing the Shortening in the Sitting Position Caused by Pott's Disease.—Dr. A. B. Judson, of New York, suggested that the appearance of patients suffering from Pott's disease might be greatly improved by having them wear under the clothing an apparatus constructed so as to collapse as the patient rose, and come into play automatically as he sat down. This apparatus would have its bearings on the ischiatic tuberosity and posterior surface of the femur, and would in this way add materially to the height of the person while in the sitting-position.

Establishment of an Orthopædic Appliance Shop.—Dr. Lemuel F. Woodward, of Worcester, read a communication embodying his personal experience in this direction, in both hospital and private practice. Except in large cities, he had found the best plan to be letting out the work by contract to a mechanic and a harness-maker, the latter attending to the covering and padding of the apparatus.

Forcible Correction of Spinal Deformities, by Stages, under an Anæsthetic.—Dr. V. P. Gibney, of New York, reported in this paper five cases which he had subjected to this method of treatment. He had been particularly astonished at the almost total absence of reaction after operation, the chief difficulty in the after-treatment being the keeping of the children in bed. Many of the patients could be hyperextended without the use of an anæsthetic, and in time an almost complete recession of the deformity could be secured in this way. The old idea, that one must endeavor to secure ankylosis as speedily as possible, seemed in the light of these recent experiences to need considerable revision, and certainly the latter offered a most cogent argument in favor of early and exact diagnosis.

Immediate Reduction of the Deformity of Pott's Disease Both with and without Ether.—Dr. J. E. Goldthwait, of Boston, presented a report embodying his experience in this new field. He said that he had soon been impressed with the facility with which the deformity could be corrected and the difficulty of maintaining what had been gained. He had simplified the treatment by using his rectangular iron frame in the application of the plaster-of-Paris jacket. The person lay on cross-straps with the head and shoulders entirely unsupported, thus making traction on the vertebræ. The frame was provided with a windlass for making additional traction, but it had seldom been necessary to use it. He had employed the treatment even in out-patient practice. He had operated upon only one case with abscess, but this one had done well. If the correction could be effected without force, he thought it preferable frequently to change the jackets, thus gaining a little at each dressing. When the disease was advanced, it could hardly be expected, from the knowledge of its pathology, that the gap would be filled in with bone, and consequently one must look for a considerable return of the deformity.

Forcible Straightening of Spinal Curvatures under Complete Anæsthesia, with a Report of Cases.—Dr. John Ridlon, of Chicago, presented in this paper his more recent experience with this method. He said that his first operation of this kind was done in June, 1897, and that since that time he had operated in sixteen cases of spondylitis, in seven cases of scoliosis, and in one case of rachitic curvature. Four cases had demonstrable abscesses, one case had an old sinus, and one paraplegia. There were no complications in these cases following the treatment—indeed, the paraplegia was positively benefited. In spite of the free use of felt padding and every precaution to prevent pressure sores, these had been of frequent occurrence. Although he had allowed only two of these patients to walk around, yet the deformity had returned to some extent in all of the cases on the removal of the jacket and traction. The risk involved in this new method of treatment seemed to him to be only that of general tuberculosis or tuberculous meningitis, just as there was after forcible straightening of tuberculous joints. This risk he estimated at ten per cent. He thought the period of treatment would be actually lengthened by this method of forcible correction.

Forcible Correction of Deformities in Pott's Disease.—Dr. F. E. Peckam said that this new treatment was naturally of the greatest service in the early stages of deformity, and that it was the treatment *par excellence* for paraplegia. In one case, in which he had attempted too much at the first operation, there was a severe and dangerous degree of shock for two or three days afterward.

Dr. Henry Ling Taylor, of New York, said that, while the extravagant claims made for this operation had not been realized, on the other hand the fears of some regarding the great danger of the treatment had been proved to be groundless. The result would probably be the adoption of a method of gradual reduction, together with better support for the diseased spine.

Dr. Newton M. Shaffer, of New York, thought that this forcible treatment was chiefly of interest in connection with disease of the middorsal region, for in the lumbar region the disease could ordinarily be treated successfully without surgical interference. A good deal of the apparent increase in height was the result of a modification of the compensatory curves, and not of a decided change in the bone itself.

Dr. R. H. Sayre thought another danger associated with the forcible correction of these deformities was to be found in the possible rupture of an abscess into the lung or of the aorta. He seriously doubted the wisdom of using much force in the effort to reduce the deformity.

Dr. C. C. Foster, of Cambridge, said that the spine could not be expected to throw out callus until the subsidence of the active tuberculous process, yet he thought a straight bone would unite just as well as a crooked one.

Dr. Judson was of the opinion that the revival of this old treatment would prove salutary by inducing surgeons to apply mechanical force properly and continuously.

Dr. A. M. Phelps, of New York, announced his intention of trying the treatment in fifty cases, and then awaiting the ultimate results. He thought that relapse would take place in all but the few cases in which the treatment was undertaken very early, and before a large kyphos had formed. The gap in the vertebral column would not heal by the deposit of bone, because fibrous tissue would grow over the ends of the bone. For this reason he was now wiring the spinal processes together, by drilling a hole through the upper vertebræ and weaving it in and out until the entire kyphos was firmly fastened together.

Congenital Dislocation of the Shoulder: Etiology and Pathology, and an Operation for its Relief.—Dr. A. M. Phelps presented this paper. He stated his belief that the origin of this condition could be traced to an injury received *in utero* or at the time of birth, and this was based on the finding of evidences of fracture in all of the cases upon which he had operated. The paralysis was considered to be purely accidental. He recommended exposing the head of the humerus by an incision along the posterior border of the deltoid muscle and dividing the capsule. The head of the bone should be cut away down to the epiphyseal line and rounded off, and then should be slipped back into the glenoid cavity. The new articulation which had formed should be removed with a gouge, and, the redundant portion of the capsule having been cut away, the remainder of the latter was sutured with catgut. To secure the very best functional result it was better to dress the arm in an elevated position.

Dr. Weigel said that as Dr. Phelps destroyed a portion of the humerus there seemed to be risk of bony ankylosis or of a flail-joint. He could not agree with him that the majority of cases that had heretofore been regarded as paralytic were really examples of this form of dislocation.

Dr. Charles L. Scudder, of Boston, said he had met with several cases of what seemed to be true congenital dislocation of the shoulder, there being a distinct difference in the length of the clavicle and in the size of all the bones of the upper extremity on the two sides. This should serve to distinguish congenital dislocation from a simple subluxation due to paralysis.

Dr. H. L. Taylor remarked that among the many cases of obstetrical paralysis at the Hospital for Ruptured and Crippled not a single case of congenital dislocation had yet been discovered.

Caries of the Spine in Adults.—Dr. E. G. Brackett, of Boston, read this paper. He stated that very few cases occurred after the age of forty years, but quite a number between thirty-five and forty. In the adult cases that had come under his observation, the disease had usually been in the lower dorsal or upper lumbar region, and traumatism assumed a much more important rôle than in early life. Thus, in three or four of his twenty cases the disease developed after a distinct strain or injury. Nineteen of the patients complained at a very early stage of a distinct pain in the lumbar muscles, just above the attachment of the erector spinæ muscles, and the symptom of stooping was often absent or but poorly marked. The early symptoms extended over periods varying from two months to two years, and were characterized by more or less distinct remissions.

Dr. Shaffer said that he had seen a large number of cases of caries of the spine in persons between the ages of thirty and sixty years. They had been for the most part traumatic in origin, and the invasion less insidious than in children.

Dr. Ridlon remarked that he had seen many more adult cases in recent years than formerly, when in New York, and he had also been surprised at the better progress made by the adults.

Bivalve Plastic Splint for Pott's Disease.—Dr. Henry Ling Taylor, of New York, read a short description of this apparatus, urging that the great principle of antero-posterior leverage should be carried out just as much in the use of plaster jackets as with steel supports. In the splint described, the ordinary jacket, made strong in front and solid at the edges, was provided with strips of felting on either side of the spinal processes and across the inside of the front, top, and bottom. While still fresh, the jacket was cut in the axillary line by two straight incisions, into an anterior and a posterior half. The breadth of these was somewhat diminished by the paring away of the sides. The bivalve splint was then trimmed, and provided with at least four straps and buckles on each side, or one side was fastened by a leather hinge. The head rest, when needed, should consist of a chin piece supported by one or two bent steel bars, which were incorporated in the anterior part of the splint. The advantages claimed were cleanliness, avoidance of excoriations, adjustability, and precision.

Some Experiments with the Celluloid Bandage.—Dr. Augustus Thorndike, of Boston, described two methods of making jackets out of celluloid. One consisted in painting on gauze bandages on a cast a varnish made by dissolving celluloid in acetone. The trouble with this plan was that many coats were required, and each coat shrank as it dried. He had found the second method very much better. Strips of thin celluloid, three or four inches wide and three yards long, were loosely rolled up like a bandage, and were then exposed to the vapor of acetone in a closed jar until soft. They were kept in these jars, and were applied to the cast or limb like ordinary roller bandages. They hardened in about twenty minutes, and a glossy finish might be given the jacket by a final coat of acetone or of acetone-celluloid paste. This method would be found useful, particularly in making splints and jackets for children, as the material was not injured by wetting with perspiration or urine.

Simple Water Pad for the Prevention of Bedsores.—Dr. Ansel G. Cook described under this head a simple expedient. It consisted, he said, simply

in improvising a water pad or bed out of four or more ice bags, which were laid side by side between two cloths and held in place with a few stitches.

Lantern-Slide Demonstration of Instantaneous Photographs of the Gait of Children in Certain Forms of Paralysis.—Dr. W. N. Bullard, of Boston, described, with the aid of some lantern views, the work done by Dr. G. W. Fitz and himself in photographing the gait of children. Double rotating shutters were employed in making the exposures. These shutters were rotated in opposite directions by means of clockwork, and gave an exposure of one-fiftieth of a second and an interval of one-fifth of a second between the exposures. In front of these rotating shutters was an ordinary pneumatic shutter. The floor and background were a dead black. When the rotating shutters were set in motion, the child was told to run across the room, and when it arrived at the desired point the pneumatic shutter was opened, and was kept open until the child had reached the farther limit of the field. To make it easier to study these photographs, white circles were marked on the knees and hips and white lines on the legs and feet of the children. The more distant leg was distinguished from the other by making its lines dotted.

Some Observations on Tuberculous Joint Disease in Colorado.—Dr. George B. Packard, of Denver, read a paper with this title. He stated that, although a large proportion of the adult people of Colorado were tuberculous, tuberculous joint disease was not so frequently observed in their offspring as in children in the East. Nevertheless, slight traumatism would often arouse the tuberculous process to activity among the numerous adults in whom the disease had been arrested. These observations were explained by the favorable influence of climate and sunshine, which made it possible for persons to spend the greater part of their time in the open air.

Dr. Shaffer remarked that these observations were an additional argument in favor of country branches for orthopædic hospitals.

New Traction Apparatus for the Treatment of Clubfoot.—Dr. Newton M. Shaffer exhibited a new apparatus of this kind, the distinguishing feature of which was the placing of the centre of motion below the foot.

Anterior Achilles Bursa Associated with Exostosis a Possible Factor in Etiology.—Dr. C. F. Painter, of Boston, read a paper with this title, in which he reported eight cases, all in adults. He said that on either side of the tendon was a tender swelling, and that the affected area was hyperæmic. In the two cases operated upon, there was profuse capillary hemorrhage, suggesting the venous stasis of inflammation. The cause seemed to be a constitutional one, and the disease was essentially chronic. In the acute stage, the treatment should be rest, heat, and bandaging.

Congenital Dislocation of the Hip-Joint.—Dr. E. H. Bradford, of Boston, read this paper. He stated that by exploratory incisions it had been determined that the relapses had been due to the falling in of the capsule, or by the cotyloid ring being too small for the neck. The bloodless method must always be uncertain. As with the cutting-operation, there was always a certain risk of infection, because the wound was very large and the drainage imperfect. The wound should be made as small as possible, and every precaution taken against infection.

Dr. Whitman expressed doubt regarding the obstacles to reduction being those mentioned by Dr. Bradford. Formerly he could not get the consent of the parents to the cutting-operation in little children; now, there was no difficulty in getting permission to operate by the bloodless method in infants of fifteen months. For this reason he was in favor of the bloodless method, if for no other.

Dr. Gibney said that he was disposed to feel as Dr. Whitman did about the cutting-operation. It was a great advantage to be able to treat these cases early.

Dr. Shaffer remarked that if the results of all the cutting-operations for congenital dislocation of the hip were tabulated and published, he believed it would effectually put a stop to that method of treatment.

Third Day—Thursday, May 19th.

Operation for the Correction of Web Fingers.—Dr. G. G. Davis, of Philadelphia, described with the aid of diagrams a method of making the flaps, which he considered an improvement on those usually employed.

Dr. Gibney said that, in his hands, the most satisfactory operation had been that in which an incision was made along the dorsal and palmar aspects of the adjoining finger, and the flap brought around and united.

Dr. Goldthwaite said that the formation of cicatrices could be entirely obviated by cutting a sufficient flap from any convenient place, and then covering the raw surface with Thiersch skin grafts.

Adenoids as a Causal Factor in Deformity.—Dr. F. S. Coolidge, of Chicago, in this paper discussed this subject, chiefly from the standpoint of prevention, taking the position that adenoids were probably the source of tuberculous infection in some cases of joint disease.

Dr. H. L. Taylor spoke of the development of acute torticollis by absorption of poison by the throat.

Dr. Shaffer referred to a case of petit mal, in which the seizures had been very favorably influenced by the removal of adenoids.

Growth in Spondylitics.—Dr. Henry Ling Taylor presented this paper. He said that the degree of retardation in these persons depended, in a given individual, on the age of invasion, the location, the amount, the severity, and the duration of the disease, as well as on the hygienic and surgical management of the case. In the average case, developing early, growth was much retarded up to the fourteenth year, from one and one-fourth to one and one-half inches being a fair rate, instead of the normal rate of two inches or more. A growth of one and one-half to two inches for some time was an indication that the case was progressing very favorably; on the other hand, if the growth was very slow, or was at a standstill, the opposite was true. Puberty and general physical development were also retarded. If the disease ceased to be active, there might be an acceleration of growth as late as the sixteenth or eighteenth year, and it was possible for such individuals to grow considerably, even after the age of twenty. Dr. Taylor suggested that, as the rate of growth gave such valuable information to the orthopædic surgeon, it should be the rule to take measurements of the standing and sitting heights of spondylitics two or four times each year.

Venereal Arthropathies.—Dr. Stewart L. McCurdy, of Pittsburg, in this paper, gave an extensive review of the literature, from which he concluded that fully seventy-five per cent. of the observed cases gave a history of either acute or chronic gonorrhœa. He also claimed that fifty per cent. of all cases of epiphysitis were syphilitic. For these reasons he was in favor of giving iodide of potassium in every case of hip or spinal disease in which there was the least suspicion of syphilis. According to his experience, the most satisfactory treatment of gonorrhœal synovitis was early aspiration and frequent injections of iodoform emulsion.

Dr. Ridlon took the ground that syphilitic joint disease was not at all uncommon, and cited certain cases to show the evidence of strong syphilitic taint and the very prompt improvement following a resort to antisyphilitic treatment. However, most of the others taking part in this discussion were opposed to his view and objected to having patients suffering from joint disease subjected to a course of mercurials and iodide without a more substantial basis for such medication.

Operation for Ununited Fractures of the Neck of the Femur.—Dr. Arthur J. Gillette, of St. Paul, read this paper, and by means of colored anatomical plates illustrated the method of operating. He reported three cases successfully treated by the method advocated. The operation, he said, was simple, and was performed as follows: A horseshoe-shaped incision was made over the hip, extending from about the anterior superior iliac spine to below the trochanter major, and back to a line opposite the anterior superior spine, about the centre of the gluteus maximus. A chain saw was then passed between the posterior edge of the tensor vaginæ femoris and the anterior border of the gluteus medius, and was brought out from behind the muscles. The trochanter major was then sawed off. It was next thrown back with its muscular attachments, exposing thoroughly the capsule of the hip-joint, on division of which the fracture was laid bare. The fractured surfaces were next freshened, and a bone-peg was driven from the surface where the trochanter major was removed through the neck of the femur. The trochanter major was then secured in its normal position by a bone peg.

Elongation of the Ligamentum Patellæ as a Factor in the Production of Hey's Internal Derangement of the Knee-Joint.—Dr. N. M. Shaffer read this paper. He stated that there could be an elongation of the patellar ligament without subluxation of the semilunar cartilage, provided there was not much lateral mobility. The object of his treatment had been to allow only of antero-posterior motion.

Voluntary Lateral Dislocation of the Knee in Infants.—Dr. Augustus Thorndike, of Boston, reported in this paper two cases in infants of about a year old, in which the ligament admitted of considerable lateral and rotary motion when the knee was straight. When it was flexed from twenty to forty-five degrees a voluntary dislocation could be produced, and it could be reduced by flexing to a right angle or by extending the knee. In one of the cases a good result was obtained by the use of a simple hinge splint.

Report of a Case of Spontaneous Dislocation of the Hip during Typhoid Fever.—Dr. L. A. Weigel, of Rochester, reported a case of this kind in a girl of eight years. It occurred in the sixth week of the typhoid fever. It was reduced under anæsthesia, but recurred in ten days. It having been again reduced, the joint remained in position permanently, or at least was in position when last seen, which was a few weeks afterward.

Bed Position as an Etiological Factor in Spinal Curvature.—Dr. G. W. Fitz, of Boston, made a few remarks on this subject in connection with a lantern exhibition of a series of photographs projected on the screen. According to his observations, sleeping on the same side habitually tended to fix a curve of the spine by favoring the growth of the bone and ligaments on one side, and retarding the growth on the other. The common habit of curling up in bed tended to exaggerate the effect of lateral bed position.

Officers Elected.—Dr. W. R. Townsend, of New York, was elected president, and Dr. John Ridlon, of Chicago, secretary of the association.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE EXODUS TO EDINBURGH—PROFESSOR MARTIN'S ADDRESS TO THE GYNÆCOLOGICAL SOCIETY—PREVENTION OF TUBERCULOSIS—THE VACCINATION BILL—OTHER BILLS—THE PRINCE OF WALES.

London, July 29, 1898.

For the nonce the centre of medical attraction has shifted to Edinburgh, where a number of our brethren are enjoying the far-famed hospitality of the northern capital. It is common enough to hear it said that every one has gone to Scotland, but a considerable allowance must be made for the *modus loquendi*. There is no fear of any one being unable to find a doctor in London, for after all departures there are five thousand of us left to look after the invalids. Nor are we left without our share of pleasant or instructive meetings. On Saturday, for instance, the Gynæcological Society provided us with a sensation. Professor Martin, of Berlin, had accepted an invitation to deliver an address before the society, and, taking London on his way to Edinburgh, discoursed on "The Development of Ovariotomy" in a manner that delighted a distinguished audience, among whom were the medical chiefs of the army and navy, Professors Gardner, Jacobs, Young, Lapthorne Smith, Landau, Sanger, Mangiagalli, and a number of others who took the opportunity of attending this special meeting of the society while *en route* for the north. When a renowned operator with enormous experience addresses an audience specially skilled in his subject, he is naturally listened to with profound attention. When he quietly relates the difficulties he has met with and the methods he has adopted to overcome them, of course those who have encountered them, too, though with less experience, are deeply interested. So it was with Professor Martin, who modestly referred to his success and laid before the society the results of his experience. At the outset he reviewed the historical development of ovariotomy from the time of McDowell, and referred to Clay, Atlee, Peasley, Baker Brown, Thomas Keith, Spencer Wells, Stilling, Koeberlé, Hegar, Battey, Tait, and so on. The influence of antisepticism and of bacteriology was noticed and the professor then passed on to discuss the questions which at the present time most interest ovariotomists. He expressed great pleasure at reading Clement Cleveland's paper in the Medical Record of April last. Then he considered the conditions most suitable for vaginal colpotomy and the difficulties which may be met with, and added: "I always bear these difficulties in mind and I have not yet had a single case out of over seven hundred in which I had to abandon the vaginal operation and finish the operation by the abdominal method."

In speaking of vaginal ovariotomy Dr. Martin said he had lost only two cases out of one hundred and thirty-one, or 1.5 per cent. In Wells' early time the mortality of abdominal operations was twenty per cent. To-day it is only from two to five, and many operators can report a long run of recoveries in more or less complicated cases. "I do not deny," said Professor Martin, "that in those cases selected for vaginal ovariotomy there is often less complication by way of adhesions, metastasis, and so on, so that statistics of the two methods must be compared with great reserve. We all agree that statistics are often misleading, and we need to exercise great care not to be wrongly impressed by them." Professor Martin concluded by thanking the society for the honor done

him by the invitation, which he regarded as offered equally to all German gynæcologists.

The president, Dr. Macnaughton Jones, referred to the many important points which had been dealt with by this master of their art, and proposed a hearty vote of thanks to him as an honorary fellow of the society for his able address. This was seconded by Dr. Routh, whose recollection enabled him to speak from personal knowledge of the work of Baker Brown and Spencer Wells. Dr. Bantock supported the motion, which was carried with applause and briefly responded to by Dr. Martin.

I lately reported to you the proposal to form an association for the prevention of tuberculosis. The society has now been established and a circular issued, signed by Sir S. Wilks, Sir W. MacCormack, and Sir W. Broadbent. Mr. Morris is treasurer and Dr. St. Clair Thomson secretary. The subscription is to be 5*s.* per annum, or £5 5*s.* for a life membership. The objects are stated to be the dissemination of information, arousing public feeling and establishing sanatoria.

The government has not heard the last of its weak concession to the antivaccinationists. Some of its regular supporters are so discontented that they purpose to reject the bill altogether at its last stage. It will be no loss if it is rejected, now it is emasculated. Nearly all the leading journals condemn the concession, and Sir G. Stewart's Edinburgh address is having considerable influence.

As an exception the *Saturday Review*, often dubbed *Saturday Sneerer*, comes out with a fling at doctors, saying the belief in them is obviously diminishing, and coarsely suggesting they find money in it, adding that they are taking the place of the parsons, "whose business was also confined to prophylactic measures." The *Sneerer's* wit seems deteriorating.

There is to be a Saturday's sitting of the house tomorrow, in order to deal with the bill. It will then be seen whether it can be passed or will be dropped.

The Prince of Wales is as well as could be expected in the short time that has elapsed since his injury.

Prof. William Osler has received an honorary degree from the University of Aberdeen.

The pharmacy amendment act has received the royal assent.

The habitual-inebriates bill is making steady progress.

THE PHYSICAL EXAMINATION OF RECRUITS.

To the Editor of the Medical Record.

Sir: In the number of July 23d of the Medical Record attention is called to the general order recently issued from the adjutant-general's office of the war department, requiring closer attention to the physical condition of men examined and accepted for service. This order has caused some surprise, because it was supposed that the examinations were already extremely severe. As bearing upon this question, I should like to submit a few figures from the experience of the Washington Life Insurance Company, of this city. This company, some two months ago, began to receive applications for life insurance from members of the volunteer and regular army service. During this period, 285 enlisted men have been examined by the company's medical examiners. Of the 285, 34, or about 12 per cent., were rejected or deferred for various causes. The principal causes for rejection were as follows: Pulmonary disease, 7; albumin in the urine, 7; heart disease, 5; frail physique, 2; intemperate habits, 3; catarrh of the ear, 1. The other causes for rejection of the applicants do not bear upon the personal condition of the men, but had reference to history of recent illness or to unfavorable family record—questions which do not, perhaps, concern the army administration. At least twenty-five, however, of the individuals rejected were, in my opinion, unfit for service. I have been informed that no analysis of the urine is made by the army examiners. It will be seen from the above figures that this is a grave omission. Most of the examinations in the above cases were made at Jacksonville, where the company has a most capable examiner. The soldiers belong to regiments from all parts of the country, including Illinois, Wisconsin, Virginia, New Jersey, North and South Carolina, New York, South Dakota, Florida, Missouri, Georgia, and California. One of the individuals who was rejected because of "frail physique" was five feet eleven inches in height, weighed one hundred and thirty-five pounds, and had a chest measurement of only thirty inches. Such men hardly seem fit to endure the hardships of service in the field.

John W. Brannan, M.D.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending August 6, 1898:

	Cases.	Deaths.
Tuberculosis	100	145
Typhoid fever	29	15
Scarlet fever	71	6
Measles	102	11
Diphtheria	118	12
Laryngeal diphtheria (croup)	2	2
Cerebro-spinal meningitis	0	11
Chicken-pox	5	

Health Reports.—The following statistics concerning small-pox, yellow fever, and plague have been received in the office of the supervising surgeon-general of the Marine Hospital service during the week ending August 6, 1898:

Small-Pox—United States.

		Cases.	Deaths.
Alabama, Hurricane Bayou	July 28th	1	
Mobile	July 30th	1	
Colorado, Boulder County	July 26th	1	
Los Animas County	July 26th	5	
Georgia, Atlanta	July 27th	1*	
Mississippi, Laurel	July 28th	2	
Meridian	July 28th	2	
North Carolina, Asheville	July 19th	1	
Catawba	July 19th	6†	
Cleveland, Rowan County	July 19th	7	
Durham	July 19th	1	
Elmwood, Iredell County	July 19th	2	
Mooresville, " "	July 19th	1	
Reidsville	July 19th	1	
South Carolina, Spartanburg	July 26th	4	
Ohio, Goshen, Clermont County	July 26th	15	

*Imported probably from West Point, Ga.
†In one family.

Small-Pox—Foreign.

Belgium, Ghent	July 8th to 16th	2	
China, Hong Kong	June 4th to 11th	1	1
India, Singapore	May 1st to 30th	..	4
England, Southampton	June 18th to 25th	2*	3
France, Marseilles	June 1st to 30th	..	1
Russia, Odessa	July 2d to 9th	2	
St. Petersburg	July 2d to 9th	6	3
Sweden, Christiania	July 2d to 9th	6	1
Christiania	July 9th to 16th	1	

*One case removed from s.s. *Ebro* and one from s.s. *Briton*.

Yellow Fever.

Brazil, Araraguara	April 1st to May 31st	125	57
Descalvodo	May 1st to 31st	2	1
Ribeira Bonito	April 1st to 30th	6	3
Rio de Janeiro	June 1st to 17th	28	26
Rio de Janeiro	June 17th to 24th	15	12
Santos	April 1st to 30th	103	52
Mexico, Tampico	July 1st to 24th	15	7

Plague.

China, Hong Kong	June 4th to 11th	2	103
Hong Kong	June 11th to 18th	15	20

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Original Articles.

ON CONGENITAL HYPERTROPHIC STENOSIS OF THE PYLORUS IN INFANTS.*

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NEW YORK.

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IN the medical literature of this country there are on record, as far as I can see, only four cases of congenital stenosis of the pylorus in children, and two of these are described by Ashby,[1] of Manchester, England. However, there are sufficient reasons to believe that this affection is not so rare as it would seem to be, judging by this scarcity of record. In the European medical literature of the last few years we see a constant growth in the reports of these cases. In 1896 Finkelstein[2] collected eleven cases, and in 1897 John Thomson[3] gives a *resumé* of sixteen, not including two cases of Henschel,[4] and now four new cases are to be added—one by Schwyzer,[5] two by Ashby,[1] and one by Rolleston and Haynes.[6] Furthermore, an analysis of these cases shows that they can hardly be taken as a fair representation of the actual occurrence of this form of disease. The first case on record was described by Williamson,[7] in 1841, and the second was reported by Davoski,[8] 1842. Then a period of forty-six years elapsed with no reference to this affection, until in 1888 Hirschsprung,[9] of Copenhagen, inaugurated the present new series of records. Again, in this new series we find that two cases are reported by Hirschsprung, four cases by Finkelstein and by Gran[10] from Heubner's clinic, three cases by Thomson, two by Schwyzer, and two by Ashby—each group of cases being observed by the respective writers only within a short period. This shows that if the attention of an observer was once called to the existence of this affection, he did not fail soon to discover another case. A few years previous to the publication of Hirschsprung, the subject of congenital stenosis of the pylorus had been treated by Landerer[11] and by R. Maier.[12] The latter has published thirty-one cases (including ten of Landerer) of stenosis of the pylorus, which were collected in the autopsy room within the course of only a few years. They considered these cases as congenital, on the ground that there were no signs of a pathological state (catarrh, ulcer, etc.) which could have caused the hypertrophy and stenosis of the pylorus. However, as the youngest of these patients in which the stenosis was observed was twelve, and the oldest eighty years, the assumption of these authors that the stenosis was not acquired was not beyond doubt; and as the reports of Williamson and Davoski were forgotten long ago, it then remained still an open question whether congenital stenosis and hypertrophy really occur. And herein lay the incentive for the report of Hirschsprung. The observation of stenosis and hypertrophy in a child only thirty days old brought the requisite proof that these conditions may indeed be congenital. Now the twenty-two cases of congenital stenosis in infants recorded in the literature have all been found at autopsies, and in only four of these cases was the correct diagnosis made *intra vitam*. But in the light of the statements of Maier and Landerer, who consider the stenosis in their cases as congenital, we must assume that some of these subjects of congenital stenosis of the pylorus not only survive infancy, but also attain sometimes even advanced age: then the expectation is justified that an early recognition and proper treatment of these cases may be instrumental in saving the lives of some of these infants. And indeed there are already four cases on record in which the proper diagnosis was made and by means of efficient treatment the children were kept alive. It is worth mentioning that three of these children were under the care of Heubner,[10] from whose clinic four autopsies of this kind were reported, and one of the cases comes from Henschel, who reported two autopsies. We may also add here that in the few cases with autopsies in which the condition was recognized during life, the respective physicians, it seems, were enabled to make a proper diagnosis by having seen previous autopsies of this kind of cases. Thus Thomson made a correct diagnosis in his third case, Schwyzer in his second, and Finkelstein after having seen the cases of Gran in Heubner's clinic.

This brief review teaches us that the cases of congenital stenosis of the pylorus are by no means very rare, and that the mere calling of attention to the existence of this disease was often instrumental in bringing out more such cases,* and in some instances it enabled the physicians to make an early diagnosis and even to save the life of the little patients. With these considerations in my mind, I ask your permission to report here and discuss in detail a case of stenosis of the pylorus in an infant of six weeks, in which I was fortunate to see my diagnosis confirmed by an autopsy *in vivo*, but I regret to be also able to demonstrate to you now the correctness of my diagnosis by a remarkable anatomical specimen.

L. K—— was a well-developed, plump baby when she was born, on December 10, 1897, from a nervous, pale, and thin mother and a healthy father. I was called to see the child three days later. She was constantly crying, except when she took the bottle, from which she drank hastily and with unusual eagerness. The mother had no nipples, and the child was fed with milk and water, one to four. She vomited occasionally immediately after drinking, the milk being yet uncurdled: the bowels were evacuated by oil and by calomel. There was blennorrhœa of the right eye. I advised that the baby be fed with smaller quantities but at regular intervals, and prescribed hydrochloric acid and aqua laurocerasi, to be given before each feeding. This had a favorable effect—the child was resting better, drank from the bottle with less haste, and retained the milk.

I was next called on January 2, 1898, about three weeks later, and was told that the medicine had been given for some time and then discontinued, the condition of the child appearing to be satisfactory. But

* Read at the annual meeting of the Association of American Physicians, Washington, D. C., May 2, 1898.

* A gentleman from Boston informed the writer that while listening to this paper he became convinced of having had a case of this kind under his observation.

meanwhile the nipples of the mother's breast were drawn out and the child was put to the breast, and soon the vomiting commenced again and was more profuse than before. When I was called at this time the baby was vomiting every time immediately after taking the breast, the milk was curdled, and the vomit smelled strongly acid; the movements of the bowels were retarded. The child was again very restless, cried constantly, had hardly any sleep, and baby and mother looked quite worn out. I stopped the mother's nursing, washed out the baby's stomach with warm saline, and gave calomel, which was retained and had a good effect. The baby now received only oatmeal water, the first day one ounce and in the following two days two ounces every hour. Before each nursing the child was given some bicarbonate of sodium and cherry-laurel water. The child now retained all that it was given, the bowels moved spontaneously, the heretofore diminished diuresis increased again, and the baby again rested better.

Meanwhile a promising wetnurse was procured, and on January 6th the child was again put to the breast. The baby took it with eagerness, drank hastily, emptied one breast in a few minutes, and soon vomited apparently all that it had swallowed. This occurred every time when the child was put to the breast. It being supposed that the eagerness and haste with which the child took the breast might be the cause of the vomiting, the milk was withdrawn by a pump and then given to the child slowly and in small quantities. I had also changed the bicarbonate of sodium to hydrochloric acid. At first the new arrangement seemed to work favorably—the child vomited but once in five or six hours, the milk came up only in small quantities, contained flocculi of small curds, and had no abnormal odor or appearance. It was now attempted to increase gradually the quantities given at one time; but within a few days the vomiting, too, gradually increased in quantity and frequency. I attempted to empty the stomach by a Nélaton catheter at a time when the child had not vomited for a few hours, and found that the quantity which was thus removed was about equal to the amount which the child had taken within the last few hours. When now I examined the abdomen, I found the empty stomach rather strikingly contracted, easily palpable like a little tumor, and lying in the middle line high up in the epigastrium. There was then no atony of the walls of the stomach; nevertheless it harbored a large quantity for hours without being able to empty it into the intestines. For the first time now it dawned upon me that I might have to deal here with a high degree of stenosis of the pylorus, and I started out therefore to establish this diagnosis by proper methods.

The following data were gradually collected within the next few days. When the stomach was filled with water under moderate pressure the entire epigastrium bulged up, and on percussion the dulness of this region terminated about one finger above the umbilicus. The bulging upper part of the abdomen contrasted sharply in appearance with the sunken lower part. When the stomach was moderately inflated with air, the contrast between the upper and the lower parts of the abdomen was still more striking and the stomach seemed then to reach the umbilicus. When the stomach was filled with water and the colon inflated with air, it was easily seen that the stomach was lying just next to the wall and the colon beneath it. When the stomach was filled with water, or during and after nursing, peristaltic waves could distinctly be seen passing over the region of the stomach from the left to the right side. While the child was quiet the lower end of the soft catheter, when pushed deeply into the stomach, could be felt bent around and running alongside the large curvature, marking in this way the lower border of the stomach (method of Boas). When there was some liquid in the stomach and air was blown through the catheter, the air which escaped from its inside opening into the surrounding liquid caused a gurgling sound; the auscultation of this sound was utilized to locate the lower end of the catheter and with it the lower border of the stomach. By these latter methods and by percussion the size of the empty stomach could be established, even when it remained permanently relaxed, which was, indeed, soon the case. The tumor-like contraction which was mentioned above was observed only twice, in the beginning of the scrutinizing examination. In the consecutive period it was found that the stomach remained relaxed even in a thoroughly empty state, and that gradually it assumed larger proportions. It was then evident that there was a serious degree of stenosis of the pylorus, which gradually brought out hypertrophy and dilatation of the stomach.

I started now to wash the stomach daily, which revealed at the same time the fact that even violent and frequent vomiting attacks never thoroughly emptied the stomach. As I had to settle now for a permanent state, I had to let the nurse give the child the breast directly, as she was unwilling to continue the feeding by the previous methods; it was nursed very frequently, but only for a few minutes at a time. The bowels were greatly retarded, but promptly responded again to a dose of calomel, which seemed to show that there was still some free communication between the stomach and the intestine. The mixture of the hydrochloric acid and the aqua laurocerasi was discontinued, as I feared especially the paralyzing effect of the latter on the contractility of the stomach. The extreme restlessness of the child, however, necessitated the resumption of the latter drug again, but very small and infrequent doses were sufficient to keep the baby in a tolerably tranquil state. For a number of days the condition was a tolerable one; the child was resting, vomited only four or five times a day, passed sufficient urine; the bowels moved once or twice a day. On the 17th, 18th, and 19th of January the stomach was not washed. It was noted by the family with satisfaction that on these days the child vomited less than before. On the 20th, however, it was found that the child had meanwhile lost a few ounces in weight, that she urinated very scantily, and was again constipated. An examination of her abdomen showed that the stomach now extended far below the umbilicus, and the peristalsis was nearly entirely absent. The stomach was emptied with a catheter, and it was found to have contained eight ounces of curdled milk mixed with tenacious mucus. A renewed attempt to wash the stomach more frequently brought no perceptible change in the now quite hopeless state.

It was then decided to attempt to help the child by means of an operation. The child was still in a tolerable state, was not emaciated, and offered a fair chance to stand an operation. This was done by Dr. Willy Meyer on the 23d of January. The child was then forty-four days old. The operation lasted about forty-five minutes; the baby stood anæsthesia fairly well (Schleich's mixture); hypodermics with stimulants were freely administered. As soon as the abdomen was opened, the very large stomach filled with air presented itself. It had already the configuration and the position of the stomach of an adult. The walls of the stomach, especially of the pyloric part, appeared to be thickened. The pylorus itself offered a striking appearance; it looked like a little tumor of the size of a large cherry, uniform in all dimensions. The intestines appeared to be totally empty. The surgeon then quickly performed gastro-enterostomy by means of a Murphy button of the smallest size he could then obtain. The baby appeared after the operation to be in a tolerable state. Hypodermics were continued; an at-

tempt at transfusion was unsuccessful, on account of the minuteness and emptiness of the infant's veins. A few hours after the operation, however, the child started vomiting small masses of a brownish-black color; this was followed by frequent tremors, which gradually developed into convulsions. The temperature rose to 103° F., and, although convulsions and fever

FIG. 1.—Stomach of L. K— —. Hardened in Alcohol, Anterior Aspect. *A*, Hypertrophied pylorus; *B*, dilated duodenum; *C*, cardia; *D*, fundus; *E*, pyloric portion; *F*, distal end of jejunum.

subsided after some time, the child gradually collapsed and died, thirty hours after the operation. The child vomited no bile and the diagnosis was correctly made before death. The button was too large for the exceedingly narrow jejunum, and not only prevented the stomach from emptying its contents into the intestines, but also caused a stagnation of the bile in the parts of the duodenum and jejunum lying between the pylorus and the place of the anastomosis with the stomach. (I may remark here that the infant never during her short life vomited bile, and also that she never vomited at any other time except immediately after drinking.)

The autopsy was restricted to the abdominal cavity. There was no trace of inflammation. All the intestines were absolutely empty; no other abnormalities presented themselves. The stomach with the part of the intestines connected with it by means of the Murphy button was removed. The stomach is of remarkable size; it measures, from the outer end of the fundus to the pylorus, eleven centimetres. The fundus is remarkably well developed; its walls are very thin, but the walls of the pyloric portion are quite thick. This portion is funnel shaped, and ends in a fine opening leading into the pylorus proper, the walls of which are considerably hypertrophied; the lumen permits the passage only of a fine probe of less than one millimetre thickness. The narrow channel, which is not straight but presents rather a broken line, was obliterated with tenacious mucus. The peculiar appearance of the thick duodenal end of the pylorus with the tenacious mucus hanging from it strikingly reminds one of the vaginal portion of the uterus protruding into the vagina. The contrast between the hypertrophied pylorus and the very thin-walled duodenum is here the more sharp, as duodenum and jejunum present acute dilatation due to the stagnation of the bile within them during the period elapsed between the operation and death.

Prof. T. M. Prudden, who kindly examined the specimen, made the following report: "On a longitudinal section of the pyloric portion of the stomach, in the line of the greater curvature and extending into the duodenum, the pylorus (hardened in formalin followed by alcohol) measures, from the tip of the gastro-duodenal valve to the point at which the pyloric portion rather abruptly merges into the general stomach wall, 3.5 cm.; the thickness of the entire wall just back of the tip of the gastro-duodenal valve is 4 mm. Passing backward toward the stomach, the wall gradually thins, until at a point 7 mm. from the tip of the valve it measures 3 mm. It then gradually thickens, maintaining for about 1 cm. an average thickness of 4 mm.; then thins abruptly, to merge into the general stomach wall. The mucous membrane is thrown into a series of longitudinal folds.

"The microscopical examination shows that the thickening is largely due to the presence of dense fibrous tissue in the submucosa and to a hyperplasia of the inner muscular layer, especially of the proximal half of the pyloric portion. The moderate thickening of the wall at the gastro-duodenal valve, which gives to this structure an undue prominence when seen from the duodenal aspect, appears to be almost wholly due to the fibrous hyperplasia in the submucosa; while at the other—the proximal end of the pyloric portion—both the inner muscular layer and the submucosa share in producing the thickening of the wall. The external muscularis presented no abnormality. The mucous membrane was not sufficiently well preserved to permit the detection of any abnormality, save a general slight encroachment between the bases

FIG. 2.—Stomach of L. K—, Posterior Aspect. *A*, Pylorus; *B*, dilated duodenum; *C*, dilated jejunum; *D*, seat of Murphy button; *E*, distal end of jejunum, showing natural diameter; *F*, pyloric portion of stomach; *G*, fundus.

of the glands of the hyperplastic tissue in the submucosa.

"The anatomical diagnosis is, accordingly, stenosis of the pylorus, from fibrous hyperplasia of the submucosa; hyperplasia of the inner muscular layer, especially of the proximal half of the pyloric portion of the stomach."

When we recapitulate briefly the main features of the case, we see that in the first two weeks there were

no other symptoms except restlessness and extreme eagerness for drinking, with occasional vomiting. But this soon became very frequent, and continued so until a few days before death. The vomiting was always accomplished with force; it occurred soon after drinking, and at no other time; the vomit never contained bile, and did not show any fermentation or other signs of a catarrhal condition of the stomach. Until a few days before death the bowels moved tolerably well and responded promptly to calomel. A study of the dimensions and contractility of the stomach has demonstrated that, at the beginning of the fourth week when the examinations were first made, the stomach was rather unusually contracted when empty and showed lively peristalsis when full. Gradually, however, apparently a state of atony of the stomach developed; it became more and more permanently dilated, extending over the larger part of the abdomen, and no more peristalsis was seen. And just at this juncture the vomiting seemed to diminish, but with no sign of food passing into the intestine or being absorbed from the stomach. There was no defecation and but little urination, and the child commenced to lose weight.

That the extreme narrowness of the lumen and the remarkable hypertrophy of the walls of the pylorus were not acquired within the very short period of the child's life, goes without saying; there were no signs of an ulcer, an inflammation, or of anything else which could cause such a stenosis and hypertrophy. The extreme stenosis was there from the very first; it was congenital. Nevertheless, from the beginning to a few days before the end, food doubtlessly passed through this extremely narrow channel from the stomach into the intestines—at least in such a degree as to enable the body to keep up a metabolic equilibrium. There was no loss of the original weight. Then there were passages of fæcal masses from the bowels, and calomel had always shown its unmistakable effect. Surely, contents of the stomach managed to get through the pylorus with a lumen of hardly one millimetre. It is a remarkable fact, but has illustrative parallels in the autopsies reported by Landerer and Maier. The following instance (Landerer) is very instructive. In a man of forty-five years, who died of marasmus, an enormous stomach was found, in which the lumen of the pylorus measured only two millimetres in diameter, with no hypertrophy of the walls. This man suffered from his infancy from nausea, bloatedness, and other dyspeptic symptoms. The stenosis in this case was apparently congenital; nevertheless, the owner of this exquisitely narrow pylorus managed to attain the age of forty-five years.

Turning to our case again, it would seem to me that the life history of this stomach could properly be divided into three phases first, the phase of simple insufficiency; then the phase of attempted compensation: and finally, the phase of atony and permanent gastrectasy. The stomach of this newborn, when filled for the first time to its full capacity, could, in the interval before the second feeding, empty only a part of its contents through the stenosed pylorus into the intestines. When the second feeding took place, there was still present in the stomach some of the food previously taken: the organ then became overdistended. But the increased distention of the muscular walls called forth, as usual, an increased contractility of its normal muscle fibres, and herewith a greater pressure of the walls of the stomach was exercised upon the contents, which were now driven out into the intestines in a somewhat greater proportion than in the former interval. Notwithstanding this greater removal, the balance remaining in the stomach was greater now than in the foregoing interval. After a few feedings, when through the accumulation of the several balances the stomach became extremely distended and the muscular fibres were incited to their utmost contraction, the high pressure which was now exerted upon the contents of the stomach became capable of overcoming the tonic contraction of the cardia, and the entire contents or most of them were now expelled through the œsophagus. After this forcible evacuation, the stomach probably assumed its original dimensions, and the circle could commence anew. The temporary distention of the stomach was not yet gastroectasy; the stomach walls still retained their full tonus, but there already existed a state of insufficiency—the stomach was unable to empty its contents entirely into the intestines. The body was under these circumstances insufficiently nourished, and though with the increased pressure within the stomach a greater transmission of food into the intestines took place, the amount was probably incongruent with the requirements of a body in its first growth. Herein lies the cause for the greediness which the child displayed in taking the nursing-bottle; and as for the constant crying of the child, there are still several other reasons. The overloaded stomach undoubtedly gave a sense of uneasiness; then the increased contractions of the stomach might cause some pain, and perhaps also the contractions of the hypertrophic pylorus caused special pain, and especially when there was a struggle between the antagonistic contractions of the stomach and of the pylorus. In adults we know that in stenosis of the pylorus the cardialgic pain is a predominant symptom. Greediness and restlessness have been present from the very beginning in many of the reported cases of congenital stenosis of the pylorus.

The constant overdistention of the stomach causes after a longer or shorter period a more or less pronounced degree of hypertrophy of the muscular sheath of the stomach.* When this is accomplished the stomach responds even to a moderate overdistention with an unnecessarily strong contraction, capable of throwing out the entire contents through the cardiac aperture, and this the more so when after repeated attacks the aperture becomes somewhat dilated. It is my belief that the appearance on the scene of the frequent attacks of vomiting immediately after drinking, without any other catarrhal symptoms, is a sign that a compensatory hypertrophy of the muscular tissue of the stomach had already taken place. In one of the cases recorded by Hirschsprung, the author hardly credits the statement of the parents that the child appeared to be perfectly well in the first ten days of its life. This, however, is apparently rather the rule. In most of the cases on record the frequent vomiting did not set in immediately after birth, but one or more weeks later, which fact finds its explanation, as I believe, in the assumption made above, that the frequent vomiting started with the development of the compensating hypertrophy of the stomach, which, of course, did not set in until some time after birth.

The pressure which the contraction of the hypertrophied muscular walls exerts upon the contents of the stomach affects not only the cardiac aperture, but also the aperture of the pylorus and the conditions of the fundus. In the former case the effect might be a favorable one; the increased pressure might help to dilate the stenosis just as it overcomes the tonic contraction of the cardia. Its effect upon the fundus, however, is decidedly an unfavorable one. The walls of this part of the stomach are less muscular and do not take part in the hypertrophy of the rest of the organ. When now the hypertrophied pyloric portion exerts a considerable pressure upon the contents, it drives a part of them into the unresisting fundus, with the result that this part becomes gradually more and more dilated. The evacuating power of the pyloric por-

tion does not empty all the contents, but rather a considerable portion remains in the fundus; this remaining portion of the contents becomes larger and larger, the larger the fundus is. Finally, the contraction of the hypertrophied portion becomes ineffective, or, what is still worse, this portion itself loses its contractility, the muscle fibres become degenerated through overexertion, assisted perhaps by the malnutrition, and then the final state of gastroectasy is reached.

Diagnosis.—The diagnosis of the last stage, of the permanent gastroectasy, offers no difficulty. The mere inspection reveals the contrast between the bulging of the upper part and the collapsed state of the lower part. Then the percussion of the stomach filled up with air or water, the palpation of the catheter within it, and the auscultation of the gurgling sound produced by the air blown into the partly filled stomach, as described above, will sufficiently demonstrate the presence of a gastroectasy. In the second stage we might rely upon the following symptoms: the change of the area of percussion with the degree of filling of the stomach, the appearance of peristaltic waves over the region of the stomach, the palpation of the contracted stomach in an empty stage. In both these stages, but especially in the stage of the compensatory hypertrophy, the frequent vomiting immediately after drinking, the absence of vomiting at any other time, the absence of bile from the vomit, and its non-catarrhal appearance, are symptoms quite characteristic of stenosis of the pylorus.

In the first stage we shall rarely be consulted, but if we see a child which is extremely restless and drinks greedily we ought to think of the possibility of a congenital stenosis of the pylorus, and our next step ought to be to introduce a catheter into the stomach and empty it two hours after feeding. If we then find in the stomach a noteworthy balance while the amount of the feeding was normal, we know that there is an insufficiency present and have to watch the further development. The introduction of a catheter for the sake of establishing the sufficiency or insufficiency ought to be done in all the stages of this disease and in all cases in which we find frequent vomiting.

Treatment.—In treating this affection we have to remember that there are cases on record in which the patients managed to live to a comparatively advanced age with a very narrow pylorus. But we should also remember that a piece of tenacious mucus, a large coagulum sticking in the pylorus, or a slight kink in it would suffice to make such a pylorus entirely impenetrable. We must also remember that the successful passage of food through such a pylorus largely depends upon the contractility of the stomach, and that an ectatic stomach does not contract and is besides liable to produce by its weight fatal kinks of the pylorus. The treatment of the first and the second stage consists mainly in two points: the proper regulation of the feeding and the frequent emptying and washing of the stomach. With regard to feeding, it would seem to me that at least in the first stage the amount given at one time should slightly overstep the capacity of the stomach. The distention which is caused by it will bring out a better contraction of the muscular tissue, which will not only drive more food into the intestines, but may also serve to a degree as a means of gradual dilatation of the stenosed pylorus. The emptying of the stomach, however, must be done quite frequently: the washing is under these circumstances a less important matter, and the emptying alone is such an easy procedure that it could be carried out after some practice by any member of the family. In the second stage only a small amount can be given, as larger ones would immediately be rejected by the stomach, but the feeding must be carried on very often, at least hourly. In the early period of this stage it is probably sufficient to empty and wash the stomach once a day, as the frequent vomiting acts partly as a safety valve against the overcrowding of the stomach. It should not be attempted to stop the vomiting by means of narcotics or bismuth. I have used a narcotic myself, and I see in Finkelstein's statement that Heubner also used it. However, I now think that narcotics are harmful, inasmuch as they paralyze the contractility of the stomach, which is the most indispensable factor in our struggle. Bismuth might entirely obliterate the small opening of the pylorus. For the same reason I believe that cow's milk should not be employed in these cases, as it forms large coagula in the stomach. Heubner's method of washing the stomach with one-half-per-cent. solution of Carlsbad salts should be employed. It will help to keep the narrow passage of the pylorus free from mucus. The tenacious mucus which was found in my case to stick within the pylorus might have been the cause of the absolute occlusion which was observed in the two days previous to the operation. Massage of the stomach in the direction from left to right should be practised, which might assist the stomach in emptying its contents into the intestines. A bandage around the stomach might also prove to be beneficial, but it ought to have a pad fitting and filling out the epigastrium and reaching to the navel, in order to exert an efficient pressure upon the stomach, which might prevent to a degree its extreme dilatation and help it at the same time in pressing its contents into the intestine.

That the rectum should be utilized for additional nutrition and that hydropathic and other measures to improve the general condition of the little patient should be employed are self-understood and do not require any particular discussion.

In the last two stages, besides all the measures mentioned above, there comes in addition the operative treatment into consideration. In adults the operative treatment for benign strictures of the pylorus is an established procedure, and, as is well known, furnishes quite favorable results. For the class of cases we are dealing with here, Schwyzer was the first one to discuss the advisability of surgical interference. He mentions Loretta's operation and gastro-enterostomy. Loretta's operation, or the digital divulsion of the pylorus, is apparently here out of question, especially when the lumen of the pylorus measures not even one millimetre in diameter. Gastro-enterostomy, however, is at present generally employed in cases of benign strictures of the pylorus in adults, and is, naturally enough, the operation which suggests itself for the relief from hypertrophic stenosis of the pylorus in infants. And here again, where the gain of time is surely a very important point, apparently Murphy's button deserves the preference over the anastomosis by suture. The operation in my case, the first one ever performed for the relief of congenital stenosis of the pylorus in infants, was done with the Murphy button and was not a success; this, however, was due only to the inadequate size of the button, which can be avoided in the future. Indeed, Dr. W. Meyer has now had small buttons made, which will probably not block the free passage in the jejunum of even very small infants, and he is of the opinion that the button ought to be given the preference over the anastomosis by the suture—in fact, over any other method.* It seems to me, however, that there are well-founded objections to the employment of a Murphy button in infants. In the first place, it is very probable that here the button will not pass off through the very narrow,

* Soon after the operation in my case Dr. I. Adler in New York met with a similar case, and here Dr. W. Meyer made the gastro-entero-anastomosis by suture. This child died a short time after the operation, but it was, as I understand, in a very debilitated state.

exceedingly contracted jejunum, but will rather enter into the stomach and remain there. In the second place, there comes up quite a serious question as to the future effectiveness of the small communication established by the small button between the stomach and the intestines. In a case of Czerny, in which the opening made at the operation measured three centimetres, it was found at the autopsy, five months later, that the opening was reduced to only eight millimetres. This occurred in an adult in whom the solid food taken might have had a dilating tendency upon the opening. What, then, will be the fate of the opening in the stomach of an infant, with its liquid food? And it would seem to me that the growth of the stomach and the body in general would rather exercise an obliterating tendency upon the artificial opening. We must also bear in mind that the motility of the stomach is arranged to propel the food in the direction toward the pylorus and not toward the places usually selected for the artificial opening, and that the peristaltic wave, instead of assisting in pressing the food through the artificial opening, will rapidly carry it away from there. These considerations, however, not only speak against the use of the Murphy button, but also make the advisability of the employment of gastro-enterostomy in infants altogether questionable.

It seems to me, therefore, that the typical pylorectomy (Billroth) is the ideal operation for the relief of the hypertrophic stenosis of the pylorus in infants. The objections against the use of this operation in the stenosis of the pylorus in adults arose mostly from its exclusive employment in malignant cases, in which the adhesions, etc., made it quite a difficult operation. It seems that even there we are now at a turning-point in its favor (Keen). In cases of benign stenosis in infants, the removal of the hypertrophied pylorus will re-establish normal conditions, provided the stomach does not lose its efficient motility. And here I would like to emphasize very strongly that any operation will hardly be a success if it is done when the state of gastro-ectasy has already been permanently established. There will be at this time quite a progressive state of marasmus, and the child will not stand any operation. The indication for the operation is already given in the second stage, when the empty stomach starts to show some degree of dilatation. And even without any dilatation, if, after evacuation and washing of the stomach for many days the child still continues either to vomit immediately after drinking or to retain a large part of the food for hours, while gaining very little in weight, then there is a proper indication for the operation. We must also bear in mind that such infants, even if we succeed in assisting them to bridge over the dangers of their early life, will in all probability be invalids all their life long—there will always be a misproportion between the stomach and pylorus, a gastric insufficiency with all its consequences upon body and mind! We should therefore not hesitate to operate, and should operate early; the operation should be performed while the stomach yet shows distinct and strong peristaltic movements. When the operation is done early the child will survive it; and when the hypertrophied pylorus is removed while the hypertrophied pyloric portion of the stomach is still capable of efficient activity, the motile function of the stomach will be restored in an ideal way.

There are at present on record 22 cases of congenital hypertrophic stenosis of the pylorus in infants, in which the diagnosis was established or verified by autopsies. They are as follows: Williamson[5] (1841), 1; Davoski[7] (1842), 1; Hirschsprung[6] (1888), 2; Peden[14] (1889), 1; Henschel[4] (1891), 2; Pitt[15] (1892), 1; Finkelstein[2] (1896), 1; Gran[10] (1896), 3; De Bruin Kops[16] (1896), 1; Thomson[17] (1896), 2; and (1897), 1; Schwyzer[18] (1896), 1; and (1897), 1; Soltau Fenwick[19] (1897), 1; Ashby[1] (1897), 2; Rolleston and Haynes (1898), 1. Finkelstein includes also a case of atresia of the pylorus reported by Loesschaft;[20] the atresia in this case, however, was within the duodenum, about six millimetres away from the pyloric valve. The degree of the stenosis given in these cases shows a considerable variation between the passability of a "fine probe," a "middle-sized probe," or even the "little finger."

R. Maier divides the cases of congenital stenosis of the pylorus observed by Landerer and by himself in adults into simple and complicated stenosis, according to the absence or presence of hypertrophy of the pylorus, and states that of their thirty-one cases eight were of the uncomplicated variety. It is a noteworthy fact that in the twenty-two cases of congenital stenosis of the pylorus in infants there is not one of the simple variety; all were more or less distinctly complicated by hypertrophy. This would seem to permit the interpretation that it is the rigid hypertrophy which makes the stenosis a fatal anomaly, while a simple congenital narrowness of the pylorus is distensible enough to be overcome by the natural or acquired forces of the stomach, and it is therefore not fatal. We can thus understand how an individual with a pylorus of only two millimetres in diameter (first case of Landerer) could attain an age of forty-five years. As to the hypertrophy in the complicated cases of Maier and Landerer, there is nothing in the way of assuming that it was not congenital, but acquired in the struggle of many years.

In this connection it deserves further to be pointed out that in many of the cases of hypertrophic stenosis in infants it is distinctly stated that longitudinal folds were present in the narrow lumen of the pylorus, which would seem to indicate that without the constricting effect of the surrounding hypertrophied tissue the mucous membrane alone would present a lumen larger than the actual diameter, though probably still narrower than in a normal pylorus.

As to the nature of the hypertrophy, the first writers on this subject, Williamson as well as Davoski, have described the conditions they found as hypertrophy of the submucous tissue. But this happened at such an early period in the microscopic era that we might yet, with Thomson, believe "that it was the muscular layer really which was affected." In our own case, however, according to the description of Dr. Prudden, the fibrous hyperplasia of the submucosa had a prominent share in the production of the thickening of the pyloric wall. Other writers, too, expressly report that all the layers of the wall evenly shared in the hypertrophy; for instance, Hirschsprung's first case, and Thomson himself reports in his third case that "here submucous connective tissue was greatly increased in amount." It seems to me, therefore, that Thomson goes too far when he asserts that "the whole narrowing of the passage seemed to be due to compression by the hypertrophied muscle," or that "in all the cases . . . the thickening of the pylorus was due mainly to great hypertrophy of the circular layer of muscular fibres." With regard to the participation of the muscle fibres in the hypertrophy, R. Maier divides into two forms the cases of complicated stenosis observed by Landerer and by himself. In the first form the duodenal end of the pylorus terminated in the shape of the vaginal portion of the uterus, while the gastric end appeared to be funnel shaped; in this form, Maier says, the hypertrophy is made up by the longitudinal muscle fibres. In the second form the pylorus appeared to be like an intermediate piece (Zwischenstück) between the stomach and duodenum, and consisted of a hyperplasia of the circular muscular fibres of the pyloric valve. The description of most of the cases of

the hypertrophic stenosis in infants seems to fit the first form of Maier; there is the funnel shape in one end of the pylorus and at the other end the shape of the vaginal portion of the uterus. Nevertheless, there is quite a general agreement among most of the writers that the hypertrophy is made up by the circular fibres. This seems to be the rule, to which there are so far only two exceptions—the case of Finkelstein and the second case of Hirschsprung. There is apparently room enough left for a further study of the anatomy of our cases.

As to the etiology of these cases, there is at present only the one hypothesis, which was put forward by Thomson and found favor with some of the subsequent writers. Thomson's theory is as follows: The primary lesion is "a functional disorder of the nerves of the stomach and pylorus, leading to ill-co-ordinated and therefore antagonistic action of their muscular arrangement." The fault in the nervous mechanism "is probably due in some way to delayed or imperfect development." "The antagonistic spasm of the pylorus and stomach must be connected with the passage downward of the large quantity of liquor amnii which the fœtus is believed to swallow during the later months of intra-uterine life." The muscular hypertrophy of the walls of the pylorus and stomach is "merely a secondary occurrence, being obviously due to abnormally increased activity, and this must have existed for a considerable period of the intra-uterine life."* This theory, I must confess, does not appeal to me as a very plausible one. It is apparently based upon the presupposition that the hypertrophy is confined to the muscular fibres, and that muscular hypertrophy can be due only to some sort of overaction. We have, however, already demonstrated above that in many of the cases the submucosa had a prominent share in the formation of the hypertrophy, and that in all the cases there was some degree of hyperplasia of the submucous tissue. A disorder of the nervous mechanism would not account for the hypertrophy of the connective tissues. Moreover, the assumption that a tonic contraction of the pylorus would lead to a hypertrophy of its own muscular coat seems to me to be without any foundation. A stricture of any kind leads to a muscular hypertrophy of the parts lying in front of it, but does not cause a muscular hypertrophy in the stenosed region itself. Pyloro-spasm in adults does not lead to hypertrophy of the pylorus, and cardio-spasm does not lead to muscular thickening of the cardia. Cicatricial stenoses in any of the muscular tubes of the body do not lead to muscular hypertrophy within the stricture. And even of the cases of congenital hydronephrosis with greatly hypertrophied bladder, which are quoted by Thomson as a parallel to our cases, the author himself says that "no organic obstruction exists to the passage of urine." A spasm of the constrictor vesicæ might lead to the hypertrophy of the detrusor, but not to that of the constrictor itself. Furthermore, admitted even that the overaction of the pylorus could lead to its thickening, how could the overaction cause a considerable elongation of the pylorus, which is observed in nearly all the cases? The thickening of the walls of the pyloric portion of the stomach is generally admitted to be an acquired condition, which, by the way, was not present in some of the cases. It seems to me that, by accepting the congenital muscular hypertrophy of the pylorus, not as a secondary occurrence due to some overaction, but as a primary lesion, simply as an embryological malformation, we make a much less risky hypothesis than that made by Thomson, which assumes, without safe precedent, an embryological disorder in the nervous mechanism of the pylorus, of which we know so little in the fully grown animal. And, after all, it is not simply a hypertrophy of the muscular tissue; it is the hypertrophy of all the tissues of the pyloric valve—it is, so to say, the hypertrophy of an organ. The pyloric valve has variable dimensions in different individuals, and it might occur that in one or the other individual it attained such a size as to be pathological in a teleological sense. The structure of the hypertrophied pylorus reminds one very much of the normal structure of the ileo-cæcal valve, in which, too, the longitudinal muscularis does not participate in the formation of the fold. In this connection it is worthy of mention that Brandt[21] described a case in which there was a hypertrophic stenosis of the pylorus as well as of the valve.

* Thomson was so sure of the correctness of his theory that he termed the condition "congenital gastric spasm." It is, however, always safer to derive a title from facts rather than from theories, which are always disputable.

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IS RETROFLEXION OF THE UTERUS A DISEASE?

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If you were to attend a dinner in these times without appearing in evening clothes, the host, if he were your friend, would advise you to leave, in order to prevent the other guests ridiculing or pitying your poverty. If you appeared in a gynæcological society to-day and declared that the doctrine of retroflexions is nothing but a conventional humbug, you would be in the same position as the unfortunate man without his dress suit. You would be out of place in such a meeting, for in gynæcology there is also an aristocracy with fashionable ideas and dominating doctrines, to sin against which would be very much worse than to castrate all round without distinction. From a psychological point of view this is not surprising. Take from the gynæcologists their retroflexions, and you at once cut off a great part of their income. And when the money bag begins to decrease, the *Gemüthlichkeit* disappears and the critic is heard instead. Add to this the fascinatingly ingenious operations, so many of which are performed easily, elegantly, and at lightning speed. You will then understand why many admiring onlookers, bewitched by our magnificent art, are prone to forget that operations should not be per-

formed for their entertainment nor for the mere sake of operating, but for the benefit of the patient. Take, for instance, a simple operation which produces a change in the position of the uterus. All will agree to this operation who thereby increase their income, and who therefore believe gladly what is good for them—namely, the doctrine of school. But the doctrines of school are not always to be relied upon. We improve by observations made during our professional career.

If you wish my opinion on retroflexion, I will give it briefly in the following; for to dilate upon or refute what has been said on retroflexion would be a life-long task and a thankless one at best. I was fortunate enough to find the dominating views on this subject expressed in the "Transactions" of the German Gynæcological Congress, Leipzig, 1897. Those conclusions were the finding of a majority, although not a result of sound reasoning. It is true, indeed, that the opinions which have been brought before the profession at large are slightly mellowed; and occasionally a "still, small voice" is heard crying "Stop!" But, alas! the voice, even if it be heard, is unheeded, and the better views are disregarded, for they are not fashionable.

As we Germans are accustomed to consider everything from the time of Adam—not from Adams, the inventor of the first operations for deviations, but from the husband of Eve—I will observe briefly that the discussion of the value and importance of retroflexion is as old as gynæcology itself. Especially at the beginning of this century, in the Paris Academy of Medicine, absolutely opposite opinions were heard. Some agreed to one view, others to another. Regarding my own views, permit me to say that they are not new indeed, they are nothing else than stories of olden times.

Now as to the subject itself, and, firstly, the symptomatology. To-day all make a distinction between cases of simple retrodeviation and such as are complicated by inflammation of the adnexa. Even the adherents of the opinion that retroflexion is a disease admit that nearly half of all uncomplicated cases of retroversio-flexio show no symptoms, and especially that local symptoms in the pelvis may be absent. But, they say, if the local symptoms do not exist, there may still be reflex symptoms, and we, who are so stupid as not to believe in retroflexion, overlook the cause of these remote symptoms. Again, it has been remarked that retrodeviation sometimes remains symptomless for years, but later on may begin to cause symptoms. Why should we be called stupid? One speaker at the congress distinctly said that it is a logical mistake to make the treatment of a disease, known to exist, dependent upon the gravity or upon the presence of symptoms. If symptoms are produced by retroflexion, they are usually as follows: backaches, headaches, gastric symptoms, bearing-down feeling in the lower part of the abdomen, a diminution of walking-power, depression of mind, a host of nervous symptoms, constipation, dysmenorrhœa, painful and frequent micturition; and, in retroflexion of long standing, hemorrhages in the form of too frequent or too profuse menstruation; while in acute puerperal retroflexion there is a typical and prolonged menstruation. A less frequent result is ejaculation of the sperma, not into, but out of the vagina, sterility, abortion, and recurring premature labor. As anatomical changes are mentioned: catarrh of the cervix, hyperplastic endometritis, hyperplasia of the entire organ—that is, chronic metritis, which may be only partial—thickening of the vaginal portion, with large ectropium, oöphoritis, perimetritis. Well! well!

One author goes still further, and assumes that by the malposition there is not only produced a tendency to inflammatory processes around the uterus, but that the origin of ovarian tumors must be referred to the same cause. He argues as follows: Disturbances of the circulation and inflammatory troubles in the ovaries predispose to the formation of tumors. Retrodeviation produces disturbances of the circulation in the ovaries; therefore retroflexion produces ovarian tumors. Q. E. D.!

To be complete, I must add the anatomical changes in other organs produced by the retroflexion: Follicular catarrh of the rectum, cystitis, catarrhs of the upper urinary passages, bending of the uterus. When one enumerates all these symptoms attributed to retroflexion, one must admit it is a dreadful disease, producing in poor suffering women not only disagreeable symptoms, but also all possible conditions from albuminuria to insanity!

Suppose, then, that even once the connection of all these symptoms with retrodeviation has been proven. And how is the connection attempted to be proved? By the success of treatment. In what does the therapy consist? In the applying of one or all the methods invented up to the present day, from the pessary to the bloody operations. But one must not argue so, for in the subjects we are called upon to treat there are certain other substances in addition to muscular and cellular tissue which may be influenced by any therapy: *e.g.*, that white and gray substance which anatomists call nerves and central nervous system. Shall I remind you of those wonder doctors who call themselves homœopaths and cure with little sugar balls all possible and impossible aches? Shall I recall Lourdes or all the fashionable springs and miracle-working waters? Shall I also remind you that we have a threefold kind of hypnotism which we may conveniently classify according to its density? First, the aerial. This is the more common and is usually produced by a laying on of hands—by simple power of authority. Next, there is the fluid, by the giving of medicinal drops, drinks, and waters. And, finally, there is the solid form of hypnotism, *e.g.*, the application of pessaries and even of the knife. Do you not believe that Baker Brown, when he cut away the clitoris, even in cases of retroflexion, did not relieve many women of their troubles? And what shall be said about those cases in which pessaries have been put in or an operation has been performed, and the uterus has remained in its false position while all symptoms have nevertheless disappeared? How will you explain those cases in which, either by a pessary or by an operation, the malposition is redressed and yet all the troubles remain? Yes, in these cases all gynæcologists conclude that such are purely of nervous origin, and they are transferred to the department for incurables or handed over to the neurologists, who may cure them—if they can.

But a knowledge of the value of these processes cannot come from general philosophical considerations. It is to be derived only from the investigation of the individual case. While, for example, a discussion between two advocates on some point of law is, from the abstract nature of the case, inevitably interminable, the scientist, arguing from the single, concrete individual, will arrive—perhaps not quickly, but, without doubt, surely—at a definite conclusion. If, therefore, we take those authorities as our guides, who do not always speak deductively of groups, but who in all difficulties and complications consider each individual case on its merits and with unbiassed minds draw general conclusions from these collected single cases, we get quite another side of the picture and a very different view of these processes. Such authorities to-day are Leopold Landau, Theilhaber, Freudenberg, and very few others. Their views I will now give in the fewest words possible.

Uncomplicated retroflexion of the uterus is in itself no disease. It may possibly produce trouble during pregnancy, if the development of the pregnant womb does not, as usually happens in the great majority of cases, lift the organ out of the pelvis. If it remains incarcerated, there is material trouble in consequence of this imprisonment; viz., the well-known collection of symptoms included in the expression "incarceration of the pregnant uterus," which naturally call for treatment.

The mobile retroflexion may be congenital, and in that case it has no importance at all; or it may be acquired. Then it produces trouble, but only one symptom of a more general disease—of enteroptosis. But in these cases the gastroptosis, the coloptosis, the nephroptosis, and the hepatoptosis, the descent of the uterus and of the vagina, the abdominal hernia, etc., have each and all the same value.

Here we have a general relaxation of all organs covered by the peritoneum, and here, if our treatment is to be beneficial, we must restore the elasticity and the tension of the peritoneum and the abdominal walls, or we must repair them orthopædically by bands, pessaries, etc.

Fixed retroflexion is never a disease *per se*. It is only a symptom of existing pelvic peritonitis or pelvic cellulitis. Here it is not only a sign but an indicator, and for that reason we must take all pains to find it out. All the symptoms arise from the perimetritis or the inflammatory changes of the adnexa, the peritoneum, or the pelvic cellular tissue. Therefore, to describe the correct symptomatology and therapy of the fixed retroflexion of the womb would be nothing more or less than to describe the symptomatology and therapy of inflammation of all the pelvic organs, the pelvic cellular tissue and peritoneum included.

And so we have arrived at the important point which is the keynote of the proper understanding of retroflexion, and, therefore, retroflexion of the uterus requires observation and treatment only when it is associated with anatomical changes of other organs and tissues.

How, then, is it explained that so many troubles are referred to retrodeviation? Retroflexion is very frequent; but so are many other diseases. And when a woman refers her troubles to the pelvis and consults a gynæcologist, he should not forget or overlook the fact that she is liable to suffer from other than gynæcological diseases. If he examined the urine of patients more frequently, he would find evidence of cystitis and nephritis in a surprising number. If he searched for nervous symptoms, he would find nervous and hysterical patients. Were he to auscultate the heart, he would discover a number of heart murmurs. Nor should he forget that in the abdomen there are a stomach and an intestinal canal, both of which are exposed to so many insults and to functional and mechanical troubles, such as constipation and ulcer of the stomach. Let him remember the formation of stones in the kidneys and the gall bladder, so frequently found in females. Let him make palpation not only of the genitalia, but of the whole abdomen in women, who have become for some reason emaciated, and who in consequence of frequent pregnancies have lost the elasticity of the abdominal walls. And last, but not least, let him learn to make a careful examination of the genitalia and declare justly what exists. Then we shall guard ourselves and our patients from error, and we shall not endeavor vainly to obtain therapeutical results by wrong methods, while neglecting the proper means which would have the desired effect.

At present, only one word in regard to the therapeutical connection of retroflexion of the uterus and diseased appendages.

We can influence inflammatory processes of the other pelvic organs by treatment of the uterus, as little or as much as we can influence troubles in the brain by the application of blisters to the scalp. Indeed, we observe the brain infected by a wound of the scalp as often as the adnexa from the uterus. We must come directly to the disease, and treat it and not the symptoms. But while at present I will not speak on the treatment of the inflamed adnexa, a hint may not be out of place.

Nearly all genital diseases are systemic. One organ may be specially affected in a greater or less degree, but disease exists in them all to some extent. This is due to the intimate anatomical relation of the genital organs. Lymphatics and blood-vessels, by which the infection is propagated, are the same for all, and all the internal genitalia are covered by the peritoneum as a common protection. In this way the germs of disease are carried about and in most cases are not confined to one organ. The entrance of the offending agent may be ascending, as in the case of the gonococci and staphylococci; or descending, as, for instance, in the intestinal bacteria. If to these you add the tubercle bacillus, you will admit there is a common death for all the genitalia at once.

Therefore, if you would try to cure retroflexion alone in a case of pelvic inflammation, you would do the same as if you would search for a remedy against the bronchial sounds in a case of tuberculosis. Only that man will be right who endeavors to cure the tuberculosis without heeding the symptoms.

In conclusion, I would add that unless we seek diligently for associated troubles, we are not doing our full duty either to our patients or to ourselves.

THE VALUE OF ELECTROLYSIS IN THE TREATMENT OF URETHRITIS CHRONICA GLANDULARIS.

By GEORGE THEODORE MUNDORFF, M.D.,

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The object of the present paper is to call attention to the results following the employment of electricity in the treatment of chronic glandular urethritis. Some observers, it is true, have already practised this method of attacking diseased urethral glands, but none, so far as the writer knows, has published desirable and complete reports of his observations. In the past year, during the writer's connection with the genito-urinary surgical clinic of Dr. H. Wossidlo, in Berlin, a series of experiments was instituted for the purpose of determining the true value of electrolysis in the treatment of this particular pathological condition, and I now desire to present a somewhat detailed account of the results obtained.

Mention has been made of a special form of chronic urethritis. It may perhaps not be unacceptable to describe briefly what is understood by chronic glandular urethritis. Oberlaender, in his work, "Lehrbuch der Urethroscopie," recognizes two varieties of chronic urethritis, and names them respectively "urethritis chronica infiltrativa" and "urethritis chronica glandularis." In the first-named form the pathology consists in a chronic inflammation involving the urethral mucosa pure and simple, while in the latter form the inflammatory process is limited chiefly to the minute mucous glands scattered over the mucous membrane lining the pars cavernosa urethræ. By employing the urethroscope, these two conditions may be readily differentiated, as follows: In the infiltrated form the mucosa is found to be the seat of a chronic inflammation. The small glands distributed over its surface need not be involved in this inflammatory process at all, but may remain normal. In the glandular form we have to do with a condition in which the mucous

membrane around the orifices of Littré's glands and the crypts of Morgagni is inflamed and swollen. Occasionally the ducts of these glands become occluded by plugs of secretion, converting the little follicles into small cysts. The guilty factor in many cases of intractable gleet is simply the unrecognized existence of one or more diseased urethral glands.[1]

Recognizing a condition in which the glands are simply involved in the inflammatory process, it is but natural that one would desire to treat them alone and not expose normal tissue to unnecessary irritation. Various methods to apply local treatment have been advocated. Some authorities have recommended the use of chemical caustics, others have claimed that good results follow the intraglandular injections of therapeutical agents, while a few have lauded the employment of the galvanic cautery. It was Oberlaender[2] who, in 1889, first suggested electricity to destroy chronic inflamed urethral glands. For this purpose, he constructed a unique contrivance in connection with his urethral endoscope. Notwithstanding this, in 1892[3] and in 1894[4] this authority dismisses the subject of intraglandular electrolysis with the remark that by its use cure is retarded four or five weeks. In 1893, Kollman[5] introduced a set of instruments including an electric sound for intra-urethral work. This sound consists of a slender platinum rod, about six inches in length, and, with the exception of its point, is insulated by means of an India-rubber covering. Two forms are made, the difference existing in the distal extremity. For the purpose of destroying Morgagni's crypts, a sound with a blunt end is employed, while in the case of diseased Littré's glands a sharp-pointed one is used. The writer has found it rarely necessary to employ the blunt sound, the sharp end of the other answering for both.

In the opinion of the writer, notwithstanding the unfavorable result in a few cases, electrolysis is a valuable adjunct to the list (which perhaps is already too long) of remedies for the treatment of the glandular form of chronic urethritis. This therapeutical agent is certainly more within the control of the physician than any other form of treatment, and, if its application be cautiously performed, can result in no harm. For weeks one may inject solutions of nitrate of silver or other astringents into the urethra, and still produce no retarding effect upon the progress of the disease. The internal administration of drugs has proved of little or no benefit. The use of the galvanic cautery is dangerous, requires a local anæsthetic, and causes unnecessary destruction of tissue. In the case of electrolysis, the operation is painless and does not require any topical anæsthesia. Occasionally a patient complains of a slight burning sensation, but it is certainly not more than that often following urethral injection of a mild solution of nitrate of silver. The method pursued is as follows:

A Kollman electric sound is affixed to the negative pole of an ordinary galvanic battery, while a suitable sponge electrode is attached to the positive pole. After a careful endoscopic examination of the urethra, the number and location of the diseased glands are noted. It is beside the purpose here to examine the question as to the relative merits of the various forms of urethroscope now in use, but a word or two may be said as to the necessity of performing urethroscopy in all cases of urethral disease—excluding, of course, acute urethritis. The value of this method of examination cannot be too highly estimated. It should be invariably done, for by no other means can one gain an accurate knowledge of the conditions present. The practice of trying to elicit localized points of tenderness by means of bougies certainly cannot compete with a method of examination by which one sees directly what the trouble is and where it lies. In the experiments upon which this report is based, the Nitze-Oberlaender urethroscope has proven by far the more serviceable one, both in illumination and in convenience of handling. Owing to the direct light obtained through the agency of this endoscope, the minute glandular openings are more readily seen and the condition of the glands themselves is better appreciated. These certainly are facts having much weight in the proper treatment of a urethral disease. Placing the question of illumination aside, the unique construction of this apparatus allows one better to employ his intra-urethral instruments.

It is best for the physician to stand to the right of the patient (the patient being seated in a reclining-chair), for reason that the steps necessary to the operation can be followed more conveniently. The moistened sponge electrode having been applied to either the perineum or abdomen—preferably to the latter, as here it does not hinder the operator in his work—the endoscopic tube is introduced to the bulbous portion of the urethra, and then slowly withdrawn until a diseased glandular opening comes into view. The tube is now held steadily with the left hand, the sound is thrust directly into the opening of the duct, and the electric circuit is closed. In a few seconds the following phenomenon is observed, showing that the electrolytic action is in play. A ring of grayish-white foam is seen to form around the electrode, somewhat obscuring the field of operation. At this stage it is best to disconnect the current, remove the electric needle, and then, by means of a cotton swab, dry the mucous membrane. The needle is not to be withdrawn from the tissues until the current has been disconnected at the battery, thereby avoiding a disagreeable shock. The operation can then be continued. Regarding the strength of the current and the duration of its application, Kollman advises an amperage of four or five milliamperes, and a *séance* lasting three minutes for each gland. In the cases reported herewith, the writer found it hardly necessary to demand more than twenty seconds thoroughly to destroy a gland. Still, this question is largely one of experience, and dependent upon various circumstances, such as individual endurance, the condition of the urethra, etc. If electrolysis be continued too long, more destruction is produced than is really necessary for the complete obliteration of the gland and there is more likelihood of the formation of dense cicatrical tissue. Case II. sufficiently proves the danger of too long an application. In this case a firm stricture developed, which demanded energetic treatment for its dissolution. To destroy more than three glands at one sitting is not recommended, nor is it advised to repeat the operative procedure in less than ten days, for the reaction excited is by no means a slight one. Two or three injections with some non-irritating solution will assist in reducing the inflammation. If the reaction be in any way severe, which event is revealed by an increased purulent urethral discharge, anterior irrigations with a solution of silver nitrate (1 in 1,500 to 1 in 1,000) should be made every two days until the discharge diminishes. Of course, during this period—which may extend over four weeks—electric treatment is absolutely contraindicated. In the cases accompanying this report, no medication other than the injection of cold distilled water was employed from the beginning of this particular form of treatment to the discharge of the patient.

[1] Wossidlo: "Practicable Urethroscopy," MEDICAL RECORD, September 7, 1895.
[2] "Lehrbuch der Urethroscopie."
[3] Archiv für Dermatologie und Syphilis, vol. iii.
[4] "Die chronischen Erkrankungen der männlichen Harnröhre."
[5] "Die neuesten Verbesserungen der elektro-urethroskopischen Apparate," Vienna, and "Annales des Maladies des Organes génito-urinaires," 1894.

This precaution was taken in order to avoid the possibility of assigning beneficial results—if there were any—to the electric current, when the real cause might lie in another direction. Electric interference might prove more efficient, however, if from its institution it were combined with occasional injections of a mild astringent solution. There being in the majority of cases of chronic glandular urethritis an accompanying periglandular infiltration, it may be necessary to institute a course of treatment by dilatations previous to destroying diseased urethral glands by electrolysis. And in those cases in which the urethroscope shows dense cicatrization in the neighborhood of obliterated glands due to the action of the electric current, subsequent dilatation is indicated. In connection with these gradual dilatations, urethral injections are to be made every other day. These indications will be summed up at the end of this article.

The cases reported herewith were cases of true chronic urethritis due to the presence of the gonococcus of Neisser. In one or two cases this bacterium was not discovered, although examinations of the discharge issuing from the meatus, of the secretion obtained from several diseased urethral glands, and of the shreds floating in the urine, were repeatedly made. Still, it is quite possible that the specific germ was present in these cases and the underlying cause of the chronic urethral inflammation. Of the following seventeen cases, twelve occurred in polyclinical practice and five were under private care.

Case I.—P. R——, aged twenty-six. First attack of gonorrhœa in 1889. Second attack in 1893. Both attacks treated with urethral injections. Applied for treatment, December 7, 1896, complaining of a urethral discharge in the morning and the continual presence of shreds in the urine. Urethroscopy revealed glandular and periglandular infiltrations. Treatment: anterior dilatations every ten days, and urethral injections of nitrate of silver, 1 in 1,000, every two days. The conditions remained the same until May 11, 1897, when three urethral glands were destroyed through the agency of the electric current. Reaction was severe. Anterior irrigations with distilled water. Patient irregular in attendance. On July 7th, three more glands destroyed. Discharge diminishing. Urine clear. August 11th, two remaining diseased glands destroyed. Discharge ceased. Urine clear. Patient has been now six months under observation, and during this time all signs of urethral disease have remained absent. Cure.

Case II.—H. R——, aged twenty-nine. First gonorrhœa in 1891, second attack in 1892, and third in 1894. Applied for treatment, December 1, 1896, complaining of all the symptoms of "gleet." Urethroscopy revealed urethritis chronica infiltrativa et glandularis. Treatment: injections of silver nitrate every two days, and anterior and posterior dilatations every ten days. No favorable progress. September 3, 1897, four glands destroyed. Slight reaction. Injections of distilled water. September 28th, three glands destroyed. Severe reaction. October 26th, a tight stricture diagnosed. Upon the patient's application for treatment in December, and during the whole period of attendance at this clinic, no stricture was ever present. This stenosis being regarded as one probably due to a very much swollen mucous membrane, it was decided to wait for further developments. During this time, distilled water injections. January 1, 1898, urethroscopy revealed a tight organic stricture, made up wholly of the dense cicatrices of destroyed glands. Regular dilatations every eight or ten days, and silver-nitrate injections. February 15th, patient still under observation. Stricture undergoing resolution. Symptoms of chronic urethritis still present Failure.

It is plainly evident that this stricture developed in consequence of a too energetic electrolytic treatment. In this case an amperage of eight milliamperes was used, and the electric current was permitted to act for about thirty or forty seconds for each gland. The reaction was severe.

Case III.—B——, aged twenty-seven. Contracted gonorrhœa in August, 1896. Applied for treatment, December, 1896, and gave evidence of a chronic urethritis. Urethroscopy revealed urethritis chronica infiltrativa et glandularis. After the regular anterior and posterior dilatation treatment had been pursued for one year, no favorable result being observed, it was decided to try electrolysis. December 1, 1897, one gland destroyed. Moderate reaction. Distilled-water irrigations. December 15th, the remaining three diseased glands destroyed. Violent reaction. Discharge very profuse; shreds increased in number. January 30, 1898, changed treatment. Failure.

Case IV.—H. R——, aged twenty-two. First gonorrhœa in 1895. Second attack six weeks ago. Applied for treatment, May 15, 1897. Urethroscopy revealed urethritis subacuta glandularis. Janet treatment pursued. August 1, the discharge still continued. August 9th, two glands destroyed. No marked reaction. Irrigations of distilled water. August 20th, one gland destroyed. No discharge; clear urine. Two months later, discharged cured. Cure.

Case V.—J. D——, aged twenty-seven. Contracted his first urethritis in April, 1897. Applied for treatment in August, 1897. Urethroscopy revealed urethritis subacuta glandularis. Treatment, daily injections of a two and one-half to three per cent. solution of argonin. No favorable progress after several weeks of this treatment. October 11th, two glands destroyed. Moderate reaction. Injections of distilled water. In a few days, morning discharge ceased, and had not returned at the time of the patient's discharge, November 2d. Cure.

Case VI.—A. K——, aged twenty-nine. First gonorrhœa in 1896. Second attack six weeks ago. Applied for treatment, August, 1897. Urethroscopy revealed urethritis chronica glandularis. Regular dilatation treatment was instituted and followed until October 10th. No favorable result. On this day two glands destroyed. Slight reaction. Discharge diminishing. Distilled-water injections. October 20th, six glands destroyed. The following day, remarkably enough, there was absolutely no reaction. Discharge ceased. Patient discharged, December 1st. Cure.

Case VII.—A. M——, aged twenty-seven. First gonorrhœa in August, 1896. The following month, gonorrhœal arthritis. Applied for treatment, August, 1897, and gave a history of "gleet." Urethroscopy revealed urethritis chronica glandularis. Regular dilatation treatment until September 1st. September 2d, owing to the fact that patient showed absolutely no favorable progress, two glands were destroyed. Slight reaction. Distilled-water injections. In a few days discharge ceased. Kept under observation for three weeks and then discharged cured. (In the early part of October the patient returned to the clinic with an acute gonorrhœa.)

Case VIII.—H. H——, aged thirty-one. Applied for treatment, August 31, 1897, and gave the following history. Six months ago contracted his first gonorrhœa. Was treated with urethral injections and the regular introduction of bougies. Urethroscopy revealed urethritis chronica glandularis. The following day, one gland destroyed. Slight reaction. The discharge then ceased. During the next three or four weeks, absolutely no discharge and the urine remained clear of shreds. About the latter part of Sep-

tember, urine again contained shreds and patient complained of a urethral discharge. Urethroscopy revealed six diseased glands. (In the first urethroscopy but one diseased gland was discovered.) September 29th, six glands destroyed. Severe reaction and very profuse discharge. Urine contained numerous shreds. Distilled-water injections. No improvement being noticed, treatment was changed, October 22d, to the regular dilatation treatment. Failure.

Case IX.—A. K——, aged twenty-nine. Applied for treatment, November, 1897, and gave a history of acquiring his first attack of urethritis six weeks ago. Urethroscopy revealed urethritis chronica glandularis. November 8th, two glands destroyed. Slight reaction. Discharge diminishing. Distilled water injections. November 20th, six remaining glands destroyed. Slight reaction, followed by clear urine and disappearance of discharge. Patient discharged cured six weeks later. Cure.

Case X.—T. V——, aged twenty-six. Applied for treatment, January 6, 1898, and gave history of two attacks of gonorrhœa—one in 1891, the other in 1895. Had all the symptoms of "gleet." Urethroscopy revealed a urethritis chronica glandularis. January 12th, two glands destroyed. No reaction. Disappearance of all symptoms of chronic urethritis. Patient discharged cured two weeks later. Cure.

Case XI.—E. S——, aged twenty-nine. Applied for treatment, November 11, 1897. Patient acknowledged three or four attacks of gonorrhœa and having undergone treatment for syphilis. Last attack of urethritis six months ago. Urethroscopy revealed urethritis chronica infiltrativa et glandularis. November 13th, one gland destroyed. Violent discharge and severe reaction. Notwithstanding two weeks of daily urethral injections of distilled water, discharge continued to be profuse. The treatment changed to injections of protargol. Failure.

Case XII.—P——, aged twenty-five. Applied for treatment, January 5, 1897, and gave a history of two attacks of urethritis—one a year ago, the other six months later. Patient complained of symptoms of "gleet." Urethroscopy revealed urethritis chronica glandularis with extensive periglandular infiltrations. The regular dilatation treatment followed for three weeks. On the 20th, three glands destroyed. Discharge diminished and urine became clearer. A week later, dilatation treatment again begun and continued until the middle part of August. Highest dilatation, 42. On August 31st, four glands destroyed. Slight reaction. Injections of aqua destillata. On the 28th of the following month, three glands destroyed. No reaction, no discharge, and no shreds in urine. Patient kept under observation for six weeks and discharged cured on November 25th. Cure.

Private Patients.—Case XIII.—W. S——, aged thirty. Applied for treatment, July 8, 1894. Gonorrhœa a year ago, followed by several relapses. Complained now of symptoms of "gleet." Urethroscopy revealed urethritis chronica infiltrativa et glandularis. Dilatation treatment instituted. On November 22d, several (number not noted) glands destroyed. Discharge ceased and shreds in urine disappeared. Patient discharged cured, December 30th. Cure.

Case XIV.—B. D——, applied for treatment, February 2, 1895. First attack of gonorrhœa in April, 1894. Treated with urethral injections and the regular introduction of sounds. Complained of discharge from urethra and shreds in urine. Urethroscopy revealed urethritis chronica infiltrativa et glandularis. Regular dilatation treatment instituted and followed until April 2d. Several glands destroyed. Profuse suppuration. Discharge did not diminish, notwithstanding all methods of treatment to check it. Treatment changed to Janet's irrigations with permanganate of potassium. Failure.

Case XV.—X. S——. Applied for treatment on June 20, 1897, and gave a history of three attacks of gonorrhœa. First attack in 1892; last attack in 1894. Complained of symptoms of "gleet." Urethroscopy revealed urethritis chronica infiltrativa et glandularis. For five months patient received regular dilatation treatment, but without success. November 14th, two glands of Morgagni destroyed. No reaction, but the discharge did not cease. Several weeks later, the dilatation treatment again begun and followed. Failure.

Case XVI.—Von S——. Applied for treatment, July 17, 1897, and gave a history of suffering from chronic urethritis for one year. Urethroscopy revealed urethritis chronica infiltrativa et glandularis. Regular dilatation treatment instituted and followed until January 16, 1898. Three glands destroyed. No reaction. Discharge diminishing. Injections with distilled water. January 26th, three glands destroyed. No reaction, discharge ceased, and shreds in urine absent. Patient discharged cured, February 2d. Cure.

Case XVII.—L. M——. Applied for treatment on December 8, 1897. First gonorrhœa twelve years ago, followed by several "relapses." Complained of symptoms of "gleet." Urethroscopy revealed urethritis chronica infiltrativa et glandularis. Regular dilatation treatment followed. No progress to a cure. February 25, 1898, three glands destroyed. Moderate reaction; the discharge diminishing somewhat. Still (March 1, 1898) under treatment.

Judging from a close study of the above seventeen cases, as well as from an experience derived from observation of nearly four hundred and fifty cases of chronic urethritis in which different forms of treatment were pursued, the writer arrives at the following conclusions:

(1) In all cases of suspected urethral disease (excluding cases of acute urethritis) a careful urethroscopic examination should precede treatment.

(2) As a rule, all forms of chronic urethritis can be cured by regular dilatations and urethral injections of a silver-nitrate solution.

(3) Electrolysis is indicated only in the glandular form of chronic urethritis.

(4) Electrolysis will cure the larger proportion of chronic glandular urethritis.

(5) If electrolysis fails, the dilatation treatment is indicated.

(6) In some cases of chronic urethritis, dilatation treatment preceding electrolysis will prove beneficial.

(7) In those cases in which firm and dense cicatrices have developed in consequence of electrolysis, regular dilatations should be proceeded with.

(8) During treatment, endoscopic examinations of the urethra should be regularly made, controlling thereby, under the direct guidance of the eye, the progress of the disease, and, according to the conditions found, modifying the treatment.

I am deeply indebted to my friend, Dr. H. R. Wossidlo, of Berlin, not only for permission to publish the histories of the foregoing cases, but also for many valuable hints and suggestions in the preparation of this article.

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Ignored Syphilis Complicated by Septicæmia.—Latent syphilis may be complicated by secondary septicæmia upon which quinine and salicylate of sodium fail to act. The condition improves immediately, however, when the primary disease has been treated by antisyphilitic remedies.—Surmont and Patoir.

THE CONTROL OF TUBERCULOSIS.

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Of all historic diseases which have afflicted mankind, no continuous disease has been less subject to control than tuberculosis. There have been epidemics or endemics that were more fatal or less subject to control for short periods of time. But these have been only for short periods. These diseases die out for want of fresh fuel, or their very contagiousness has demanded great effort which has resulted practically in control.

With tuberculosis the case is different. This is a disease with which we all are practically familiar—one which every medical man thinks he understands. The very clearness of apprehension with which he thinks he sees leads him blindly on in treatment or prevention. Hence no stop or cure.

It is a common impression that tuberculosis is due to a germ. If true, the germ being killed, the disease would at once cease. Methods of destroying germs are familiar to all. It is plain to the ordinary observer they are of little value. Germicides *per se* being valueless, it enters the minds of some that perhaps a condition of the system may be induced that will prevent the entrance of germs, or—may be better—will not allow their growth. Germ cultures are procured, and their alkaloids used to fortify the system or render it immune. With a painstaking accuracy worthy a better result, these germs are isolated, cultivated, and the alkaloids injected for this purpose.

The result is before us. Is tuberculosis lessened by injections of these cultures? There are many occupying chairs in medical colleges who would be pleased to answer in the affirmative, but facts do not bear out the assertion. Instead of boldly saying no, which would be the writer's course, the attempt is made to waive a direct answer to the question and encourage a hopeful view for the future. At the same time these teachers are continually instructing in methods which have long since proved practically *nil*. Is such instruction a benefit? Finding it impossible to kill the germs in the air or in the person without injury, finding immunity largely an imaginary quantity, men have in some quarters advocated germ-proof houses. It is soon seen by all except a few fanciful scientists that even these germ-proof buildings could be of little value.

The question now arises: If present notions prevail, how soon will tuberculosis be under control? No one can clearly answer, for no one knows. Under the circumstances, would it not be wisdom carefully to investigate the cause of disease and see if there be not some other connecting or underlying condition which allows the living tubercle bacillus to enter one's system and grow? If such condition be found, would it not be further wisdom to inquire if this condition is always present in the growth of tubercle bacilli in the human organism? If always present, would it not yet be further wisdom to ascertain if this condition cannot be removed and thereby prevent the entrance of a growing bacillus in one's system? If this condition exists, is always present, is removable, we hold in our hands an effectual weapon for the prevention of tuberculosis.

The writer claims that here is a succession of facts the force of which cannot be weakened by any argument. In other words, here lies a chain of reasoning on which the law of tuberculosis is based. This law is based on facts as immutable as is any law of Kepler or Newton. This law must stand. What is the law of tuberculosis? The death rate from tuberculosis is in direct ratio to suspension of atmospheric influence.

Having laid down a law of tuberculosis, let us now critically examine the facts on which this law is based. My attention was called to these many years ago. The first published article bearing on the subject is found in the December number of the *Cleveland Medical Gazette*, 1890. Phthisis pulmonalis is here spoken of as a zymotic disease. Medical experts had so placed it, and this opinion was accepted without question. Upon investigation the contagiousness of the disease was in doubt. It was found there are certain conditions of the system in which one apparently takes the disease. There are other certain conditions in which one does not take the disease. The question arose: On what does the contagiousness or non-contagiousness of tuberculosis depend? In answer to this, it is seen that certain animals are affected and the same animals are not affected, according to the condition in which they are housed or kept. Some in authority have lately asserted that food or diet has as much to do in the origination or starting of tuberculosis as has the atmosphere. The writer thinks that in this statement there is a misconception. It is not the atmosphere *per se*, but suspension of atmospheric influence that induces the condition or disease. Food or diet, according to quantity and quality, may improve or weaken the physical or mental condition. This, I think, is about all. Suspension of atmospheric influence, whether the animal be weak or strong, will produce a condition of the system which allows the tubercle bacilli to enter and grow.

While suspension produces a condition favorable to the growth of a germ, food produces simply a strong or weak condition of the system and has no relation to the germ's growth whatever. This, I think, is a marked difference, and one which even late observers have entirely overlooked. Again, it is evident that if the basic facts be changed, the law depending on those facts must be worded differently. This accounts largely for the change made in the law.

Another fact may be referred to at this time. It is very difficult for some to enter into a discussion or investigation in which figures or mathematics are used. In order to accommodate this class, the law is stated in the simplest language possible. The writer feels assured that those who impartially investigate the subject will find the conclusions accurate.

With this simple law before us as demonstrated, with the deadly disease before us as seen, it is the writer's hope and belief that much may be accomplished in a practical way by simply living in accord with the teachings of this law; by avoiding in every possible way the suspension of atmospheric influence. A deadly enemy is before us. In every engagement thus far we have met defeat. Let us train our guns to do the most effective work. Before entering an engagement, it is always well to take an account of the character of weapons to be used. One great difficulty in the recent past has been that the bacteriologists have taken upon themselves the entire work. This I think is a mistake. Bacteriology is one arm of the medical service. Its work along its own line is of great value; its work in other lines of no value whatever.

To illustrate: We have many ships in our navy—battleships, cruisers, torpedo boats, etc. Suppose a captain of a torpedo boat should say, "My boat will act as a battleship." Or the captain of a battleship should say, "My boat will act as a cruiser." Or the captain of a cruiser should say, "My boat will do the entire work; the rest of you may remain idle." What would be the condition of the navy? Any one could see that the service would be of no practical benefit whatever. We might as well do without a navy as to have one boat arrogate the entire service to itself. Thus with bacteriology. Bacteriology has been pushed forward to the exclusion of everything else. I trust some of my contemporaries will see the force of this assertion.

There is another insuperable difficulty which bacteriology has met in the battle with tuberculosis. It is assumed that tuberculosis is a germ disease. If it were a germ disease, rationally considered, it could be met with germicides or the alkaloids of germs. It not being a germ disease, rationally considered, germicides or alkaloids of germs would be of no value. Whether the disease be due to a germ or not, I leave to an intelligent profession; this much is certain, bacteriology has thus far found no cure for the disease. The same may be said of other methods of treatment. The writer believes that the secret lies in recognizing the cause of tuberculosis. It is plainly evident, if the cause of tuberculosis be suspension of atmospheric influence, no line of treatment could cure without first recognizing the cause and removing it. Even then, if there be destruction of tissue, no treatment could restore tissue lost. These facts must be taken into consideration when talking of cure. So that he who asserts he has a cure for tuberculosis either falsifies or is ignorant.

There being no cure for tuberculosis, it remains to be asked: In what way can we arrange our forces most effectually to battle with the disease? To the writer it seems clearly evident that the control of the disease must be largely along the line of prevention. Now do not misapprehend. The writer believes that open air and constitutional treatment are of great value. In truth, in conjunction, they are the best treatment of tuberculosis known to the science of man. At the same time, to repeat a well-worn aphorism: "An ounce of prevention is worth a pound of cure." There is no cure for tuberculosis. There is prevention. If prevention succeeds, there is no need of cure. To-day this hydra-headed disease exists on every hand. There is need of prevention and there is also need of treatment. Insidious and deadly in its nature, say not to the afflicted that there is no value in treatment. There is value in treatment. But if cure be perfected, treatment must be given in the precedent state or incipient stage of the disease. Then there is cure. But, as said in a previous article, if there be disorganization or breaking down of lung tissue, this tissue can never be restored. Yet even in this condition treatment is of value, and by its judicious employment life may be prolonged and aid and comfort given the afflicted. This alone is certainly worthy our consideration.

To speak directly of prevention, the first step to be taken is to remove the cause of the disease. If the disease be due to suspension of atmospheric influence alone, the first step in prevention is to remove the suspension. Without this, nothing can be accomplished. With this, much can be accomplished. If due to heredity in conjunction with suspension, here the battle must continue as long as life lasts. Heredity is an entity of the parents, and must be controlled in the rising generation by proper marriage. Let no one marry into a consumptive family, should he desire healthy offspring. Evidently the marriage relation is a serious one, if we look at it in the light of transmission of disease. Every one who asks in marriage should have a clear health register, and he should expect the same of his partner. Without this, tuberculosis will remain a disease in the human family to the end of time. With this, tuberculosis can be controlled.

In a recent session of our legislature, some one introduced a bill to regulate marriage. What became of the bill, the writer only conjectures. One thing is known—the way in which the measure was received. Some spoke of it as ahead of the times; others as visionary, unnecessary, ridiculous, etc. It is not worth while to discuss the merit of this particular bill. This much is certain; in the years to come some measure of this character will be enacted to prevent disease. Education must ever precede legislation. It is education to-day, legislation to-morrow. In this way, step by step, the human family has risen in civilization. The laws of Ohio to-day could not be enforced in present China. The laws of Ohio, it is hoped, will be changed for the better in the years to come. True, it is difficult to legislate on marriage. To say one must or must not is somewhat arbitrary. Is it not best to do so? When one is educated to select only the best in marriage, it is more largely a matter of choice or judgment and less one of impulse or emotion. Not long since a man of this city, pointing to a deformed child, said: "If nature could give me no better body than has that child, I would ask to be shot." Please reflect! What was nature's act other than the volition of the parents? Why not legislate?

Reverting to suspension of atmospheric influence, this may be induced in many ways. The following classification has already been given the public, but as it presents the subject in the clearest light possible it is repeated here.

SUSPENSION OF ATMOSPHERIC INFLUENCE.

From without.	Impure atmosphere.	Ill ventilation, vocation, etc.
	Impoverished atmosphere.	Overheating rooms, improper ventilation, etc.
From within.	Defective lung tissue.	Original. Heredity.
		Acquired. Disease, exposure, etc.

To explain more fully, suspension takes place in two ways—from within and from without.

From within through original or acquired lung tissue. Though the scalpel or microscope may detect no difference in lung tissue, it is observed that children of consumptives take the disease more readily than children of the healthy. Why? Defective lung tissue—heredity. Such children will tolerate no confinement. Confinement to them means death from tuberculosis. These children die from the disease, while other children escape—ventilation, food, physical exercise, etc., being the same; thus showing that there is a difference in the organism or lung tissue. It is also observed that those having stenosis of the air passages, whether congenital or acquired, are more subject to tuberculosis. Why? Suspension of atmospheric influence. In some of these cases operation to remove the stenosis is beneficial. In all, there should be perfect ventilation.

There are certain diseases which tuberculosis is pretty sure to follow if precaution be not taken, viz., measles, pertussis, etc. Why? Defective lung tissue—acquired. Suspension of atmospheric influence due to thickened lung tissue. What precautions are necessary? Perfect ventilation during sickness and recovery.

From without, through impure or impoverished atmosphere. Every observer has noticed that there are two classes in particular who suffer much from tuberculosis—they whose vocation or calling keeps them continuously in the dust and they who suffer from confinement in ill-ventilated rooms. In the first class there is suspension from lodgement of dust particles in the air cells of the lungs or from mechanical irritation of the same—one or both, commonly both. What is the preventive? Avoidance of the irritating dust. (1) Change of vocation; (2) wearing of a dust protector; (3) elimination of dust by a dust collector.

If heredity be a factor, the first method should be adopted. No one should engage in or follow an unfavorable pursuit if the subject of hereditary influence. Though the usual precautions were taken, the probability is he would die of tuberculosis. If the subject be vigorous and have a good family history, he may follow the vocation of his choice. In this case a dust pro-

tector is of service, but unequal to a dust collector. In all shops where there is an irritating dust these collectors should be obligatory.

We now reach the topic of impure or impoverished atmosphere. This has been explained elsewhere (*Lancet-Clinic*), but a word or two in this connection will not perhaps be out of place. We, as Americans, are living in homes many of which are warmed by furnace heat. In all homes there is artificial heat for a part of the year. In these homes the atmosphere is at times impoverished. As a result, the occupants suffer largely from respiratory and constitutional disease. Tuberculosis is of this number. It is prevalent and deadly. Treatment is of little avail. Prevention is of value. The preventive, the writer is inclined to believe, consists in a stove or furnace of at least double the size or capacity of the one ordinarily used. It takes no more fuel, the heat is more constant and even, and the stove or furnace lasts longer. There is therefore no greater expense in the end. There is an assurance of better health. The danger in cold weather is that too much oxygen is withdrawn from the room to support combustion, and not enough air is let in to replace the oxygen abstracted. Suspension of atmospheric influence is induced. In this way plants and animals alike suffer.

There is another factor which should engage our attention. I refer to the irritant dust of soft-coal stoves and furnaces. In the present arrangement of these, nearly all give off an irritant dust, smoke, or vapor. Irritation of the throat, fauces, and bronchial tubes commences soon after their use. This should not be. The draught should be perfect, so as to allow no dust in the room. If it is not perfect, there is suspension of atmospheric influence because of the irritant dust; also because of the lack of oxygen in the air. Consequent tuberculosis. When these facts are clearly understood and acted upon, the writer feels satisfied the death rate from tuberculosis will be much diminished. If true, this statement is worthy of consideration. In the above I refer to the atmosphere as found in country homes and villages. In large cities, as a rule, it is very much more impure. Large cities are railroad centres, contain the factories, workshops, etc. There are, of necessity, great volumes of smoke. At times the outdoor air is almost unendurable. Science can and no doubt will soon remove this smoke nuisance of cities.

There are other factors, not mentioned, in cities which contaminate the air and render it unfit to breathe. I pass over these. One or two others I mention which aid respiration and whose absence makes breathing more difficult. I refer to public baths and gymnasiums.

To conclude, if the person be kept clean, a certain amount of daily physical exercise be taken, and pure air constantly inhaled, there is no danger whatever from tuberculosis if there be no heredity. Tuberculosis can be controlled.

Hot Oil as a Sterilizer.—According to *The Hospital*, hot oil is more efficient than boiled water in sterilizing instruments. Olive oil at a temperature of 320° F. to 356° F. acts very quickly and with great power. To obtain complete sterilization of the instruments it suffices to dip them for an instant into the hot oil, and in the case of syringes it is sufficient to fill them twice with oil at the temperature mentioned. The temperature of the oil of course may be determined by the thermometer, but Professor Wright, of the Netley Hospital in England, suggests the simple although somewhat rough-and-ready method of dropping a crumb into the oil, which becomes brown and crisp as soon as the required temperature is obtained.

DIVULSION OF THE SPHINCTER ANI AS A THERAPEUTIC AGENT.[1]

By J. N. BAUGHMAN, M.D.,
EVANSVILLE, IND.

The majority of rectal diseases are situated either at the sphincter or within one or two inches of it, and all of this part of our anatomy is very liberally supplied with nerves, and all from the same source, so that an irritation in any part of the rectum will affect the entire rectum and sphincter. Any irritation to the nervous supply of the sphincter ani will result in its spasmodic contraction, and thus it may be seen that if we can put this muscle entirely at rest we shall gain an important point in our treatment of most rectal diseases.

We take, for instance, a case of hemorrhoids, either internal or external, but more especially internal, and when the swollen and inflamed tumors come down within the grasp of the sphincter muscles they are caught, and the constriction caused thereby produces an amount of congestion and further inflammation in the pile tumor that results in a pain that is at times perfectly agonizing, and this very pain and inflammation produce an amount of irritation in the terminal nerve filaments going to supply these special parts, that, being transmitted to the nervous centre, which is the spinal cord, returns the impression of irritation to the muscular fibres of the sphincter; this produces renewed contraction that keeps up the trouble incessantly. Now if the sphincter muscle is divulsed until its fibres are for the time being put at rest, it breaks this nervous circuit by removing the irritation, and at the same time releases the pile tumors that were imprisoned in its remorseless grasp, thus allowing the free and easy return of blood from the inflamed tumors and assisting them in returning to their original quiescent state.

Again, we take a small fissure or ulcer within the grasp of the sphincter muscle, and every time the muscle is put upon the stretch by an evacuation of the bowel the pain that is produced is perfectly agonizing, for it tears open the bottom of the fissure or ulcer and exposes the terminal branches of the sensitive nerves to the irritating contact of the fæcal juices, and by the same nervous circuit as before mentioned the sphincter is thrown into spasmodic contraction and an agony of pain is kept up for hours. Now if the muscle is divulsed until the filaments are for the time being paralyzed, as stated before, the circuit is broken; the fissure or ulcer is given rest, and thus a chance to heal without being everlastingly held by the sphincter muscle.

There are no troubles that can be so relieved by rest as can the various diseases and injuries that are affected by this little sphincter ani muscle, and none of them can be relieved with any assurance of success until the fibres of this muscle are perfectly flaccid.

It is almost impossible to divulse the sphincter ani unless our patient is thoroughly under the influence of an anæsthetic, for the fibres of this muscle are among the very last in the entire anatomy to yield to the anæsthetic, and the pain produced by the divulsion is simply unbearable unless the anæsthetic is given.

The muscular fibres should never be torn, but by gentle kneading and stretching they should be rendered perfectly flaccid and for the time being paralyzed.

It is best first to introduce a bivalve or trivalve speculum, gently open the blades in various directions until the resistent force is partly overcome, and then use the fingers of each hand until the divulsion is completed. It should be remembered that the

[1] A paper read at a meeting of the Vanderburg Medical Society, March, 1898.

sphincter ani in women is much easier to divulse than is that in the male, and we should ever be on our guard not to carry the process so far as to endanger rupture of the muscle or its permanent paralyzation, for no more deplorable condition could be than this.

After the divulsion is completed and any operation in addition thereto that may be necessary for the relief of the particular trouble that may exist in each individual case has been performed, we should thoroughly sponge the anus and whatever part of the rectal mucous membrane that may be reached, with very hot sterilized water, and our patient should be put to bed and remain very quiet for at least six or eight hours.

There are but few physicians who realize the part played by the external sphincter muscle in the production of many cases of constipation. It is a proven fact that the sigmoid flexure is the receptacle or storehouse where the fæcal mass is retained from the time it leaves the colon until it is ready finally to be expelled by the act of defecation, the rectum being empty until just before the defecation act, when the fæcal mass enters the rectum from the sigmoid, and as soon as it does so there is produced the sensation of fulness, caused by the irritation of the fæcal mass upon the terminal nerve filaments of the internal pudic nerve; this irritation is transmitted to the spinal column and sent back to the muscular fibres of the external sphincter, which in its turn contracts and prevents the onward descent of the fæcal mass. Now if an opportunity is not presented for the final evacuation of the bowel, in a short time the fæcal mass is lifted back into the sigmoid to remain for another period. But if the opportunity for its evacuation is not presented, the mass becomes greater and its watery constituents are taken up into the system, leaving the hard and irritating mass to be packed down into the rectal pouch by the pressure of the abdominal contents and muscles, until its long contact with the mucous membrane produces an irritated or inflamed, or, may be, if not relieved in due time, ulcerated condition. The resulting irritation of the upper rectal nerves is carried by the same circuit as before mentioned to the sphincter ani, which continues its remorseless grasp until the will power has no control over it when the opportunity to evacuate the bowel does occur.

Now in such a condition as this, the more purgatives we give the worse the condition is rendered. If we anæsthetize our patient and thoroughly divulse the sphincter muscle, and clean out the rectal mass with large injections of hot water, we shall give the irritated, inflamed, or ulcerated (as the case may be) mucous membrane time to rest and heal, and thus relieve the constipation by divulsion of the sphincter ani.

Inoculation of Leprosy.—Dr. Osler, in a lecture recently delivered on leprosy (*Johns Hopkins Hospital Bulletin*), says that the possibility of successful inoculation must be recognized, though Hansen, the leading living expert on leprosy, declares that as yet all attempts at reproducing the disease by direct inoculation have been unsuccessful. He does not regard Arning's experiment on the Honolulu convict as satisfactory, since this man had leprous relatives. A number of observers, including some of the best students of the disease, have inoculated themselves, with negative results. The direct hereditary transmission must be excessively rare more so, indeed, than of tuberculosis. Since lepers have, as a rule, very few children, heredity can play only a very small part in the spread of the disease. Alvarez stated at the recent congress that he had never seen a newborn leper child; the youngest patient he had met with was three and a half years old.

MYRRH IN THE TREATMENT OF MALARIA.

By AARON JEFFERY, M.D.,

NEWPORT NEWS, VA.

THREE years ago Dr. William H. Ribble, of Wytheville, Va., told me he had a specific for chills and fever, which he had used for twenty years and which had in every case absolutely stopped the chills after forty doses. Before giving me the formula, which is a very simple one, he told me how he happened to use it.

One day, while riding to see a patient in Nelson County, Va. (which county in some sections is very malarious), he was joined on the road by an old man, who asked him where he was going. His reply was that he was on the way to see the most obstinate case of chills and fever he had ever come across, and one in which the largest doses of quinine seemed to have no effect. To cut a long story short, the old man gave him the following formula, which he used with the happiest result: Quinine, 40 gr.; pulverized myrrh, 20 gr.; and powdered licorice, 10 gr.; to be made into forty pills, one to be taken every two hours.

Shortly after Dr. Ribble told me of this, I moved to Newport News, Va., where I have had an abundant opportunity of trying the combination of quinine and myrrh, and always with the effect of cutting short the attacks.

I do not add the licorice, as it could have no possible effect, but order the myrrh and quinine to be put up dry in capsules. Of late I have been using two grains of quinine and one grain of myrrh in capsules and repeating the dose every three hours, instead of half the quantity every two hours. Very little is written in the text-books on the physiological actions of myrrh, but Binz, in his "Elements of Therapeutics," in speaking of myrrh, says: "From experiment we know that myrrh, even when given in doses of thirty minims of the tincture, increases the number of white blood corpuscles fourfold, and we know from counter-experiments that this result is not due to the alcohol." By some the white blood corpuscles are said to be the scavengers of the blood. If this be so, the plasmodium malariæ can be more easily eliminated, and the benefit derived by the addition of myrrh to the quinine in the treatment of malaria is explained.

Progress of Medical Science.

The Pupil Reflex in Infectious Diseases.—Dr. Corte draws the following conclusions: (1) In measles, scarlet fever, and ordinary small-pox the pupil reflex is normal; in the primary form of hemorrhagic small-pox it is weaker or absent. (2) In typhoid fever complicated with lung affection the pupil reacts slowly, whereas in infectious endocarditis the pupil reflex is absent. (3) In puerperal fever complicated with endocarditis or peritonitis the pupilreflex is wanting.—*Klin.-therap. Wochenschrift*, May, 1898.

Test for Sugar in Urine with Aniline Dyes.—Dr. Ludwig Bremer (*Centralblatt für innere Medecin*, 1898, No. 13) describes this test as follows: In two absolutely dry and clean test tubes put, in the one, ten cubic centimetres of normal urine; in the other, the same quantity of diabetic urine. Now drop in each a few grains of finely powdered gentian violet, in such a way that it comes in contact with the upper layer of urine at its centre, without touching the sides of the tube. The normal urine is either faintly tinged or not at all. In the diabetic urine there is, in a few seconds, a blue or blue-violet coloration of a larger or smaller urine layer at the top of the urine column.

MEDICAL RECORD:

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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WHO IS TO BLAME FOR THE NEGLECT OF THE SICK AND WOUNDED?

IT was not a pleasant task for the MEDICAL RECORD to arraign the medical department of the army for dereliction of duty in caring for the sick and wounded soldier. The obligation for taking such a course was forced upon us by the facts upon which a public scandal was founded. The necessity of criticising a department in the army in which every medical man throughout the country should have a becoming pride was offset by the chagrin that it had signally missed the opportunity of adding to a hitherto enviable reputation. What might have been and what was the case stand out in bold and striking contrast. The lessons to be learned from the Cuban campaign centre more around the neglect of the sick and wounded than any other features of the battlefield. This aspect is the more deplorable in that there are no evident reasons why the sick or wounded man should not have had the best of care. This was at least his due, and it was impliedly guaranteed him by the government. When the lamentable facts to the contrary are presented, it is extremely unfortunate for the surgeon-general that he should be held by the public so directly accountable. This will continue to be the case until an official investigation is made of all the departments of the army and the real blame for the many instances of inhuman treatment is properly placed on the guilty parties. Thus far we have been treated in the public prints with charges and countercharges, the only thing really admitted being the fact that the sick and wounded did not actually get the care they had a right to expect. It is quite evident in the present phase of the dispute that some attempt should be made to reconcile opposing statements and institute a thorough and searching investigation into all the known facts in this deplorable and reprehensible business. As we have said before, the surgeon-general of the army, for his own reputation and for the vindication of his corps, should demand an inquiry even from President McKinley himself. Until this is done the medical department will rest under suspicion of being accountable for all the disgrace and scandal. There is no one too high and too mighty to be brought before the bar of public opinion, when the gravity of the charges is duly considered. Whether the fault be due to the secretary of war, the general of the army in the field, the quartermaster-general, or the surgeon-general, the actual responsibility of wrongdoing should be definitely and fearlessly fixed by a properly constituted tribunal. If this is not done before the history of the present war is written, there will be on its otherwise brilliant page an ineffaceable blot over the doings of the medical department of the army.

We have in our last week's issue demanded of General Sternberg that whoever was responsible should be made known. If politics is at the base of this horror, then let the President himself start an investigation which will reveal the guilty, and by a prompt removal from office purge, so far as possible, the nation from complicity in such misdeeds. No office, however high, should shield the author of such criminal neglect. The people demand and the medical profession of the country demands that our good name and fame may be freed from this unjust implication.

THE ABDOMINAL INCISION.

SINCE it has become possible to be reasonably certain of getting primary union in our operative wounds, and to open with safety the various cavities of the body, more and more attention has been devoted to the technique of opening and closing these cavities. The abdominal cavity is perhaps the one which requires most attention from this point of view, both because it is so frequently the field of operative work, and because the patient's subsequent comfort and usefulness depend greatly upon the manner in which a wound in this region heals. Before the days of asepsis, the exact method of opening the abdomen was as a rule immaterial, and the operation was undertaken only in urgent cases. But now that laparotomy is such a common operation, more and more attention is being given to the character and location of the abdominal incision.

The linea alba is no longer the site of election for an incision which must be at or near the middle line, for surgeons are coming to believe that incision through one of the recti is followed by firmer union, partly on account of the greater thickness of the abdominal wall and partly on account of the contracting power of the muscle. An incision through the linea alba, when healed, protects against hernia only by the formation of cicatricial tissue, and the tendency of such tissue to stretch and atrophy is too well known to need comment. If the incision goes through muscular tissue in the direction of its fibres, healing takes place by the same process of cicatrization, but the new cicatricial tissue is supported by muscular tissue, which gives the abdominal wall much greater thickness and by its contractility is always tending to prevent stretching of the tender cicatrix. An accurate union of the peritoneal edges is of more importance in reducing the area to which the viscera may become adherent than in adding any real strength to the healed wound.

The importance of not dividing the nerves, even the small ones, is now generally recognized, for it has been found that atrophy of the abdominal mus-

cles is directly dependent upon interference with their nerve supply.

With such facts in mind, surgeons have been, during the past few years, devising various methods of opening the abdomen so as to divide as few fibres of any kind as possible, and these efforts have resulted in great improvement in technique when the operation involves opening the abdomen on either side low down. The so-called "intermuscular" method of McBurney, which might better be called "intramuscular," is one of the best of these methods, and enables the operator to avoid in great measure the division of fibres, either nervous or muscular. By it he can gain access to either iliac fossa, and with good retraction can do a surprising amount of operative work in these localities. The healing of the wound after this method of operating leaves the abdominal wall in a practically normal condition, and it seems impossible for a hernia to develop after it. In the iliac regions a transverse laparotomy has been done a large number of times, but we do not think that its performance has been accompanied by any great care to avoid division of fibres, and if the incision is made horizontally the nervous and muscular fibres are divided to as great an extent as in any other method. In cases in which more room is desired than can be got by the intramuscular method, it might be a good plan to divide the external oblique transversely, or nearly so, and to separate the fibres of the internal oblique and the transversalis, which, over the greater part of the iliac regions, are nearly parallel. By this plan we should get the benefit of the preservation of the nerve supply and muscle fibres of two of the muscles.

The method suggested by Kammerer for the removal of the appendix is also adapted to prevent subsequent hernia, and the interposition of the body of the rectus certainly gives us a powerful barrier against the development of such a condition. The wound is perhaps a little tortuous from surface to peritoneum, and the method necessitates rather strong retraction, a thing which the edges of fascia seem sometimes to resent.

In certain operations upon the gall bladder and its ducts we are often compelled to make large incisions, and frequently indeed to divide the rectus transversely. The healing of such a wound practically always leaves a weak abdominal wall, and it must be with a feeling of regret that the surgeon makes the transverse division of this muscle. An oblique incision near the border of the ribs gives a firmer wound than the T-shaped or L-shaped incision, since on one edge at least the subsequent scar has firm support. However, in this respect the gall-bladder region is not so important as are other regions of the abdomen, for here the viscera are comparatively solid and fixed, and the intra-abdominal pressure is not quite so great as in other parts. It is perhaps a trite, but none the less important, statement that success in preventing hernia by any method is directly proportionate to success in maintaining asepsis.

London and Paris have recently experienced a hot wave of unusual intensity, the mercury rising to 97° F. in Paris and nearly to that height in London.

A NEW BLOOD PARASITE AND THE FEVER ASSOCIATED WITH IT.

A PAPER by Dr. E. W. von Tunzelmann on the health of Chefoo, in the "Medical Reports of the Imperial Maritime Customs," No. 2, 1898, contains much valuable information in regard to malaria. Dr. von Tunzelmann, who had excellent opportunities for observation, made some careful and elaborate investigations into the bacteriology of malaria. The report is far too lengthy to transcribe in full, but many of the remarks contained therein are interesting in a high degree. Referring to case No. 4, Dr. von Tunzelmann says: "I have put this case last, though it was actually my first, because it was very complex, the non-malarial remittent fever, to which the fatal issue was due, being mixed with a malignant form of malarial quotidian As I wish to confine myself solely to the former disease, not to extend my paper to an excessive length I omit any detailed account of the symptoms. The patient was the commander of a coast steamer. He had been severely ill for six days; when I first saw him during this period his temperature had rarely been below 104° F. His blood was then found to contain in profusion the pigmented plasmodia of the malignant quotidian, 'summer-autumn' fever of the Italian observers, as well as a small number of those of tertian fever. The latter disappeared after the first day. The pigmented plasmodia disappeared speedily under the vigorous use of quinine by the mouth, hypodermically, and intravenous. As, however, these parasites were killed off, I observed from day to day increasing numbers of intracorpuscular bodies of a kind entirely unknown to me, and not mentioned in any works on malarial fevers with which I am acquainted. At the same time the blood, instead of becoming more and more watery, and therefore more readily diffusible between cover glasses, as is generally the case, got so sticky and mucilage-like in consistence that ultimately a drop just remained as such. I had therefore to change my technique in examining fresh blood, and to adopt the method of adding to the blood a drop of 0.75-per-cent. salt solution tinged with methyl violet, a liquid which in no wise affects the form of the elements. On the first occasion of so doing I had the good fortune to discover the adult forms of the parasites whose immature forms had been puzzling me for some time. Seeing that quinine was entirely without effect on these parasites, as had been clearly enough shown clinically already and as proved by experiment with the parasites under the microscope, I cast about for some drug which might prove lethal to them. Further good fortune led me to select methylene blue, and shortly after I began its use. I never saw again one of the above-referred-to extracorpuscular parasites alive in this patient's blood, though it always had dead ones in large numbers. Unhappily, it was too late for the methylene blue successfully to exert its beneficent influence; the patient was already beginning to fail, and, though a temporary effect was produced, it proved evanescent, death occurring three days after the discovery of the *materies morbi*."

This case is interesting because it shows that the

curative power of quinine in genuine malarial fever is due to its lethal action on the plasmodia, a fact which was proved both clinically and by actual ocular demonstration through the microscope. The case also shows the powerlessness of quinine to deal with the parasites associated with the complicating remittent fever.

THE "MEDICAL RECORD" AND THE SURGEON-GENERAL.

The action of the Medical Record in calling attention to the sufferings of our soldiers through lack of surgeons and medical supplies in the transports and on the field seems to have been misinterpreted by the surgeon-general of the army as a personal attack upon himself. At least, this is the inference to be drawn from the letters written by him and by Dr. Senn and others of his subordinates in answer to our criticisms. This misunderstanding is greatly to be deplored, for not only does it place our motives in a false light, but it tends to defeat the very object for which we are striving, namely, the fixing of the responsibility for the cruel neglect of the sick and wounded where it belongs, and, if the result of the investigation is such as we hope, the happy removal of the stigma from the army medical department. Through the fault of some one, or it may be of several, in authority, American soldiers suffered needless torture and death. The public naturally held the medical department of the army responsible for this, and if the blame could be fixed there, not only the surgeon-general and every one of his subordinates, but the entire medical profession of the country would be disgraced in the eyes of the world. Busied with the absorbing duties of his office, General Sternberg did not appear to realize the danger that menaced him and all his noble corps of surgeons, and in warning him of this danger we did but act the part of a faithful friend to him and a jealous defender of the honor of our guild. We believe that the surgeon-general is not personally accountable for the horrid neglect of our wounded heroes, but some one is, and Dr. Sternberg owes it to his professional brethren as well as to himself to fix the responsibility where it belongs. He can do so if he will, but unless he does so the blame will fall on him, and it is to save him from this injustice that we have urged and continue to urge him to court investigation.

MOSQUITOES AND MALARIA.

The account of the researches of Surgeon-Major Ross in the matter of an extra-anthropic host of the malarial plasmodium, read by Dr. Patrick Manson in the section on tropical diseases of the British Medical Association, and contained in our special report of the Edinburgh meeting, is one that cannot fail to interest our readers everywhere. Not only is the subject of malaria one of perennial concern to practitioners in many parts of the United States, but the method pursued by this patient worker, and that by which he achieved such brilliant results, is an example of what a truly scientific investigation should be. Dr. Ross did not content himself with the observation that there is no malaria in certain districts where mosquitoes do not bite—shrewd guesses based upon such coincidences had been made by Marchiafava and Manson years before Koch gravely announced the theory as his own—but he followed the plasmodium in all its evolutions and its travels through the body of the mosquito. It is true his studies were, for several reasons, made with the plasmodia pathogenic to birds, but the results may fairly be applied to man, and we have as a result the actual demonstration that, in whatever other ways malaria may enter the human body, one way at least is through the proboscides of the Culicidæ.

HOSPITAL JEALOUSIES.

If the reports which appear so frequently in the papers, of ill-feeling among the various hospital staffs in New York, are only half true, it is time that the authorities took the internes in hand. In one case a patient with fracture of the leg and forearm was to be moved from one hospital to another, and before the ambulance arrived the surgeons of the first hospital removed all the dressings and refused to help the ambulance surgeon from the second hospital to reapply them. In another case a woman with fracture of the patella was refused admission to a hospital because she was brought in an ambulance of another hospital. Such are the reported facts, and if they are correctly reported the young surgeons should be very forcibly reminded that their duty is to relieve suffering and not to vent their feelings of rivalry upon unfortunate patients who may be temporarily in their power.

News of the Week.

Behring's Unholy Attempt.—A firm of German manufacturers of diphtheria antitoxin has served notice on manufacturing chemists and others in this country not to make any more antitoxin, threatening them with a suit should they continue to manufacture it. Some of the houses making it in this country have announced that they will protect physicians using their serum, and doubtless all the other manufacturers will follow suit. Then we shall see whether a German doctor, whose title of discoverer of diphtheria antitoxin has never been unquestioned, can compel the United States to pay him tribute. The effrontery of the man is beyond belief.

Tetanus on Long Island.—Some alarm has been caused by newspaper statements that the soil at Montauk is infested with tetanus bacilli. Some years ago, when bony-fish manure was extensively used by the farmers, the eastern end of Long Island had an unenviable reputation as an endemic home of tetanus, and the bad name still sticks to it. Physicians practising there say, however, that tetanus is no longer met with—at least, that it occurs no more frequently on Long Island than in the country generally.

An Italian Medico-Legal Congress.—At the instance of the Italian Association of Legal Medicine, the first Italian national congress of forensic medicine will be held at Turin, during the first week in October, under the presidency of Prof. Cesare Lombroso. The secretary of the congress is Dr. Mario Carrara, of the medico-legal laboratory at the Royal University, Turin.

Weighty Arguments.—In the time of trial through which the surgeon-general of the army is now passing he may well pray to be delivered from his friends in the medical press. One of these alleges, apparently as an all-sufficient excuse for the neglect of the wounded, that the commander of the army in Cuba weighs three hundred and eighty pounds and has varicose veins! Another, whose own girth is notoriously out of proportion to his longitudinal measurement, seeks to divert criticism of the surgeon-general of the army by directing attention to the alleged fact that the surgeon-general of the Marine Hospital service is blessed with embonpoint!

The Losses in the War.—An estimate places the losses in the navy during the one hundred and fourteen days of war at 2 officers and 18 men killed, and 3 officers and 40 men wounded; in the army 23 officers and 231 men were killed, and 87 officers and 1,316 men wounded; the total loss was therefore 25 officers and 249 men killed, and 90 officers and 1,356 men wounded. The number of deaths in the army from disease is undoubtedly greater than that of deaths from Spanish bullets, but no figures have been made public upon which an estimate can be based.

The New York State Medical Association.—The regular annual meeting of the New York State Medical Association will be held at 64 Madison Avenue, New York City, on October 18, 19, and 20, 1898. The preliminary programme gives promise of a successful meeting.

An Island Hospital.—Mr. James A. Jones, of Deep River, has offered to the government the free use for hospital purposes of Hicks Island, near the military camp at Montauk Point, Long Island. The island is about thirty acres in area, and on it are several commodious buildings, wharves, boilers, engines, pumps, etc. Hicks Island is four miles west of Fort Pond Bay, where the camp is located.

Dr. John L. Feeny has been appointed by the board of health to the position of assistant sanitary superintendent for the borough of Richmond, to fill the vacancy caused by the death of Dr. George C. Hubbard. Dr. Feeny was for many years the health officer of Edgewater, and at the last election was the Democratic candidate for president of the borough.

Offer of the Health Board Declined.—In reply to an offer of the services of the medical men of the board of health to care for sick and wounded soldiers who may be brought to New York, the president of the health board has received a letter from Surgeon-General Sternberg, thanking him for the offer and saying that additional help is not needed now.

To Dr. S. A. Knopf, of New York City, has been awarded the Alvarenga prize of the College of Physicians of Philadelphia for 1898, for his essay entitled "Modern Prophylaxis of Pulmonary Tuberculosis, and its Treatment in Special Institutions at Home."

Seaboard Medical Association.—The second semi-annual session of this society, composed of practitioners in Eastern Virginia and North Carolina, was held at Virginia Beach, Va., July 14th and 15th. The election of officers resulted in the choice of the following: *President*, E. F. Corbell, Sunbury, N. C.; *Vice-Presidents*, Charles T. Parrish, Portsmouth, Va., and T. N. White, Belvide, N. C.; *Secretary*, John C. Rodman, Washington, N. C. The next meeting will be held in Wilson, N. C., in January, 1899.

The Salaries of German Professors.—A correspondent of the *British Medical Journal* says that the Prussian minister of finance has devised a scheme whereby the government may save the salaries it now pays to the medical professors in the State universities. He has issued a confidential circular asking for co-operation in a sliding-scale scheme of self-taxation, a scheme which would reduce the State salary in proportion to the annual income (above a certain sum) accruing from private practice. This extraordinary proposal, reduced to plain terms, means that a professor earning from $5,000 a year in private practice would enjoy the enviable distinction of serving the State gratis.

The Yellow-Fever Visitation at McHenry.—The limitation and then stamping out by the prompt action of the Marine Hospital service and the Mississippi State board of health of yellow fever at McHenry, Miss., are a cause of great gratification. The total number of cases was twenty-four. The last patient was discharged July 8th, since which time there have been no other cases under treatment and no suspicious ones reported. This is probably the first early outbreak to be so successfully arrested. The Marine Hospital service and the Mississippi board deserve congratulation, both for the achievement itself and the valuable and encouraging lesson it teaches.—*New Orleans Medical and Surgical Journal.*

Safety in Match Making.—The Belgian government has voted a sum equivalent to $10,000 (open to competitors of all nations) to any one who can compound a marketable match paste without the aid of yellow phosphorus. The paste must not be liable to explosion in manufacture, and must not contain any substance dangerous to the health of the workpeople. Application for conditions should be made to M. Woeste, Rue Latérale 2, Brussels.

The Hebrew Orphan Asylum in this city has been emptied, its inmates having been taken to the seashore, in order to put an end to an epidemic of dysentery which threatened to assume dangerous proportions. The disease appeared about three weeks ago, and 150 of the 865 children were attacked, 5 dying. The cause of the outbreak seems to be undetermined, but a thorough examination of the waterpipes and sewer connections will be made.

The Ambulance Ship "Solace."—Surgeon-General Van Reypen, of the navy, has recommended the retention of the *Solace* as a permanent ambulance ship in the navy, and it is not improbable that another may be added, possibly for service in the Asiatic fleet.

The Fifth International Congress on Drinking-Water and Mineral Waters is to be held at Liége, from September 25th to October 3d. The secretary is Dr. Jorissene, 130 Boulevard de la Sauvenière, Liége, Belgium.

Some Michigan Surgeons.—Maj. Charles B. Nancrede, brigade surgeon, is home from Cuba on a furlough. He was detailed to accompany wounded soldiers from the front to the general hospital at Norfolk, Va., and will spend thirty days recuperating in Michigan. The doctor has recently been winning laurels from the forum as well as from the field. At the late commencement exercises of Jefferson Medical College, the authorities of that institution conferred the degree of LL.D. on him. Maj. Victor C. Vaughan, who succeeded Dr. Nancrede as regimental surgeon, was recently stricken with yellow fever in Cuba and removed to the isolation hospital. He has been granted leave of absence, and is now *en route* for home. Dr. H. ... Thomason, of Albion, Mich., will immediately report before Santiago to accept the surgeoncy of the thirty-third.—*The Physician and Surgeon.*

The Practice of Medicine in the Klondike.—A correspondent informs us regarding the condition of medical practice at Dawson City and vicinity, that although there are only eight or ten registered practitioners in the Yukon Valley, there are not less than two hundred practising in Dawson City without registration according to the laws of the Northwest Territory.

The Bubonic Plague is again epidemic in Bombay. One hundred and three deaths were officially reported during the week ending August 13th.

The American Microscopical Society.—The twenty-first annual meeting of this society will be held in Syracuse, N. Y., August 30, 31, and September 1, 1898. The sessions will be held in the new building of the Syracuse University Medical College, where every facility of rooms and apparatus will be put at the disposal of the society. The meetings will begin at 10 A.M. and at 2 P.M. At the opening session, Tuesday, August 30th, the addresses of welcome will be followed by the reading and discussion of papers. On the evening of Tuesday the annual address by the acting president, Prof. V. A. Moore, of Cornell University, will be delivered, after which members will meet socially in the rooms of the Citizens' Club. Wednesday afternoon there will be given demonstrations of the projection microscope and of laboratory apparatus. In the evening of Wednesday will occur the *soirée*. Thursday afternoon the society will be shown much of interest in the New York State Institution for Feeble-minded Children. Owing to the State fair, held in Syracuse from August 29th to September 3d, a round-trip ticket from any station in New York State may be purchased for half the usual rate, and fifty cents (which entitles the holder to one visit at the fair). All interested persons are invited to be present, join the society, and read and discuss papers or demonstrate apparatus and methods. For particulars as to membership, etc., letters may be addressed to Prof. S. H. Gage, Ithaca, N. Y., or Dr. A. C. Mercer, Syracuse, N. Y.

The Medico-Psychological Society of Quebec was recently established by a number of the resident physicians in the hospitals for the insane in the province of Quebec. At the first meeting twenty members were present, and elected the following officers: *President*, Arthur Vallée, of the Quebec Insane Asylum; *Vice-President*, T. J. W. Burgess, of the Protestant Hospital for Insane; *Secretary*, E. P. Chagnon, of Longue Pointe.

A Typhoid-Fever Inquiry.—It is announced from Washington that Surgeon-General Sternberg has decided to appoint a commission to investigate the cause of typhoid fever in the army camps, and report upon a method for the prevention of camp epidemics of the disease. The commission will consist of Major Walter Read, United States army, Major Victor Vaughan, division surgeon of volunteers, and Major Edward O. Shakespeare, brigade surgeon, United States volunteers.

Yellow Fever.—Some, apparently needless, alarm was caused recently by the announcement of the discovery of a case of yellow fever at Franklin, La. Fortunately the case, if it was of yellow fever, was an isolated one and the Louisiana health authorities say that the town is now in a perfectly healthy condition. Three cases of the disease were reported on Wednesday from the marine barracks at Key West. It is not believed that the fever will spread, as energetic measures have been taken by the Marine Hospital, State, and naval medical officers to limit it. Three men ill with yellow fever were on the transports bringing the Rough Riders and members of the seventy-first regiment of New York from Santiago to Camp Wikoff at Montauk Point, and there were many more suffering with a suspicious fever.

The Hospital Ship "Missouri" will, it is reported, be sent to Manila as soon as it is fitted up, the cessation of hostilities taking away the necessity of more than one army hospital ship in the West Indies. The *Missouri* has accommodations for four hundred patients, forty-five nurses, and ten surgeons. She is not so handsomely decorated as the other hospital ship, but has some practical advantages over the *Relief* in other respects.

The Marine Hospital Service and National Quarantine.—The advantage of having the quarantine of the country under national control, so that the rules may be uniform and prompt, and vigorous measures enforced at all points, is being constantly illustrated during the present war. The fact that the Marine Hospital service is a department of the general government has enabled Surgeon-General Wyman to cooperate readily with the army and navy departments in his efforts to prevent the invasion of yellow fever from Cuba.—*The Medical News.*

The Camp at Chickamauga.—Surgeon-General Sternberg has, it is said, informed the secretary of war that he does not favor the abandonment of the military camp at Chickamauga. He says that the illness among the troops is, in the opinion of surgeons of the medical corps, not due to any defects in the geographical situation or in the water supply, but is due almost entirely to the careless methods of living of the soldiers. The men generally sleep on the ground instead of on cots or in hammocks, and they are not careful to observe the directions of the medical department in regard to drinking boiled water and the avoidance of improper articles of food. It is believed that if the troops are moved to Lexington or Nashville the sickness will be as bad, if not worse, especially if the men are sent to either of these places on foot, as was originally proposed.

Ice-Cream Poisoning.—Several deaths and many cases of serious illness in children who have indulged in "hokey-pokey" have occurred in London this season. The papers, both lay and medical, are calling for the suppression of the itinerant ice-cream vender.

A School for the Study of Tropical Diseases is about to be established in London. With this school, the creation of a section on tropical diseases of the British Medical Association, and the prominent publication of a journal of tropical pathology, the British medical men who have had such a wide experience in tropical medicine in the colonies seem at last to be awakening to the responsibility which rests upon them to instruct their successors in this most necessary branch of medicine.

A New Way.—A correspondent of the *Canadian Journal of Medicine and Surgery* writes that he was astounded beyond measure the other day to come across the following advertisement pasted up alongside of a telephone in one of Toronto's business houses, printed in blue and red ink: "In case of any accident in this establishment, telephone at once for Dr. ——, No. — —— Street." The astounded correspondent remarks that "surely such cannot be professional."

The Heart, the Bicycle, and the Cigarette. — In an article in the *Medical Standard*, detailing the results of the physical examination of 9,901 officers and men of the Illinois national guard, Lieut.-Col. Charles Adams, speaking of the heart, says: "In the preliminary examinations of recruits made by the medical officers of the different regiments before leaving their home stations, many cases of 'bicycle heart' were discovered and not allowed to enlist. These were characterized by hypertrophy and dislocation of apex beat with irregular or rapid beat. In view of the sensational statement in the lay press that hundreds of young men had been refused enlistment in the United States volunteers at Springfield for 'tobacco heart' caused by cigarette smoking, it is worth noting that no case of the kind is recorded in the examination at Springfield, and we have no knowledge of any rejections for that cause in the preliminary examinations at Chicago or elsewhere in the State. We make this statement on behalf of the truth, not of the cigarette."

An Old but not Wholly Satisfactory Explanation of the Occurrence of Typhoid Fever.—Dr. J. Fred. Clarke, a surgeon of volunteers, writes to the *Philadelphia Medical Journal* from Camp Cuba Libre, in Jacksonville: "We have good water, hot sun, heavy rains and dews, the intemperance usual in armies, and some necessary work. The result is much typhoid fever and more of the shorter continued malarial fevers. . . . Whether this typhoid fever was brought here from State camps is a question often discussed. I find a prevailing opinion among the regular army surgeons that the typhoid bacillus is but a modified form of the bacillus coli communis, frequently so changed in its behavior by the conditions of army life."

Chicago as a Health Resort.—During July there were 1,938 deaths in Chicago from all causes, which makes the low annual death rate of 14.8 per 1,000 inhabitants, assuming that the estimate of population upon which these figures are based is correct. According to *The Tribune* of that city, the cool lake breeze has a direct effect upon the death rate, as is shown both by the figures of last year and by the figures of hot and cool periods of the July just past. During the first fifteen days of the month the temperature was four degrees lower than the twenty-seven years' average, while during the last sixteen days of the month the mean temperature was seven degrees higher than the average. The daily deaths were thirty per cent. more during the hot period than during the cool period. But the steady decrease in the city's death rate from year to year is undoubtedly due to the increasing cleanliness of the streets and alleys, and the improved sanitary conditions.

The Medical Society of Virginia.—The twenty-ninth annual session of this society will be held at Virginia Beach, August 30 and 31, and September 1, 1898. The president of the society is Dr. Lewis E. Harvie, of Danville, and the secretary Dr. Landon B. Edwards, of Richmond.

The British Society for the Prevention of Cruelty to Children reports that during the year 1897, 25,170 complaints were received by the society, leading to action in 18,779 cases, to prosecutions in 2,519, and that 96.55 per cent. of such prosecutions were successful. The number of children whose interests were involved in all these cases was 68,008.

The Hahnemann Monument.—Every visitor to the American Medical Association remembers the difficulties encountered by the Rush monument fund committee in its work. The statement has been made at these meetings that the homœopathic physicians of the country had already raised the amount necessary to erect a much finer monument to Hahnemann than the one contemplated for Benjamin Rush. Now comes the statement, says the *Columbus Medical Journal*, that the monument is finished, but that it is not in place and will not be until the homœopathic profession comes forward with the amount necessary to pay for it. What the delinquency amounts to is not stated, further than that "three dollars from each homœopathic physician in America would liquidate all claims and place the monument in Washington."

Reviews and Notices.

THE METHODIST EPISCOPAL HOSPITAL REPORTS. Volume I., 1887–1897. Edited by L. S. PILCHER, M.D., New York, and G. R. BUTLER, M.D., New York. Published by the Hospital. 1898.

THIS report consists of an interesting *résumé* of ten years' work at a large hospital, with papers on various topics by different members of the staff of the institution. The whole book is characterized by the excellence of its plates and the good general style of its make-up. The gynæcological cases reported by Dr. Pilcher are such as occur in the regular routine of any large service and do not require special attention in a review, although they will afford useful statistical information for the specialist in this department of surgery. Dr. Fowler's article on appendicitis is illustrated by several remarkably good colored plates of the appendix, showing various forms of inflammation which may affect that organ. The experience of the surgeons at this hospital with this disease indicates that it has become much more prevalent in ten years, or else that many cases formerly went unrecognized and were not sent to the hospital for operation. The latter explanation must be the correct one, and it is a favorable indication that knowledge of this disease is becoming widely disseminated, so that patients reach the operator in time without being treated a while beforehand for "acute indigestion." The relation of age and sex in the cases seems to be about the same as elsewhere.

Twenty-seven operations upon fractured patellæ are mentioned, and we regret that there are not given more particulars as to the ultimate result in respect to joint motility. The four cases of hip-joint exarticulation for sarcoma behaved in the way with which we are unfortunately familiar—one patient was living six months after operation, one died of shock, and two died very soon of metatasis or recurrence.

An analytical report of the fatal cases of typhoid fever will repay perusal, as will the paper on thermic fever and heat prostration. In the latter condition we may note that alcoholic stimulation was not used after the first day, but the other heart stimulants were found useful. This seems to accord with the experience of those who have seen the most cases of the disease. The obstetrical cases reported are such as are usually met with in hospital service, and require no special comment.

DISCOS DE MARFIL DESCALCIFICADO PARA LAS ANASTÓMOSIS Y REUNIÓN DEL INTESTINO EXTREMO CON EXTREMO. DR. R. MARTIN GIL, Medico-Director del Hospital Noble de Málaga. Pp. 7.

THE suggestion embodied in this pamphlet for the formation of an end-to-end anastomosis by the use of decalcified ivory plates held together by elastic bands may in some cases give us a convenient method for the accomplishment of our object. It seems, however, that this surgical procedure should be directed toward making the anastomosis as simple as possible, even if we should take a little more time in doing it. Many cases requiring the operation of anastomosis are seen far from places where we can get ivory plates or Murphy buttons, and with this in mind it appears to be better to direct our efforts toward making our suture methods as rapid, safe, and accurate as possible without the use of any kind of apparatus. Dr. Gil's discs are surgical novelties, but we cannot see that they present advantages over methods and apparatus which have already been suggested.

TWENTIETH CENTURY PRACTICE. An International Encyclopedia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. In Twenty Volumes. Volume XIV. "Infectious Diseases." New York: William Wood and Company.

THIS second volume upon the infectious diseases includes, besides the exanthemata, glandular fever, pertussis, cholera infantum and true cholera, dengue, beriberi, miliary fever, and Malta fever. The last-mentioned febrile affection will probably be more familiar to many readers by the name Mediterranean fever. Dr. David Bruce, of Pietermaritzburg, South Africa, surgeon-major of the British army and formerly professor at the Netley Army Medical School, has written a most entertaining and instructive chapter describing this fever and the conditions on which it depends. Scarlatina has been ably dealt with in one hundred and fourteen pages by Forchheimer, who also has written on rubella. Dawson Williams, of London, devotes sixty pages to measles, and covers the ground well. Whooping-cough has received attention at the hands of the late regretted Joseph O'Dwyer and of Nathaniel Read Norton. Koplik's bacillus is described, and, while doubt is entertained as to its identity, it is stated that the weight of evidence points in favor of its being the pathogenic germ of the disease. A short chapter on glandular fever by Dawson Williams gives credit to West, of Ohio, for an excellent description of the most widespread epidemic yet recorded. Cholera infantum well fell to the lot of A. Jacobi, and Theo. Rumpf, of Hamburg, it would seem, was wisely chosen to give an account of cholera from a modern standpoint. He does it in one hundred and fifty well-written pages. Dengue is briefly considered by Sir Joseph Fayrer, of London, and beriberi by De Azevedo Sodré, of Rio de Janeiro. The editor did well to select a French author to write upon miliary fever, and Professor Netter, of Paris, has given an entertaining description of this peculiar affection. The volume compares well with former issues in points of interest and completeness.

THE INTERNATIONAL MEDICAL ANNUAL AND PRACTITIONERS' INDEX. A Work of Reference for Medical Practitioners. Sixteenth Year. New York: E. B. Treat & Co. 1898.

THIS is a review of the medical literature of the year, having special reference to new remedies and newer methods of treatment. A feature of the present issue is the partial work of Shattuck on pathogenic bacteria, which will be completed in the next number. The part already given contains many interesting and instructive plates. This year's "Annual" is freely illustrated and contains a fund of general information.

DIE KRANKHEITEN DES MAGENS. Ein Lehrbuch für Aerzte und Studirende. Von DR. MAX EINHORN. Berlin: S. Karger. 1898.

THIS book is practically a German translation of the work by the same author recently published by Wm. Wood & Co. Those familiar with the English edition know what a valuable contribution to the literature of gastric diseases this has been, and it is safe to say that the work will be sufficiently appreciated abroad to warrant its having been translated and published in a foreign language. There are fifty-two illustrations, all of which clearly explain themselves. Though many similar works by German authors have appeared within recent times, still this one, on account of its clearness and practical import, cannot fail to find favor with even the scientific Germans.

YELLOW FEVER IN THE WEST INDIES. By IZETT ANDERSON, M.D. London: H. K. Lewis. 1898.

AFTER a residence of thirty-four years in the West Indies, the author has given the results of his practical experience during that time, in both the epidemic and sporadic forms of yellow fever. The book does not deal with theories and discussions, but presents a *résumé* of the extensive records kept by the writer, which were referred to in the RECORD'S editorial columns of May 14th.

FESTSCHRIFT GEWIDMET FILIPP JOSEF PICK aus Anlass der Vollendung seiner 25jahrigen Thatigkeit als Professor und Vorstand der k.k. dermatologischen Klinik in Prag. Redigirt von GEHEIMRATH PROF. A. NEISSER in Breslau. Wien und Leipzig: Wilhelm Braumüller. 1898.

THIS handsome souvenir of Professor Pick's twenty-fifth anniversary is given out as volumes xliii. and xliv. of the *Archiv für Dermatologie und Syphilis*. It has been prepared as a mark of honor, esteem, and kindly recollection by his colleagues and pupils. Each part contains somewhat over five hundred pages, the first having twenty-five plates, the second fifteen, showing rare and interesting states of special importance to the dermatologist. The "Festschrift" reflects much credit upon the many who have contributed to its existence and attractiveness, and the subject of the attention should feel gratified at this mark of the esteem in which he is held by his colleagues of all countries.

DOCTOR AND PATIENT. Hints to Both. By DR. ROBERT GERSUNY. Translated, with the permission of the Author, by A. S. LEVETUS, with a Preface by D. J. LEECH,

M.D., F.R.C.P., etc. Bristol: John Wright & Co. 1898.

To the young practitioner in particular, and to many of the older ones, this little book will commend itself, on account of its wealth of practical information and suggestion as to that attitude of physician and patient which will be conducive to the greatest mutual benefit. Those who read this little dissertation must agree with the writer of the preface, who says: "One cannot rise from the perusal of Dr. Gersuny's book without feeling better for the wise counsel he gives, and without having received an incentive to do that which is right and maintain at its highest point the honorable position of the profession."

Diseases of the Stomach. By William W. Van Valzah, A.M., M.D., and J. Douglas Nisbet, A.M., M.D. Illustrated. Philadelphia: W. B. Saunders. 1898.

Van Valzah and Nisbet present their own experience and the views of the leading authorities in this clearly and concisely written book on "Diseases of the Stomach." With regard to the nomenclature, the terms "adenohypersthenia" for "hyperchlorhydria," and "adenasthenia" for "hypochlorhydria" do not seem to us a needful innovation. The chapter on diet is complete and thorough. The last section, "The Vicious Circles of the Stomach," comprising two chapters ("Other Organs in Diseases of the Stomach" and "The Secondary Diseases of the Stomach"), is excellent and most original. As a good instance of the clear way in which the present work is written we may mention particularly the description of "vertigo a stomacho læso." As a whole we can recommend this book highly.

Transactions of the Vermont State Medical Society, 1897. Published by the Society.

While for the most part society reports contain a mass of dry and uninteresting facts, still this little volume presents much that will prove of both practical and theoretical import. One has but to read the exhaustive and excellent article on "The Modern Management of Diphtheria and Croup Cases," by Dr. A. Caillé, to feel fully repaid for having given this report a place in his library. Numerous other articles of a medical and surgical nature add to the value of the book.

Transactions of the New York State Medical Association. For the year 1897. Volume XIV. Edited for the Association by E. D. Ferguson, M.D., of Rensselaer County. New York: Published by the Association.

An interesting report, not only on account of the number of instructive articles, but because of the excellent arrangement of the entire subject matter, especially the chapter on the "Materia Medica, Pharmacy, and Therapeutics of the Year Ending October 1, 1897." The latter presents in alphabetical order the newer drugs of the past year, with a concise description of their uses and appropriate formulas for the same. Among other things there are memoirs of the late Dr. J. Lewis Smith and Dr. William T. Lusk, memoirs which should prove of more than passing interest to every medical man. The *tout ensemble* of this volume leaves nothing to be desired; the print is clear, the binding neat and attractive.

Recent Materia Medica and Drugs Occasionaly Prescribed. Notes on their Origin and Therapeutics. Fifth Edition. By F. Harwood Lescher, F.C.S. London: J. & A. Churchill. 1897.

Advance information is often of great value to the physician. This work of about two hundred pages, compiled from current literature for the most part, brings together those drugs and preparations which are likely to find a place in medicine, and tells what they are, so far as this is possible. The present edition has been revised up to 1897. Too many proprietary articles are noticed.

Die Hyperplasie der Rachentonsille und die adenoiden Vegetationen des Nasenrachenraumes. Von Dr. Gustav Abeles, Prakt. Arzt in Wien. Druck und Verlag von C. G. Naumann.

In the space of some one hundred pages the author fully describes the symptoms, diagnosis, complications, and methods of operation on the pharyngeal tonsil of Luschka and the adenoid vegetations at the vault of the pharynx. This is all given from the standpoint of the general practitioner rather than of the specialist, and should therefore prove of value to the greater number of physicians. All in all, this little work offers very interesting and instructive reading-matter.

The Year-Book of Treatment for 1898. A Critical Review for Practitioners of Medicine and Surgery. Philadelphia and New York: Lea Brothers & Co.

This is the fourteenth annual appearance of an attractive retrospect. When it is remembered that such editors as Reginald Harrison, Edmund Owen, Alfred Cooper, Ernest Lane, Handfield-Jones, Malcolm Morris, Willoughby, and others supervise the various departments, one may be sure of results such as have made and kept this year-book popular.

The Purification of Public Water Supplies. By John W. Hill, Consulting Engineer, Member American Society of Civil Engineers, etc. New York: D. Van Nostrand Company. 1898.

The author has already put himself before the scientific public by his lectures and writings on water and the ways of keeping it pure for public supply. The present volume embodies the views expressed elsewhere at various times. All having the public health in charge would do well to make themselves familiar with the results of research and experience here embodied. The portions devoted to filters and filtration might well be read by those who will be responsible for the health of our army in the immediate future.

Notes on Military Hygiene for Officers of the Line. A Syllabus of Lectures formerly Delivered at the United States Infantry and Cavalry School. By Alfred A. Woodhull, LL.D. Princ., Lieutenant-Colonel, Medical Department, United States Army. New Edition, Revised and Augmented. First Thousand. New York: John Wiley & Sons. London: Chapman & Hall, Ltd. 1898.

This is a very timely little manual and one which contains much useful information to military men. The one hundred and seventy-one pages neatly bound make a book of convenient pocket size, which should prove acceptable to officers of the line or to the private.

An American Text-Book of Genito-Urinary Diseases, Syphilis, and Diseases of the Skin. By L. Bolton Bangs, M.D., Consulting Surgeon to St. Luke's Hospital and to the City Hospital, New York, and to the Methodist Episcopal Hospital, Brooklyn; Visiting Genito-Urinary Surgeon to St. Mark's Hospital, New York; late Professor of Genito-Urinary and Venereal Diseases, New York Post-Graduate Medical School and Hospital; and W. A. Hardaway, A.M., M.D., Professor of Diseases of the Skin and Syphilis, in the Missouri Medical College, St. Louis; Physician for Diseases of the Skin to the Martha Parsons Hospital for Children and to St. John's Hospital, St. Louis. Illustrated with 300 Engravings and 20 Full-Page Colored Plates. Philadelphia: W. B. Saunders. 1898.

In the compilation of this work the editors have exhibited care and painstaking discrimination. The choice of authors has been in the main good. Various articles are written in a clear, pleasing style. The work is progressive, concise, and yet quite complete.

The first half of the book deals with diseases of the genito-urinary tract, both inflammatory and surgical, and opens, very properly, with an introductory chapter on urinary analysis. Somewhat surprising to the reader, in a work of this order, is the amount of space devoted to surgical conditions and their treatment; it is commendable, however, in that the most recent surgical procedures have been incorporated.

The section on syphilis is subdivided according to the regional manifestations of the disease, a classification that might properly be spoken of as specialistic syphilology. The remainder of the book, devoted to dermatology, contains all the information regarding diseases of the skin required of the medical student or necessary for the general practitioner. In its entirety the work is a handy reference volume, and one that may well find a place in any medical library.

The Surgical Complications of Typhoid Fever. By William W. Keen, M.D., LL.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia; Vice-President of the College of Physicians of Philadelphia, etc. Based upon Tables of Seventeen Hundred Cases Compiled by the Author and by Thompson S. Westcott, M.D., Instructor in Diseases of Children, University of Pennsylvania; Visiting Physician to the Methodist Episcopal Hospital, Philadelphia. With a Chapter on the Ocular Complications of Typhoid Fever, by George E. de Schweinitz, A.M., M.D., Professor of Ophthalmology, Jefferson Medical College; Professor of Diseases of the Eye, Philadelphia Polyclinic, etc.; and as an Appendix the Toner Lecture, No. V. Philadelphia: W. B. Saunders. 1898.

The title page tells the whole story and should be sufficient guarantee that the twenty-one chapters will present a fund of information of an important kind. The list of illustrations includes four plates and nine figures. There are three hundred and eighty pages and an index. The Toner lecture, on the surgical complications and sequels of the continued fevers, was delivered by Dr. Keen in 1876. It makes good reading to-day.

Hospital Formulary of the Department of Public Charities of the City of New York. Fifth Edition, Revised. 1898.

The board and chemist Rice are to be congratulated upon the output of so attractive a list of formulæ, to say nothing of the information under "Miscellaneous Subjects."

Diabetes Mellitus and its Treatment. By R. T. Williamson, M.D., M.R.C.P.; Medical Registrar, Manchester Royal Infirmary; Hon. Med. Officer, Pendleton Dispensary, Salford Royal Hospital; Assistant to the Professor of Medicine, Owens College, Manchester. Edinburgh and London: Young J. Pentland. 1898.

The name of the author has come of late to be familiar to American readers by reason of the test for diabetic blood, devised by him and known by his name. As a result of some ten years' experience in the disease, the present work has been produced. The subject has been entered into at much greater length than one could look for in a system of medicine or a text-book. There are four hundred and seventeen pages, including the indexes. There are eighteen illustrations, two of which are colored. There are fourteen chapters, one of which is on the pathological anatomy, but the anatomical lesions are briefly referred to in each chapter besides. Experimental diabetes and glycosuria receive considerable attention and the various causes of the latter are considered at some length. The work is well and carefully written, and the writings of such well-known authors as Seegen, Ebstein, von Noorden, Pavy, Saundby, and many others have been freely quoted. The publishers have produced an attractive volume.

Excretory Irritation and the Effect of Certain Internal Remedies on the Skin. By David Walsh, M.D. Edin.; Physician, Western Skin Hospital; Clinical Assistant, Blackfriars Skin Hospital, etc. New York: William Wood and Company. 1898.

The substance of this work represents a graduation thesis. By excretory irritation the author intends to have understood irritation of either epithelial or nerve cells.

In a brief monograph of sixty-five pages are discussed the relation of inflammations to the excretory functions of the body.

Naturally skin diseases and the effects of drugs upon the excretory apparatus enter largely into the question as it has been considered by the author. Dermatologists will find many points of interest in this little work, and it will also be of interest to scientific men generally.

Medical and Surgical Report of the Presbyterian Hospital in the City of New York. Volume III. January, 1898. Edited by Andrew J. McCosh, M.D., and Walter B. James, M.D. New York: Trow Directory Printing and Bookbinding Company. 1898.

The embodiment in a periodical report of the work done in a large hospital cannot fail, if well done, to contain much that is useful. In this report of the Presbyterian Hospital we have a series of articles by men connected with the institution, written from material drawn from hospital sources. Dr. Thacher has contributed a careful paper upon "Hydrochloric Determinations," and a paper by Dr. James, on the "Bacteriology of the Blood in Disease," contains much of value to those interested in this special branch. There is a long series of examinations in the most important diseases, rheumatism, typhoid fever, tuberculosis, and meningitis among others. A subject of more local interest is the one of malarial fevers in the city of New York, and as the disease seems in this city to present very often unusual and irregular manifestations, careful compilation of observations upon it must prove useful. We have in this report an interesting paper upon the subject of intermuscular operations for appendicitis, written by Dr. Briddon. Many suppurative cases were operated upon by this method, which, when it was first suggested, was believed to be suitable only to non-purulent instances of the disease. However, the success of the method seems to have been marked in many of these cases, and it will be interesting to note whether any of these patients develop hernia, and whether in suppurative cases, when it is possible to use this method, there is any less tendency to this condition than by other operative methods. Forty-one hysterectomies and fifteen abscesses of the brain make a great deal of material, but these are the cases reported and described in this volume. Many of the other papers are interesting, and the book contains much material which will prove useful from a statistical point of view.

Inflammation of the Bladder and Urinary Fever. By C. Mansell Moullin, M.D. Oxon., F.R.C.S., etc. Philadelphia: P. Blakiston, Son & Co. 1898.

The author has embodied in this volume his own ideas and experiences. The first sixty or seventy pages are devoted to a discussion of the symptomatology and etiology of cystitis of various kinds, from simple cystitis to suppurative cystitis, with the presence of various forms of micro-organisms. These pages present the subject in a clear and comprehensive manner, and the author has given us a satisfactory classification of the various conditions he is discussing, upon which he seems to have some very positive ideas. The pages devoted to urinary fever give a very clear description of the various conditions grouped under this general head, but we question the advisability of using such a term as "urinary" fever. The manifestations are entirely of a septic nature, due to the entrance of various organisms into the body and to products of their metabolism, and the urine is merely a nutrient medium for the growth of these organisms. The only thing to be said in favor of the term is that it is convenient. The author's four forms of this condition cannot be very well marked off from each other, except the first one, which is undoubtedly distinct, and may have some nervous element in its causation. The bacteriology of cystitis is gone into in an interesting way, and considerable prominence is justly given to the bacterium coli. The treatment of the various forms of cystitis is presented satisfactorily, but we think that there is nothing in this part of the book requiring extended comment. The treatment of cystitis can be summed up in free drainage and asepsis, with all that those terms imply.

Diseases of Women. A Practical Text-Book. By H. N. Lewers, M.D. Philadelphia: P. Blakiston, Son & Co. 1898.

This is a useful handbook which will doubtless be valuable to the student of gynæcology. The chapters are well arranged and the classifications such as will appeal to the student class of readers. The book has been considerably revised and the chapter on extra-uterine gestation is improved in its re-written form. The style of composition is perhaps a little more colloquial than is desirable in a scientific treatise, especially in the clinical histories, some of which savor rather too much of the red-flannel and sage-tea days of gynæcology in their choice of words.

The illustrations all through the book are satisfactory and there is a good index. The author clings to the mongrel "ovariotomy" rather than use the more correct "oöphorectomy." But medical men will apparently never be purists in the matter of language.

Clinical Report of the Rotunda Hospitals. For One Year, November 1, 1896, to October 31, 1897. By R. Dancer Purefoy. Dublin. 1898.

A short and running account of the interesting cases of the year is here presented. The report could be read by the obstetrician to advantage, and has the merit of being concise.

A Manual of Instruction in the Principles of Prompt Aid to the Injured, Including a Chapter on Hygiene and the Drill Regulations of the Hospital Corps, U.S.A. Designed for Military and Civil Use. By Alvah H. Doty, M.D., Health Officer of the Port of New York. Second Edition. New York: D. Appleton and Company. 1898.

This is a very excellent short manual for those who are liable to come in contact with large bodies of people exposed to accidental risks. The principles of "What to do" and "How to do it" are here well presented. At the present time, when our soldiers are exposed to the dangers of a southern climate and a strange wilderness, the facts here presented cannot fail to be of service to them, and when the high average of intelligence of our men is considered we might well wish the book a wide reading.

Electro-Physiology. By W. Biedermann, Professor of Physiology in Jena. Translated by Frances A. Welby. Volume II. London and New York: Macmillan and Company. 1898.

To those who have had the opportunity to see the first volume of Biedermann's "Electro-Physiology" this second volume will prove of added value. In it the same scholarly and minute survey of the fundamental electro-physiological facts is maintained. For those to whom the work is new, the second volume stands out as a separate and complete treatise on biological electrical phenomena. Its six chapters consider electromotive action in vegetable cells, structure and organization of nerve, conductivity and excitability of nerve, electrical excitation of nerve, electromotive force in nerve, electrical fishes, and electromotive action in the eye, with a revision of section four of the fourth chapter of the first volume, dealing with secondary electromotive action in muscle.

No other book with which we are acquainted brings together in such philosophic form the numerous important facts which are to be found in these well-printed and well-bound volumes.

Clinical Lectures on Diseases of the Heart and Aorta. By George William Balfour, M.D., LL.D., F.R.C.P., F.R.S., Consulting Physician to the Royal Infirmary, Edinburgh, etc. Third Edition. London: Adam and Charles Black. 1898.

This volume is essentially a clinical one and is of the best type of such. In this the third edition much has been rewritten of the earlier editions and additions have been made, so that there are now some five hundred pages in the work. The treatment of the subject is easy and clear, the different chapters being presented in the form of lectures, of which there are seventeen. The opening lecture is an especially good one, on the diagnosis of cardiac disease with special reference to the symptoms and physical signs. Lectures two to nine discuss the various valvular lesions; lecture ten, some of the functional disorders of the heart, such as tachycardia, palpitation, bradycardia, etc. The secondary results of cardiac disease are well presented in the next lecture, and angina pectoris and other forms of cardiac pain in lecture twelve. Diseases of the heart other than valvular diseases form the subject matter of lecture thirteen, and the next lecture is devoted entirely to the subject of treatment. The final chapters embody the author's ideas on the subject of aneurism, a subject in which he is especially at home, having enjoyed an exceptionally wide experience in that line.

The book makes close reading, but the style is good and the mechanical get-up of the work is excellent.

Epidemic Cerebro-Spinal Meningitis and its Relation to Other Forms of Meningitis. A Report of the State Board of Health of Massachusetts. By Dr. W. T. Councilman, Dr. F. B. Mallory, and Dr. J. H. Wright. Boston. 1898.

In this contribution to scientific medicine the commonwealth of Massachusetts again shows her appreciative intelligence for the cause of true progress. This report is a model of its kind and is worthy of the highest enconiums, both to the authors and to enlightened legislative bodies that give occasion to such endeavors.

Atlas of Methods of Clinical Investigation, with an Epitome of Clinical Diagnosis and of Special Pathology and Treatment of Internal Diseases. By Dr. Christfried Jakob, former First Assistant in the Medical Clinic at Erlangen. Authorized Translation from the German. Edited by Augustus A. Eshner, M.D., Professor of Clinical Medicine in the Philadelphia Polyclinic, Physician to the Philadelphia Hospital, etc. Philadelphia: W. B. Saunders. 1898.

The designation "atlas" in this instance is surely warranted in consideration of the fact that there are no less than one hundred and eighty-two colored illustrations and sixty-four pictures in the text. Unquestionably accurate illustrations aid greatly in the retention of clinical conditions and fix them better in the mind than mere descriptions can do. Supplementing the plates is an epitome arranged as a compendium to be used in conjunction with larger text-books. The author's words have received rather free translation at the editor's hands and an index has been added. No doubt this American reproduction will be well received by students and recent graduates.

The Middlesex Hospital. Reports of the Medical, Surgical, and Pathological Registrars for the Year 1896. London. 1897.

This report contains much interesting though not very get-at-able material. It consists for the most part of pages of abstracted histories and abstracts from the pathological reports. On the whole the report is of the statistical type.

The Extra Pharmacopœia. Revised in Accordance with the British Pharmacopœia, 1898. By William Martineale, F.L.S., F.C.S., Member of Council of the Pharmaceutical Society, and late Examiner. Serotherapy, Organotherapy, Medical References, and a Therapeutic Index, by W. Wynn Westcott, M.B., Coroner for North-East London. Ninth Edition. London: H. K. Lewis. 1898.

We are glad to welcome a new edition of this accurate and serviceable therapeutic manual. It contains notices of several drugs introduced into practice during the past three years; orrhotherapy and opotherapy are naturally more fully treated than in the eighth edition, and certain changes have been made to bring the work into accordance with the new edition of the British Pharmacopœia. We have commended the work so often that we have nothing to add further than to say that it maintains its excellence.

Rheumatoid Arthritis. Its Pathology, Morbid Anatomy, and Treatment. By Gilbert A. Bannatyne, M.D. Glas., M.R.C.P. Ed.; Hon. Physician to the Royal United Hospital, and to the Royal Mineral Water Hospital, Bath. Second Edition. Illustrated. Bristol: John Wright & Co. 1898.

In the new edition of this excellent monograph the author reaffirms, and with greater emphasis than before, his belief that this is a microbic affection, at least in its acute form; the chronic form being probably of a degenerative nature. The chapter on treatment is one that will afford great comfort to the reader who can inoculate himself with a little of the author's optimism. He believes that, so far from rheumatoid arthritis being incurable, "all cases, if recognized early, are curable, and if, in the later stages, not curable, yet the attack can be arrested, and further damage prevented."

Les Premiers Soins à Donner en Cas d'Accidents Subits. Conférences du Dr. Frédéric von Esmarch. Traduit par le Dr. Eugène Van Oye. Troisième Édition Française. Bruxelles: A. Manceaux. 1897.

This is a French translation of Esmarch's well-known and highly valued work on first aid to the injured. The original is recognized as a classic and a model for all treatises on this important theme.

Atlas of Legal Medicine. By Dr. E. Von Hofmann, Professor of Legal Medicine and Director of the Medico-Legal Institute at Vienna. Authorized Translation from the German. Edited by Frederick Peterson, M.D., Clinical Professor of Mental Diseases in the Woman's Medical College, New York; Chief of Clinic, Nervous Department, College of Physicians and Surgeons, New York. Assisted by Aloysius O. J. Kelly, M.D., Instructor in Physical Diagnosis, University of Pennsylvania; Adjunct Professor of Pathology, Philadelphia Poly-

clinic; Visiting Physician to St. Mary's and St. Agnes' Hospitals; Pathologist to the German Hospital, Philadelphia. Philadelphia: W. B. Saunders. 1898.

THIS is one of the well-known series of Lehmann's Medicinische Handatlanten. There are one hundred and ninety-three illustrations in black and fifty-six colored plates, each one with descriptive text. The atlas may be most profitably used as a complement to any of the standard works on medical jurisprudence.

YELLOW FEVER. Clinical Notes by JUST TOUATRE, M.D. (Paris), former Physician-in-Chief of the French Society Hospital, New Orleans; Member of the Board of Experts, Louisiana State Board of Health. Translated from the French by CHARLES CHASSAIGNAC, M.D., President New Orleans Polyclinic; Editor New Orleans Medical and Surgical Journal. New Orleans: New Orleans Medical and Surgical Journal, Limited. 1898.

ANY work dealing with tropical diseases is timely now, and especially is one treating of yellow fever. American sanitarians will soon have before them the Herculean task of removing the accumulated filth of centuries in Havana and other Cuban cities, and of exterminating the yellow plague which has so long battened upon it. Dr. Touatre's clinical description of yellow fever is graphic, and even the inexperienced should have little difficulty, with this book in hand, in recognizing a case of the disease. The rules and suggestions for treatment are sound and practical, and in the present state of our knowledge one will not err in following them. The book was written in French, as the author feared he had not sufficient mastery of English to trust himself in the use of it, but the translation leaves nothing to be desired, the French epigrammatic style being well preserved in correct and idiomatic English.

EPILEPSIA E CRIME. Par JULIO AFRANIO PEIXOTO. Bahia: V. Oliveira & C. 1897.

THIS is a graduation thesis for the degree of doctor of medicine at the Bahia (Brazil) Medical School, and is a well-digested review of the literature, chiefly French and Italian, of the subject.

DISEASES OF THE STOMACH. A Text-Book for Practitioners and Students. By MAX EINHORN, M.D., Adjunct Professor of Clinical Medicine at the New York Post-Graduate Medical School and Hospital; Visiting Physician to the German Dispensary. Second Revised Edition. New York: William Wood and Company. 1898.

THE well-merited popularity of this work, which, without making invidious comparisons, may justly be called the best and most practical treatise in the English language on gastric affections, is shown by the necessity of a second edition within little over a year. The author has improved the opportunity to make the few alterations which the advances in this branch of medicine during the past twelve months have made advisable.

CHIRURGIE DE L'INTESTIN. Par M. JEAUNEL, Professeur de Clinique Chirurgicale à la Faculté de Médecine de Toulouse. Paris: Institut de Bibliothèque Scientifique. 1898.

THIS is a fairly exhaustive treatise upon the surgery of the intestine. In his remarks upon anæsthesia, the author emphasizes the desirable qualities of chloroform in abdominal operations, though he recognizes the fact that ether is safer. The various intestinal sutures are described and discussed, and good diagrams of them are given. The descriptions and figures of the various intestinal operations are good. Especially good are the descriptions of methods of intestinal resection and suture, and among these we might specify that of the method of Maunsell, one which we rarely see clearly described. There is a long chapter upon preternatural anus, with diagrams of the different forms of that condition, and figures of the many instruments which have been suggested as useful in the treatment of it. This part of the work, as well as some others, would have easily stood a little condensation. The chapter on appendicular troubles is by no means up to date, and the author would learn much from an examination of the American literature upon this subject. The descriptions of the various methods of resecting the cæcum are satisfactory, and, as is the case throughout the work, the illustrations are good. On the whole, the book may be said to cover the field in a satisfactory manner.

Society Reports.

THE BRITISH MEDICAL ASSOCIATION.

Sixty-Sixth Annual Meeting, Held in Edinburgh, July 26, 27, 28, and 29, 1898.

(Special Report to the MEDICAL RECORD.)

(*Continued from page 240.*)

GENERAL SESSIONS.

Third Day—Thursday, July 28th.

AFTER a busy morning in most of the sections, the third general meeting assembled in McEwan Hall on Thursday afternoon, to hear the address in surgery. Sir T. Grainger Stewart presided.

An Investigation of Blackwater Fever. — DR. SAUNDBY announced that he had a resolution to bring forward at the request of the section on tropical diseases. This resolution had been passed by the section quite unanimously, and was considered most important. It urged the government to send out an expert pathologist to investigate the subject of blackwater fever. The council agreed with the section, and he therefore proposed the adoption of the resolution at this general meeting of the association. The motion was seconded by Professor Chiene, and at once agreed to.

The Address in Surgery was then delivered by PROFESSOR ANNANDALE, regius professor of clinical surgery in the University of Edinburgh. The subject was "The Present Position of Surgery" (see page 208).

MR. THOMAS BRYANT, of London, moved, and PROFESSOR BENNET, of Dublin, seconded a vote of thanks, which was carried by acclamation.

Fourth Day—Friday, July 29th.

The fourth or concluding general meeting was held on Friday morning, when the

Address in Psychology was delivered by SIR JOHN BATTY TUKE, M.D., president of the Royal College of Physicians of Edinburgh (see page 209).

A vote of thanks for the address was moved by DR. BLANDFORD, seconded by DR. MACDONALD, of New York, and carried unanimously.

Then came the concluding business of the association, the usual votes of thanks for the manner in which local bodies and others contributed to the success of the meeting. This year the series of votes seemed more formidable than usual, but all were duly honored before the members scattered to take part in the garden parties and other entertainments, which were unexhausted and continued throughout the day, only to give place to the excursions on the day following.

The votes of thanks included the lord provost, magistrates, and council for the welcome in the McEwan Hall; the lord provost and Mrs. Thomson for their reception in the Museum of Science; the dean and chapel royal for the service in the cathedral, and Dr. Whyte for his sermon; the university for the use of the splendid buildings; the two royal colleges and the Medical Society; the Duke of Buccleuch, Marquis of Bute, Earl of Hopetown, and numerous others for hospitable entertainments; Lady Grainger Stewart for looking after the comfort of the ladies; the managers of the Royal Infirmary and other hospitals and public institutions. Even this list is hardly complete, but it expresses to some extent the obligations of the association. A cordial vote of thanks to the president, to which Sir Thomas briefly replied, wound up the proceedings.

SECTION ON TROPICAL DISEASES.

First Day—Wednesday, July 27th.

President's Address.—The session was opened with an address from the president, Dr. Patrick Manson, who drew attention at the outset to the remarkable progress which had been made during the last twenty years in our knowledge of diseases prevailing in the tropics. He said that since the discovery of the parasite of malaria by Laveran in 1880, the study of tropical medicine had become so extensive as to be in itself sufficient work for a lifetime, and consequently, like many other departments of science, was becoming day by day more specialized. Every year the volume of discovery increased, new fields of inquiry were constantly being opened up, and pathologists were beginning to realize the important fact that just as the fauna and flora of the tropics were infinitely richer in species than were those of the temperate zones, so the pathological fauna and flora of the tropics and the diseases to which they gave rise were also infinitely more numerous than their congeners of cooler climates. From a pathological point of view, therefore, he continued, there was abundant justification for the initiation of this section. As members of the special tropical section, his hearers had three distinct duties to perform. In the first place, they must work for the affiliation and organization of the five or six thousand British practitioners who, more or less directly, were interested in tropical practice. Secondly, they had to see that those who proposed to join their ranks in the future were properly educated in their special branch. All of them felt acutely the backward state of their educational system, in its bearing on tropical medicine, and they must insist upon its improvement. Lastly, they had to discuss the problems of tropical diseases. Though much had been done in recent years, that which had been accomplished had but served once more to show that there was no finality in research. Laveran's discovery had illuminated many things that were dark before, but it had also opened out new problems and shown dark spots of ignorance hitherto unsuspected. He had left untouched the practical aspect of that important subject, the etiology of malaria. Beyond that which the studies of Ross had revealed, which would be described in a paper to be read later, they still knew absolutely nothing of the malaria parasite as it existed outside the human body or of the exact physical conditions that caused it after months or even years to spring into active pathogenic life. Again, that other great tropical disease, or rather group of diseases, which they called dysentery, was still, as regarded many of its forms, their causes and their treatment, a sealed book. The pathology of liver abscess was still, as it had ever been, a *quæstio vexata*. They had just begun to know a little about the symptoms, epidemiology, and pathology of beriberi; they did not know its cause. Filariasis, ankylostomiasis, distomiasis, were all new subjects bristling with obscurities as well as with practical points in prevention and treatment. There was plenty of work for them to do. These were not a tithe of the problems of tropical pathology calling for consideration. Every one who had tried to work in that field must have felt dimly that the recognized and named diseases of the tropics were far outnumbered by the unnamed and undifferentiated diseases. In all pathology there was no such field for fruitful original research and discovery as tropical medicine. He hoped that the tropical section might become a permanent feature in the annual meeting of the association.

Unclassified Fevers of the Tropics.—The first subject for discussion in this section was the unclassified fevers of the tropics. This was opened by Brigade-Surgeon Lieutenant-Colonel Crombie, I.M.S., who gave a very full classification of tropical fevers as he had seen them, and described at considerable length their several forms, dwelling especially on those which were rather indefinite and therefore difficult to differentiate.

The discussion was taken part in by Dr. Sambon, Captain Hughes, Major Baker, Drs. Arnott, Thornkill, Cousland, and Cantlie. Most of the speakers seemed agreed that climatic fevers should be separated from malaria, and it was suggested that there was another class which might well be differentiated from either of the two. The general opinion seemed to be that the theory which attributed ardent fever to infection was not in accord with Indian experience.

The Habitat of Malaria.—Dr. Andrew Davidson then read a paper on the malarial problem in its epidemiological aspects, showing that the disease was by no means so restricted in its area as was sometimes supposed. Even in 66° N. latitude malaria was not unknown, and he gave some account of it as it occurred on the shores of the Gulf of Bothnia.

Dr. Manson remarked on the fact that pigment was found in a large percentage of normal lymphocytes, and he described the form in which it was found and the danger of confusing anatomical and pathological appearances.

Dr. Thin exhibited a specimen of a parasite from a case of pernicious fever in British Guiana which had been sent to him by Dr. Daniels.

Malarial Disease of the Eye.—Surgeon-Major Yarr, A.M.S., then read an important paper on malarial affections of the eye—a subject in which much interest was expressed, but which elicited no discussion.

Then came a more practical paper by Surg.-Maj. J. H. T. Walsh, I.M.S., on the "Clinical Aspects and Treatment of Malarial Fever."

Surgeon-Captain Buchanan, I.M.S., read a paper on "Cerebro-Spinal Fever as Seen in India."

Blackwater Fever.—Dr. Sambon described the ravages of this disease in tropical Africa, and said that he thought it was most likely a specific disease—probably allied to the hæmoglobinuria of cattle, and caused by a parasite classed between protozoa and bacteria. Dr. Sambon did not believe that it was merely an aggravated form of malaria, nor did he accept the recently propounded hypothesis that it was brought on by dosing with quinine.

The section adopted a resolution that this fever ought to be carefully studied on the spot by a commission of experts sent for the purpose. This resolution was ordered to be sent to the council of the association.

In connection with this subject, there was present a deputation of missionaries from the west coast of Africa, to urge the association to use its influence to induce the government to institute an inquiry into blackwater fever by means of experts sent for the purpose. A movement in this direction has already been taken at the request of the Blantyre and Livingstonian missions, as well as of the African Lakes Corporation, and Lord Salisbury has favorably responded and a conference has been held at the foreign office. In Northern Rhodesia and in Uganda the ravages of the disease have been felt by officers and sailors on the lakes, rivers, and coasts, and officials of the government and company, as well as by missionaries and planters. The strongest and healthiest young men continually fall victims to blackwater fever.

Dr. MacVicar reported that every week some European died of the disease. In the last nine months the Universities Mission had lost four men, and three others had been invalided home. He said that planters died off like flies with it, and he desired a well-equipped bacteriologist to be sent out for a year

or two or till he could elucidate the causes of the disease.

Dr. G. Smith, secretary of the Free Church Mission, said that both death and invaliding from blackwater fever were of constant occurrence in British Central Africa. Two years ago the committee sent out Dr. Ramsay and supplied him with bacteriological apparatus to investigate and report upon this fever. Unfortunately he had himself suffered from three attacks of it and had been obliged to return. He reports that there was urgent need of expert investigation.

The secretary of the African Lakes Corporation said that five of its employees had died since January —three of them from this form of fever—while another had been invalided from it. All four were young, strong, healthy men. In one year the deaths from this fever amounted to 5.42 per cent. of the whole European population, without taking into account those that were invalided home; while the most recent return showed that last year the mortality amounted to sixteen per cent. of the European residents.

With these facts before them, which were already known to most members of the section, no time was lost in the adoption of the resolution.

Second Day—Thursday, July 28th.

Dr. Patrick Manson, President, in the Chair.

Beriberi in Temperate Climates. — Dr. Conolly Norman, superintendent of the Richmond County Asylum, Dublin, read a paper with this title. Dr. Norman showed that beriberi had been met with in northern Germany; in Suffolk County Asylum, England; in the Richmond County Asylum, Dublin; in the States of Arkansas and Alabama, U. S. A.; and in Newfoundland during the last few years. The outbreak in Dublin, as in England, had been confined to pauper lunatics, but in Dublin several of the nurses in attendance had been attacked. The first appearance in Dublin was in 1894, when a severe outbreak occurred, and again a still more severe recrudescence took place in 1896–97. In all some five hundred and thirty-four cases had been recorded, with forty-four deaths. The cases under Dr. Conolly Norman's care in Dublin showed the typical symptoms and signs of beriberi as they occurred in tropical countries, and there could be no question as to the diagnosis. As to the mode of infection, no explanation of any kind could be given. Rice had been held as a possible source, but very little rice was consumed and there was no difference between the quality or kind of rice supply of the pauper lunatics and that used elsewhere in the city. Ling, a dried form of which was presumably obtained from Newfoundland, where the fishermen were known to suffer from beriberi, was also looked upon with suspicion. This fish was first used at the Dublin Asylum in 1894, the year of the outbreak, but no fish of the kind was being actually consumed previous to or at the time of the appearance of the disease. One patient, who had been in the asylum ten years, had, or was supposed to have had, beriberi in the far East in 1857. That this case should have caused an outbreak thirty-seven years subsequently to infection seemed improbable. In regard to the symptoms, Dr. Norman agreed with Grimm that there were an initial fever and a period during which the knee jerk was exaggerated. This was succeeded by absence of knee jerk, numbness and loss of sensation in the extremities, followed by tenderness on pressure, at times quite acute.

Dr. Manson said that by personal examination he had confirmed the diagnosis of beriberi in the cases mentioned by Dr. Norman. He thought that beriberi was not such a rare disease in temperate climates as was generally believed, and that a more accurate knowledge of the disease would in all probability dis close its presence more frequently.

Dr. Norman, in reply to questions put by Mr. Cantlie, stated that bacteriologic and microscopic examination of the blood gave negative results, and that the cases of what looked like permanent contractions in the limbs were prolonged but not permanent.

Dr. Osler, of Baltimore, said that beriberi was still prevalent in Newfoundland, and that a few cases found their way to the United States from Newfoundland as well as from the West Indies, Cuba more especially. He did not agree with Dr. Manson that a disease so pronounced in symptoms and epidemicity was at all likely to escape detection.

Pellagra.—Dr. Sandwith, of Cairo, read an abstract of a paper on this disease as met with in Egypt. He contended that the disease closely resembled the Italian variety and that it arose from the same cause —diseased maize. He objected to pellagra being considered a mere skin disease, and showed by a record of cases and by photographs that the cutaneous affection was only an expression of, or coincident with, the constitutional affection. Patients in time wasted, became depressed, and frequently ended their days in a lunatic asylum. The photographs exhibited showed clearly that the skin was affected only where directly exposed to the sun's rays. As regards treatment, Dr. Sandwith recommended rest, mixed diet, no maize, cod-liver oil, fresh bone marrow, baths, and emollients.

The Treatment of Acute Dysentery.—Dr. Sandwith then read a paper on this subject, which caused a keen discussion. He advocated enemata of various kinds, with sulphate of magnesium by the mouth in repeated doses.

Dr. Osler, of Baltimore, contended that the greatest objection to enemata in acute dysentery was the pain and exhaustion caused by their administration. To prevent the pain attending enemata in dysentery he found that previous application of cocaine was effective. He had used the double tube for washing out the rectum in preference to other methods. Ipecacuanha, although to be recommended in many forms of dysentery, was wellnigh useless in several—such as the amœbic form.

Dr. Bentley, of the Straits Settlements and Cairo, advocated the use of salol as an intestinal disinfectant.

Dr. Banne, of British Guiana, held that every case of dysentery had to be dealt with on its own merits; in some simple rest effected a cure, and in others salol, beta-naphthol, or alcohol proved advantageous.

Dr. Prentice stated that in Central Africa large doses of ipecacuanha were usually effective.

Surgeon-Major Davidson said that until the pathology of dysentery was better known, its treatment was necessarily empiric and had to vary with the individual case.

Brigade-Surgeon Lieutenant-Colonel Cromlie, of the Indian medical service, warned practitioners that not every case of intestinal flux with blood meant dysentery, and that many cases of catarrh with blood were classed as dysentery. He had found chloral, in gr. xx. dose, an excellent preliminary to the administration of ipecacuanha, which latter drug was in many cases highly efficient.

Sir Joseph Ewart, late of the Indian medical service, said he was astonished to hear ipecacuanha so lightly spoken of as a remedy in acute dysentery. He was in India when the drug was first introduced as a remedial agent, and by comparing the mortality statistics before and after ipecacuanha was used, he had learned how great the benefits had been and how immensely the death rate was lowered. Further, he believed that the timely use of ipecacuanha would prevent such sequels as liver abscess and chronic dysentery.

Unsanitary Environment the Cause of Yellow Fever and Bubonic Fever. — Inspector-General Turnbull, of the royal navy, presented a carefully worked out and instructive compilation of facts collected chiefly from naval records, and showed that environment and not infection was the cause of yellow fever.

The following papers were read by title: "A Leaf from the Early History of Bacteriological Discovery," by Dr. Andrew Smart, LL.D., vice-president of the section; "On the Training of Regimental Officers in the Prevention of Disease in the Army in Tropical Climates," by Capt. Louis Hughes, R.A.M.C.; "Surgery in the Tropics," by J. Cantlie, F.R.C.S., London.

Third Day—Friday, July 29th.

Dr. Andrew Davidson, Vice-President, in the Chair.

Plague.—Dr. Simpson read a paper on the plague in India. He paid a high tribute to the courage and devotion of medical men, European and native, in dealing with plague in India, and also to the nurses, native assistants, soldiers, and civilians who volunteered their help. Plague was not endemic to India, but was as much an importation there as it was in Europe. Hundreds of years sometimes intervened between recorded epidemics, and as had happened in India, so a recurrence might happen in Europe, for it was but little over two hundred years since plague visited Britain, and within that period recurrences on the continent had been many. The present virulent epidemic in India was not of the same nature as the plague commonly termed Levantine. The latter form was a dying form of the disease, but slightly inclined to spread, and marked by a small death rate. Plague had always shown a preference for the northwestern countries of India. It had been found, however, in Calcutta in former times, and it looked as though it might assume an epidemic form there soon. Dr. Simpson's statements went to show that Calcutta had a few cases in 1897, and again in 1898, when some one hundred and twenty-three persons had suffered. He believed that the Shropshire regiment, among whom a peculiar form of inguinal buboes prevailed, was infected with a form of pestis minor. This regiment had been on "plague duty" in Hong Kong during 1894, when plague was rife there, and both soldiers and civilians in Hong Kong for some time previous to the outbreak had been suffering from this affection. Dr. Simpson advocated a properly constituted sanitary service for India, and regretted that the offer of the Indian princes to found a research laboratory, with Professor Haffkine in charge, as a jubilee memorial, had not been acceded to.

Surgeon-Major Baker, of the Indian medical service, said he was favorably impressed with Haffkine's method of treatment. He insisted upon the absolute necessity for isolation and segregation; and with the value of floor disinfection in hospitals to prevent infection of the hospital staff. Disinfection of household effects before being handled and destroyed was necessary to prevent disease attacking the sanitary employees.

The Testing of the Plague Prophylactic in Plague-Stricken Communities in India.—This was a paper prepared for the meeting of the section by Professor Haffkine and Surgeon-Major Bannerman, of the Indian medical service. By numerous tables it was shown how the mortality had been reduced by inoculation with plague serum. A careful compilation of many experiments brought out the fact that the mortality among the protected as compared with the unprotected was lessened by eighty-six per cent.

Brigade-Surgeon Lieutenant-Colonel Arnott read an abstract of Surgeon-Captain Childe's contribution to the plague research committee on the "Pathology of Plague," and Brigade-Surgeon Lieutenant-Colonel Dimmock described the measures taken in Bombay to dispel the plague.

The Role of the Mosquito in the Evolution of the Malarial Parasite.—Dr. Patrick Manson, the president of the section, gave, by special request and with the permission of the secretary of state for India and of Surg.-Maj. Ronald Ross, of the Indian medical service, a lecture and exposition of the work done lately by the latter in the investigation of this subject. It was now over three years since Dr. Manson first promulgated a clear hypothesis as to the manner in which the mosquito removed the malarial parasite from the human body, and acted as its extracorporeal host. Not able to follow up the subject himself, Dr. Manson had found in Surg.-Maj. Ronald Ross a pupil endowed with keen scientific instinct, a firm believer in his theory, and a master of technique. To him Dr. Manson had set the task of working out and establishing the truth or otherwise of his views. To this, for three years, Ross had devoted himself with rare ability, and with the result that his investigations had placed us on the threshold of, if we had not already entered upon, one of the most important discoveries in the etiology of this or any other age. Up to the time Manson indicated the meaning to be attached to the evolution of the flagellated body outside the human body, observers were content with merely recording the differences of the various forms of the plasmodium. Since that important induction, however, the prosecution of the study had entered a new phase, and one which promised to lead to results of the greatest importance. Seeing that certain phases of the parasite developed into a flagellated body in the microscope field, some twenty minutes, more or less, after withdrawal from the body; seeing also that these flagella broke away and sought to enter other cells, Manson recognized in this an indication, if indeed he did not establish the fact, of the commencement of the extracorporeal life of the parasite. Beyond this, however, no clew was forthcoming as to how the parasite bred and continued its existence. It was at this stage that Manson propounded his mosquito theory and intrusted its elucidation to Ross.

The various stages of their work were arranged under several headings: (1) Ross found that the mosquito, in imbibing the human blood, ingested the parasite. (2) He saw the formation of the flagellated body in the blood in the mosquito's stomach. (3) He observed the flagella break away from the parent cell and attain a separate existence. Ross thereby established the probable correctness of the conjecture that in the mosquito the parasite entered a new stage of existence. To work out the behavior and development of the parasite in the mosquito was now the problem. After partial success with the human malaria, and for several reasons, Ross elected to investigate the problem in birds. Birds, the speaker said, suffered from intracorpuscular blood parasites like those in human malaria, and Labbé had shown that definite forms of parasites were frequent in Europe. Two species in particular he had described. They were known as Proteosoma and Halteridium; they were definite organisms, readily found by those experienced in this branch of parasitology in bird's blood. (4) Ross now allowed a particular species of mosquito (the gray mosquito) to feed on birds with Proteosoma in their blood, and soon discovered that the parasite entered with the blood the mosquito's stomach. (5) Examining his mosquitoes some hours later, he discovered certain oval pigmented bodies in the muscular coat of the mosquito's stomach. (6) By hundreds of obser-

vations he established the important fact that it was only in gray mosquitoes that had fed on birds in whose blood the Proteosoma parasite was present that those pigmented bodies occurred. (7) From this Ross correctly inferred that the pigmented body was an evolutionary form of Proteosoma. (8) MacCullum had previously shown that in the case of the analogous parasite—the Halteridium—the flagellum, of the flagellated phase, after breaking away, entered certain spherical, pigmented Halteridia, causing them to be transformed into little travelling pigmented vermicules, which, in virtue of their sharp beak and mechanical power, traversed freely red and white corpuscles. (9) Analogy suggested that a similar thing occurred in Proteosoma, and that the travelling pigmented Proteosoma vermicule entered the tissue of the mosquito's stomach and became Ross' pigmented body, in the same way as Manson had shown took place in the case of the Filaria sanguinis hominis. (10) Arrived in the stomach wall of the mosquito, the Proteosoma increased rapidly in size until it projected beyond the stomach walls into the cœlom, or body cavity, of the mosquito, as a rounded body, which he styled the Proteosoma coccidia. (11) During its progress and growth various changes took place in size and in the appearance of the contents of the coccidia. Pigment diminished and then disappeared, and as the parasite protruded into the cœlom it was seen that the contents had a more or less granular appearance. (12) The coccidia now burst, and what Ross called germinal vermicules, which had formed in its interior, were set free in the body, blood, and tissues of the mosquito. (13) The next step in the problem was one of great consequence—it was no other than the discovery of these vermicules in the venomo-salivary glands of the mosquito. Ross during dissection of the mosquito found a couple of head glands with a duct leading toward the proboscis of the animal, and traced the parasite vermicules into these glands. (14) The climax of the discovery was now within Ross' grasp, and he elucidated it thus: He allowed mosquitoes to feed on birds infected with Proteosoma; after a few days he fed the mosquitoes on birds whose blood was void of any parasite infection. He found in due course that the parasite-bearing mosquitoes had infected the healthy birds and that the blood of the latter was charged with Proteosoma.

Thus was the cycle completed, and the analogy between bird and human infection had only to be proved to establish what was no doubt a great scientific truth, that the mosquito was a carrier of malaria and an infecter of man. Much had yet to be done, however, before the full significance of the mosquito in malaria was worked out. Malaria, it was known, multiplied without the intermediary of any vertebrate. Did it do so solely in mosquitoes? If so, we had yet to learn how it passed from mosquito to mosquito. Did it multiply in other media? If so, what were they? Dr. Manson said that he had given merely the outline of Ross' great work. Doubtless Ross or others would soon take up the other problems it suggested and show how to solve them. It was impossible in a short space to give in detail the multitudinous experiments and observations he had carried out. Suffice it to say that they had been done in a masterly way and with a power of reasoning, of induction, and of technical detail which marked Ross as one of the most eminent scientific workers of the day. The practical applications of the discovery were immeasurable, and the fact that as the bites of the snake or the rabid dog inoculated the blood of their victims, so might the mosquito convey malaria, opened up a new and hopeful phase in the prevention of disease in the tropics.

Dr. Andrew Davidson put a resolution, which was unanimously carried, that the section send a message of congratulation to Surg.-Maj. Ronald Ross, of the Indian medical service, for the excellent work he had done in connection with researches into the subject of malaria and the rôle the mosquito played in its spread.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

Third Day—Friday, July 29th.

Symphyseotomy.—Dr. Buist, of Dundee, read a paper entitled "Two Symphyseotomies." His own experience was that operation in the patient's own house, while much more troublesome for the surgeon, did not act prejudicially to the patient. In his first case there had been three previous pregnancies, the first two resulting in stillbirth, and the third had been terminated by the induction of premature labor with subsequent death of the child. Pelvic measurement, diagonal conjugate, 9 cm. He adopted Frank's method of operation. The patient recovered and the child, which was born alive, died later from bronchitis. The second case was that of a rachitic woman, primipara. Diagonal conjugate, 10 cm. She was first seen when she had been two full days in labor. Symphyseotomy was done by the subcutaneous method, puncture being made below the clitoris. Forceps were applied. Both mother and child recovered. The competing methods were craniotomy and the induction of premature labor.

Dr. Morisani, of Naples, discussed the paper in French. He said that he obtained a separation of 7 cm. between the bones, which increased the available conjugate by 2 cm. He discountenanced premature labor, and thought that the children of such labors often grew up to wish that they had never been born.

Dr. John Moir, of Edinburgh, in answer to the remarks of the last speaker, stated that several of the children of the patients upon whom he had induced labor had lived to become worthy citizens and fathers of families.

Treatment of Cystocele.—Dr. Amand Routh, of London, read a paper on the treatment of cystocele by a new operation. He said that cystoceles might be divided into primary and secondary. The former was sometimes produced in the first stage of labor when, owing to premature rupture of the membranes, the cervix was carried down and urine might collect, acutely distending the lower part of the bladder. In this form pessaries were of no use. Anterior colporrhaphy was not satisfactory and gave no permanent relief, unless at the operation the bladder was stripped off the anterior vaginal wall and the anterior wall of the cervix; he made an incision in front of the cervix as for anterior colpotomy, and then a vertical incision through the length of the anterior vaginal wall. He made a semilunar flap on each side of this incision, and after removing all redundant tissue he put in stitches vertically and transversely, fixing the uterus. When elongation of the cervix existed, he amputated, after ligating the base of each broad ligament.

Dr. Sanger, of Leipsic, made a vertical incision over the cystocele with a semilunar flap on each side of this, and used a continuous suture. He also did a colpoperineorrhaphy at the same time, splitting the perineum as far as the anus, and carrying the sutures up the posterior vaginal wall to the cervix.

Dr. Fehling, of Halle, thought that the chief point in the treatment of cystocele was to put the uterus in good position by either ventral or vaginal fixation.

Dr. Giles, of London, recognized two forms of cystocele—the first when the uterus was low down; the second when the uterus was in good position, but there was elongation of the anterior vaginal wall. In the second form the indication was to diminish the size of the vaginal wall, but in the first this only did harm by bringing down the cervix and fixing it in wrong

position. The speaker thought that the second form was caused in labor by the driving down of the anterior vaginal wall and the loosening of its attachment to the pubes. He suggested the possibility of restoring the connections of the anterior vaginal wall and pubes; failing that, he would advise ventral fixation.

Dr. Martin, of Berlin, thoroughly agreed with Dr. Fehling as to the importance of beginning with the treatment of any defect in the uterus that might be present, especially the putting of the uterus in a good position. We must always avoid applying sutures to the uterus, in doing vaginal fixation, at a higher level than two centimetres above the internal os.

Dr. Lapthorn Smith, of Montreal, thought it was useless to do colporrhaphy without at the same time fixing the uterus. He performed the following series of operations at one sitting: Curetting the uterus, vaginal fixation, amputation of the cervix, anterior colporrhaphy, posterior colporrhaphy, and perineorrhaphy.

Vaginal Extirpation of Uterine Fibroids.—Dr. Smyly, of Dublin, read a paper on the extirpation of myomatous uteri by the vagina, in which he said that this operation was mainly due to the labors of Péan and Doyen. He had performed the operation seventeen times. He could not indorse the opinion that "fibroids kill as surely as, though more slowly than, cancer." The conditions which in his opinion called for operation were pressure symptoms, sloughing, pain, hemorrhage, inability of the patient to work, and rapid growth of the tumor. In the case of small tumors, vaginal was better than abdominal hysterectomy. As regards myomectomy, when the tumors were multiple, nodules which were left behind might still grow. Polypi were exceptional in this respect, and if these appeared they could easily be removed. He made it a rule when hemorrhage was a prominent symptom to dilate the cervix and remove any prominent submucous growths; even if this did not cure, hysterectomy could be done later. As regards oöphorectomy, it might be difficult or impossible, and even when performed it did not always arrest growth of tumor; he preferred vaginal hysterectomy by Doyen's method, by which he had removed tumors up to five pounds in weight. One case of this series had terminated fatally. In all cases he had done Doyen's morcellation, using clamps for the broad ligaments, and the conclusions he had arrived at were that this operation was better than removal of the appendages, and that nervous symptoms were less severe after removal of the uterus and ovaries than after removal of the ovaries only.

Dr. Landau, of Berlin, said that one should bear in mind the danger of a myoma degenerating into a sarcoma; also the danger of necrosis. He had observed several times more growth and pain after the menopause, and he urged the importance of not delaying until the heart had been affected by the hemorrhage.

Dr. Smyly, in reply, said that the greatest difficulty in cases of myoma was to decide whether any operation was necessary, and in that way they differed entirely from cases of ovarian tumor.

Dilatation of the Os Uteri.—Dr. Farrar, of Gainsborough, read a paper entitled "A New and Speedy Method of Dilating a Rigid Os in Parturition." This consisted in applying tampons of a ten-per-cent. solution of cocaine to the os.

Dr. Jardine, of Glasgow, had tried cocaine pessaries for the same purpose, but had come to the conclusion that they did no good.

Dr. Alice Ker, of Liverpool, had found injections of hot water very useful for rigid os; also that they diminished the severity of the pains.

Dr. Donald, of Manchester, read a paper on "Vaginal Section." He had performed fifty-nine operations, with a mortality of 6.5 per cent.

Conservative Surgery of the Ovary.—Mr. Christopher Martin, of Birmingham, read a paper entitled "Conservative Surgery of the Ovary." He said that the physiological value of the ovaries was shown by the results which followed their complete removal. In his opinion it was unjustifiable to remove both ovaries in cases of cystoma unless the tumor was sarcomatous, in which case both ovaries should be removed even when only one was affected; in inflammatory disease he would leave one ovary whenever possible. He would perform resection of the ovary for fibroma, dermoid, and cystic disease, leaving the healthy part of the ovary. In chronic cystic ovaritis he would perform ignipuncture. In parovarian and broad-ligament cysts he would enucleate and leave the ovary. In hysterectomy, vaginal or abdominal, he would leave one or both ovaries.

SECTION OF MEDICINE.

First Day—Wednesday, July 27th.

The President's Address.—Dr. George W. Balfour, of Edinburgh, delivered the president's address, taking as his subject "A Personal Experience of an Almost Forgotten Episode in Medical History." There were not many now alive, he said, who could remember the time when bloodletting was the panacea for almost every ailment, and when, if patients could be no longer safely bled, they were certainly leeched or cupped. There must be few survivors of the time when one was taught that in uncomplicated pneumonia the only essential action of the prognosis was the day of the disease on which the treatment by venesection was commenced, as it sometimes failed when delayed more than two or three days from the commencement of the disease. Yet such were the earliest lessons in medicine which the speaker had received in the wards of the old Royal Infirmary.

When within a year of graduation he made his way to Vienna with the view of investigating homœopathy, he studied percussion and auscultation under the world-renowned Dr. Joseph Skoda, and his astonishment was great when he found that the severest cases of pneumonia were treated with poultices and regulated doses of extractum graminis (hay tea), and with nothing else unless much pain was complained of, when a few grains of Dover's powder were added. It was astonishing to see a pneumonia melting away under the magic influence of the decillionth of a grain of phosphorus, but it was indeed a *reductio ad absurdum* to find this same magic influence exerted by hay tea, and to be told by Skoda that pneumonia was a disease which tended not to dissolution but to resolution.

The *ἰσχὺς πάθους* of Hippocrates was raised to a paramount position by Hahnemann, who enunciated the doctrine that by it alone could disease be not only cured, *tuto, cito, et jucunde*, but silently and at once extinguished. In this respect homœopathy was the eighteenth century analogue of our modern antitoxin treatment. Remedies were selected not for any healing virtues they were supposed to possess, but because of the power they were believed to have of exciting a disease similar to that they were supposed to cure. For one fresh from a school where it was taught that "in the case of inflammation no one would think of trusting the safety of the patient to any other remedy than bloodletting," it was a sufficiently startling experience to observe patients with true sthenic pneumonia not only treated by drugs in infinitesimal doses, but making excellent recoveries under their use. Naturally the first and most obvious idea was that there really must be some occult virtue developed by the various triturations and succussions, and some truth in the homœopathic aphorism, *similia similibus curantur*. But the excellent results obtained by Skoda with his hay tea sufficed to dispel this idea, while the success

of Dietl in the same class of cases in another hospital with simple aqua colorata showed that there was nothing specific even in hay tea, and but confirmed the unmistakable conclusion that, as Skoda put it, pneumonia tended not to dissolution but to resolution, and that the large bloodlettings thought necessary for its treatment were, to say the least, uncalled for.

Though in the Edinburgh school much stress continued to be laid upon the necessity for bloodletting, it had ceased to be carried to such an extreme as in the immediately preceding generation. Dr. Balfour was once told by an old gentleman that he heard Professor Gregory in a clinical lecture boast that he had bled a man into convulsions, adding that the students had rushed terror stricken from the ward, and that he himself had been disconcerted for a moment. The patient recovered. In a series of MS. clinical lectures still extant, Gregory narrates the still more remarkable case of Betsy Moffat, who during an attack of pneumonia had suffered much from bloodletting, tartar emetic, and other perturbative treatment; at last she was found insensible, her pulse 104 and feeble, and a rattle in her throat like one dying. Even Gregory admitted she could not be further bled, but by dint of stimulating her with hartshorn and sack whey he was able to apply a few leeches to her head, and before he left the ward he was able to take four more ounces of blood from her arm, blood which, as Gregory tells us, was still buffed and cupped. Incredible as it might seem, this patient did not die, but on the contrary was able to be discharged exactly one week after her last bloodletting. Gregory was a very able man and no fool: he quite recognized the danger of large bloodlettings, especially in weakly patients. But while he considered the remedy unsafe, he thought it less dangerous than the disease, and in this opinion he was supported by the pathology of his day.

On his return from Vienna, Dr. Balfour read before the Medico-Chirurgical Society of Edinburgh a report of what he had observed in the wards of Skoda, with an account of 392 cases of pneumonia, treated on what might be termed the expectant principle, and showing a mortality of only 54, or 1 in 7¼, equal to 13.7 per cent. He pointed out that the Vienna cases were certainly not less sthenic than those in Edinburgh, that they had the disadvantage of being daily unceremoniously auscultated, percussed, and lectured over, and that they had not the advantage of having been freely bled, yet their mortality was only 13.7 per cent. The mortality in the Edinburgh Infirmary was at that time 35.9 per cent. But his words fell on deaf ears, and the conclusion arrived at was summed up in the words of Dr. John Gairdner, who said that nothing was better established in Edinburgh than the good effect of bloodletting, whatever might be the case in Vienna, and that if Dr. Balfour or any one else could shake his conviction in the truth of this opinion, he would also succeed in producing in his mind a general distrust of medical evidence in all cases of every description, since in no case whatever could we have evidence which is stronger or more satisfactory.

The eclectic treatment of pneumonia, however, passed gradually into the hands of the general practitioner, and within less than ten years the late Professor Bennett wrote: "It is admitted that the practice of bleeding in acute inflammations has, within a recent period, undergone a great change; that whereas it was formerly the rule to bleed early, largely, and often repeatedly, now such bleeding is rarely practised, and is not necessary."

If at the end of the last century the profession generally had been fully alive to the fact that since the days of Pythagoras—a contemporary of Hippocrates—there had never been wanting a body of eclectic physicians, many of them the most renowned physicians of their day, who shunned perturbative medicine and guided their patients safely through the most acute diseases without having recourse to any so-called heroic practices, it seemed unlikely that even the skilful special pleading of Cullen would have sufficed to establish bloodletting as a treatment upon a foundation apparently so stable. And in the absence of the factitious contrast between the action of heroic medicine and that of infinitesimals, it seemed equally unlikely that Hahnemann's ideas as to the preparation and powers of infinitesimals would have taken any hold on the profession.

We were now on the threshold of new discoveries and of quite a new pathology, which was indeed but a higher development of ideas that had long been slumbering in the professional mind—the connecting links being Dwight, Raspail, Hallier, and Pasteur—but which seemed likely now to attain a development of the highest importance for the well-being of mankind. It was well, however, in the light of the past to remember that disease might be recovered from under many different forms of treatment. The practical certainties of our art in all ages had been sufficient for the welfare of mankind, and we must be careful never to subordinate to any vague ideas of what might possibly be curative of disease that which was, after all, the paramount object of our art—the relief of suffering.

Dr. Balfour then briefly welcomed the foreign guests, among whom were Gerhardt, of Berlin; Rosenstein, of Leyden; and Rosenbach, of Berlin.

Sir James Grant, of Ottawa, thanked Dr. Balfour in the name of the section, and said that in Canada bloodletting was sometimes necessary in sthenic cases in the country parts; the great point being to watch the peculiarities of individual cases, and treat them accordingly.

Cirrhosis of the Liver.—Dr. Alexander James then read a paper on the clinical varieties of hepatic cirrhosis, which he said were not so definite and well defined as was commonly supposed. The exciting causes were alcohol, exposure, and syphilis, hereditary or acquired; all these cases were not necessarily fatal, for with care and appropriate remedies some patients recovered and lived for years afterward.

Dr. Rosenstein had met with ascites and hæmatemesis, but never with jaundice. He had rarely met with cases due to alcoholism.

Dr. Ewart found it difficult to connect cirrhosis with alcohol. He had, however, met with cases in which vinegar taken in large quantities was apparently the exciting cause, and he instanced the case of a patient who had indulged largely in acetic acid, had been tapped fifteen times, and was still living.

Another speaker, whose name was not announced, mentioned the case of a boy who died with hypertrophic cirrhosis of the liver after indulging in highly spiced food; he became jaundiced and died from septic poisoning. A lady, too, who lived principally on entrées and champagne, had a curiously enlarged liver with a great rise of temperature: an exploratory puncture was made, and eventually the woman died, but a post-mortem examination was not allowed. Another patient, who had pain and enlargement of the liver, had fed upon highly seasoned food, but had not partaken to any extent of alcohol.

Dr. Rosenbach thought cirrhosis of the liver was usually associated with disease of the heart, but the two affections were etiologically independent of each other. The same pathological cause underlies all cases of cirrhosis.

Another speaker said that he had examined a great many drunkards and had met only one case of cirrhosis in some four thousand of them. Alcohol at the most opened the door, but there existed a more direct cause,

and if we could discover this we could put a stop to cirrhosis not only in the liver, but in the lungs and thyroid as well.

Dr. James, in closing, said that the point he wished more particularly to emphasize was this, that in atrophic cirrhosis the liver cells disappeared and their place was taken by fibrous tissue.

Dr. Osler, of Baltimore, then read a paper by Dr. Adami, of Montreal, on the "Bacteriology of Progressive Portal Cirrhosis," and exhibited photographs of a bacillus which he had discovered not only in man but in cattle, of which he had killed and examined thirty. It was very characteristic; the bodies were still warm when he made the autopsies, and cultivations of the bacillus, which was a very short one, were successfully made. He thought the micro-organism caused more than one disease by setting up a septicæmic action in the system.

Dr. Rosenstein doubted the identity of the microbes found in cirrhotic liver in the human subject and in the hypertrophic liver of cattle dying from pleuro-pneumonia.

Dr. Rosenbach then read a paper on "Locomotor Ataxia," but he spoke so fast and withal so indistinctly that his remarks were evidently not understood.

(To be Continued.)

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

ECHOES FROM THE EDINBURGH MEETING.

London, August 5, 1898.

Edinburgh has eclipsed her former record. She has absorbed the medical interest of the week and entertained the association with a zest and success that cannot be surpassed. The sole topic of medical conversation is the meeting, in some one or other of its numerous aspects. Your staff of reporters furnish you with full accounts of the most important proceedings. Of lighter matters here follow a few, but your readers will understand that, as no one person can be in many places at once, this letter is a compilation. The remarks are not even confined to your staff, but reported as said or heard by members present. The I or the we, therefore, in different paragraphs may represent different individuals.

Next year's meeting is fixed to be at Portsmouth, and Dr. Ward Cousins is the president-elect. He has well earned the honor by his long devotion to the association, and his geniality and humor promise well for his presidency.

The new university buildings are entirely occupied by the Medical School. They were ten years building —1878 to 1888—and cost nearly £250,000.

The McEwan Hall is a truly magnificent structure, of semicircular form, the gift of a wealthy brewer, and cost over £120,000. It contains a magnificent electric organ, and the pillars, galleries, gilding, and mural painting are very imposing.

The new Royal Infirmary was begun in 1870 and opened in 1879. It is a noble pile, and an additional pavilion is now being built as a commemoration of the Queen's jubilee.

The acoustic properties of the McEwan Hall are not good. At any rate, where I sat I could hear very little of Sir T. G. Stewart's address, and was glad your reporter was more favorably located. Of the other addresses similar complaints were made.

The sections began on Wednesday, and a hard morning's work in the hot weather gave a desire for fresh air; so in the afternoon we—some thousand or so of us—drove out to Craig House, the beautifully situated, designed, and decorated asylum for the insane of the middle classes, where we were received by Dr. and Mrs. Clouston and Sir Alexander Christison. The grand hall, the public rooms, and two of the wards were open to visitors, and the lovely scenery excited much comment. Refreshment was provided in a large marquee, to the strains of an excellent band.

In the evening the McEwan Hall and the university quadrangle were thronged with people. Organ and stringed bands, Japanese lanterns, and refreshments seemed everywhere present.

There was an interesting reception at the site of the city hospital for infectious diseases now being erected. We were received by Public Health Committee Convener Baillie Pollard, a copy of whose work on "The Care of Public Health and the New Edinburgh Fever Hospital" was presented to each. The baillie told us that at first the corporations were not very willing to undertake the care of infectious cases, but having once undertaken it they were resolved to do it thoroughly.

I got to Edinburgh early and found the weather splendid. The finest city in the world looks its best in sunshine with a light haze softening the shadows and mellowing the distance. Plenty of others arrived at the same time. I was quickly booked for as much private hospitality as could be crammed into the time, and hope to survive the dissipation.

The tickets for the annual dinner were all sold before I applied, and I was glad of it. So, too, for the lord provost's ball—I don't dance and want a little rest in this whirl of excitements. But a friend tells me the dinner went off well, only there was too much speechifying and it was not over until midnight. About four hundred and fifty were present.

The principal and senatus academicus gave us a reception on Thursday afternoon in the university library. This is a long room with arched roof and bookcases at right angles between the windows, forming bays. The library has just been redecorated at the expense of Sir W. Priestley, M.D., who is M.P. for the university. He was present, and so were many of his London confrères. In fact, we seemed quite at home —so many faces were familiar. What with electric lamps and greenhouse plants, the library was quite brilliant.

Then we went to the reception of the College of Surgeons, where Sir John Struthers, looking still weak from a recent attack of influenza, received us most gracefully. The ladies, of whom many were present, circulated among the specimens in the museum and indulged their curiosity.

Thence to yet another reception, viz , to the College of Physicians, where marquees in the gardens across the road in front had been prepared and a garden party intended; but rain made most of us stick to the hospitable walls of the college hall—a handsome if not very large hall. Here, too, were refreshments, as there were at the sister college—indeed, everywhere and all the while.

A fellow with a statistical craze calculated that 739,513 cups of tea and coffee and 453,219 ices were consumed at the various functions held in connection with the meeting this week.

In the evening the ladies' committee entertained those gentlemen who did not go to the dinner and others at the Royal College of Physicians, with music, talk, and more refreshments. There was a brilliant and crowded assembly, where Lady Grainger Stewart won golden opinions. A concert was also given by the ladies in Queen Street Hall.

On Friday the sections sat until 1:30, but a quarter of an hour before this a golf party had started off to a match—for the weather was again delightful, the

rain of the previous day having only cleared and cooled the air.

A very large party went to Hopetown, where they were received by the earl and countess. Charming views, lovely weather, handsome trees, excellent music, and a warm welcome made this garden party successful among successes. Then the drive there beside the water, with views of Ben Ledi, Ben Vorlich, and Ben Lomond standing out in the clear air, was a delightful experience.

Another party went to Glasgow. Another was entertained by Dr. Ewart, professor of natural history in the university, at his residence, where visitors were shown the results of his experiments in cross-breeding. The horse-zebra hybrids in the professor's extensive stud were examined with the greatest interest.

On Saturday the graduation ceremony and honorary degrees represented the more serious part of the week end, and the excursions the more popular. Many of the visitors had previously left.

New Instruments.

A NEW SPUTUM BOX.

By STUART HART, M.D.,

NEW YORK.

The inconvenience met in the use of the ordinary glass bottle and the glass receptacle of the board of health for obtaining specimens of sputum for examination, and the difficulty in destroying these, have led

me to devise a receptacle which, I believe, will be found to obviate many of the objections to the older vessels.

The receptacle in question consists of a wooden box, three inches in diameter by one and one-half inches in height; the top is firmly held by a spiral screw turned in the wood. The interior of the box is made concave and painted black, to facilitate the selection of portions for examination and to prevent absorption of the contents. The advantages of the vessel may be summarized as follows:

1. The wide opening (permitting the specimen to be collected without smearing it on the outside of the box).

2. The lightness, inability to break, absence of absorption, and the security of the cover (permitting a specimen to be transported to any distance).

3. Internal form and color (allowing facility in selecting a portion of the specimen for examination without turning the whole from the receptacle).

4. The ease of absolute destruction by fire.

5. Cheapness and simplicity.

The method, pursued in so many laboratories, of spreading out a specimen of sputum (to be examined bacteriologically) on a glass plate which has been previously used for another specimen and presumably sterilized, cannot be too highly condemned. Sterilization may be made perfect, but the equally important cleansing cannot be satisfactorily accomplished, and misleading contaminations are the result of this faulty laboratory method. The specimen box here offered obviates the necessity of the use of the glass plate, avoiding thus one step associated with a possible error.

The accompanying cut has been furnished me by Messrs. Lincoln & Luchesi, of this city, who have taken great pains in constructing the receptacle according to my drawings.

77 West Fiftieth Street, July 8, 1898.

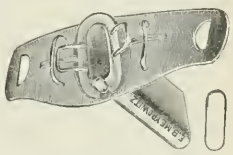
A NEW TRACHEOTOMY TUBE.

By GEORGE L. RICHARDS, M.D.,

FALL RIVER, MASS.,

OTOLOGIST AND LARYNGOLOGIST TO THE FALL RIVER AND EMERGENCY HOSPITALS.

The tracheotomy tube here illustrated was devised for a case of malignant laryngeal disease, in which the ordinary tube was worn with considerable discomfort and failed to furnish a sufficientamount of air. For adults who must for any cause wear a tube for any length of time, this tube has decided advantages. It furnishes an abundant supply of air, is not easily clogged, is worn without especial discomfort, and does not prevent speech or laryngeal breathing, as the finger placed over the end will completely close it. This latter is an advantage, as it allows the person to use what power of phonation may be left. For cases such as the one for which it was devised, in which the swallowing is difficult and more or less food and liquid get into the trachea, the food and liquid can be coughed out through this tube with the minimum amount of effort, far less than when the curved round tube is used. This tube should be just long enough to pass into the trachea about one-eighth to one-fourth inch. The one here illustrated was made by a jeweller from a hard-rubber model, but any instrument maker could make one from the cut and probably improve on the original. The lower side should be a little longer than the upper, to compensate for the backward direction of the trachea. The tube itself should be straight, attached to the shield in such a way as to give it a slightly downward direction from before backward. There is an inner tubes as in the usual tracheotomy tube.



Gall-Stone Solvents.—We have no evidence that gall stones are ever dissolved by substances taken internally for that purpose by patients. Olive oil is very frequently administered. There are several reasons why it does not act therapeutically as a solvent. 1. Oil cannot be expected to travel up the gall ducts from the duodenum, because the peristaltic action of the ducts is toward the duodenum from the liver, and this peristaltic action is presumed to be unceasing. 2. If oil could travel against the peristaltic effort of the gall ducts and enter an open gall bladder—many are not open—it would be at once mixed with bile. 3. Undiluted sweet oil, in which I kept gall stones for weeks at various temperatures, produced no appreciable effect beside a softening of the external layers of some stones. So unimportant was its action that it was not thought worth while to include it in the further tests. What sweet oil does do is to carry toxins out of the alimentary tract pretty rapidly, and it relieves the patient of the element of intoxication from that source.—Robert T. Morris, "Lectures on Appendicitis and Notes on other Subjects," p. 90.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending August 13, 1898:

	Cases.	Deaths.
Tuberculosis	148	120
Typhoid fever	34	13
Scarlet fever	58	3
Measles	70	4
Diphtheria	101	15
Laryngeal diphtheria (croup)	5	7
Chicken-pox	15	0

A "Home-Made" Milk Sterilizer.—Dr. McClanahan states that a cheap and efficient sterilizer can be made in the following manner: Take an ordinary one-gallon tin bucket, twelve inches high, having a movable, closely fitting lid. Have a handle soldered to one side for convenience in handling. Have a false, perforated bottom, to which are attached three legs, each one inch long. This is to be slightly smaller in circumference than the bucket, so that it will go inside and rest upon the bottom of the bucket. In the lid a small opening is to be made for the escape of steam. This sterilizer can be made by any tinsmith at a nominal cost.—*American Journal of Obstetrics and Diseases of Women and Children.*

Longevity of Physicians.—A French statistician has discovered that in the sixteenth century the average duration of a doctor's life was only thirty-six and one-half years. In the seventeenth century it reached forty-five and two-thirds years, in the eighteenth century forty-nine and two-thirds years, and at the present time he finds it is fifty-six years. The same inquirer purposes to ascertain whether the average longevity of patients has increased in the same proportion.—*Toledo Medical and Surgical Reporter.*

The Biograph in Medicine.—Dr. Fincham, writing to the *Amateur Photographer*, London, points out that the cinematograph as regards medicine and surgery is rich in potentialities. "Just as the discovery of the Roentgen rays first appealed to the wonder-loving public as a scientific curiosity and now is deemed an essential part of the armamentarium of every hospital, so in the future will the cinematograph be regarded as a necessity for the pictorial record of suitable cases."

The Total Number of Blind in the United States is nearly 49,000, or 976 in each million of the population. The number of blind reported as receiving instruction is 4,691. The number of blind who are also deaf-mutes is: whites, 84 males and 107 females; colored, 28 males and 29 females. Blind and idiotic: whites, 595 males and 463 females; colored, 66 males and 62 females.

Tea.—The United Kingdom consumes 600,000 pounds, or about 4,000,000 gallons, of tea every day, which is as much as is used by the rest of Europe, North and South America, Africa, and Australia combined.

Netley Hospital.—It is claimed for Netley Hospital that it is the longest building in England, being nearly a quarter of a mile long.

Realizing on the Effects.—An amusing tale is told by a country doctor in England. He had been attending for a considerable period a parson, and, according to custom, now fortunately becoming antiquated there, attending him gratis. When in due course the parson died, his widow wrote to inquire how much the doctor would allow her for the medicine bottles.

Australia has No Orphan Asylums.—Every child who is not supported by parents becomes a ward of the State, and is paid a pension for support and placed in a private family, where board and clothes are provided.

Acetylene is the newest cure for cancer. Carbide of calcium is applied to the cancerous surface and then moistened with water. Acetylene is at once evolved, producing at first a burning sensation and then exercising its curative effect.

The Bicycle.—Prof. H. C. Wood declares that "the bicycle is the great calisthenic of the world."

A Simple Tonic.—An English weekly journal is responsible for the following anecdote: A Birmingham physician has had an amusing experience. The other day a somewhat distracted mother brought her daughter to see him. The girl was suffering from what is known among people as "general lowness." There was nothing much the matter with her, but she was pale and listless, and did not care about eating or doing anything. The doctor after due consultation prescribed for her a glass of claret three times a day with her meals. The mother was somewhat deaf but apparently heard all he said, and bore off her daughter, determined to carry out the prescription to the very letter. In ten days' time they were back again, and the girl looked quite a different creature. She was rosy-cheeked, smiling, and the picture of health. The doctor congratulated himself upon the keen insight he had displayed in his diagnosis of the case. "I am glad to see that your daughter is so much better," he said. "Yes," exclaimed the excited and grateful mother; "thanks to you, doctor! She has had just what you ordered. She has eaten carrots three times a day since we were here, and sometimes oftener—and once or twice uncooked—and now look at her!"

Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the Marine Hospital service during the week ending August 13, 1898:

SMALL-POX—UNITED STATES.

		Cases.	Deaths.
Alabama, Butler County	Jan. 1st to Aug. 6th	300	
Forest Home, Butler Co.	During June	..	1
Gordonville	August 6th	..	5
Haynesville	August 6th	..	2
Lowndes County	August 6th	25	2
Morganville	August 6th	..	1
Michigan, Seneca Township	Present, but number of cases not reported.		
New Mexico	Prevalent to a great extent, notably on line of Santa Fé R.R.		
Tennessee, Cleveland	During July	1-	
Memphis and suburbs	During July		

SMALL-POX—FOREIGN.

Belgium, Antwerp	July 16th to 23d	..	
Ghent	July 16th to 23d	..	1
Ghent	July 23d to 30th	..	1
Colombia, Valencia	July 25d	1,000	
India, Bombay	July 5th to 12th	..	1
Calcutta	June 25th to July 2d.	..	3
Madras	June 25th to July 1st	..	1
Madras	July 2d to 8th	..	1
Japan, Osaka and Hiogo	June 25th to July 2d.	1	
Osaka and Hiogo	July 2d to 8th	4	
Russia, Moscow	June 25th to July 2d.	6	
Moscow	July 2d to 8th	15	
Odessa	July 9th to 16th	4	
St. Petersburg	July 9th to 16th	2	
Sweden, Christiania	July 16th to 23d	2	
Uruguay, Montevideo	June 19th to 26th	1	

YELLOW FEVER.

Brazil, Rio Claro	April 26th		17
Rio de Janeiro	June 24th to July 1st	33	21
Taboticabal	April	106	42
Tahir	May	3	1
Colombia, Carthagena	July 8th to 15th	..	2
Mexico, Tampico	July 25th to 31st	..	9

CHOLERA.

India, Bombay	July 5th to 12th	..	3
Calcutta	June 25th to July 2d.	..	9
Japan, Osaka and Hiogo	July 2d to 9th	1	

PLAGUE.

India, Bombay	July 5th to 12th	..	53
Calcutta	June 25th to July 2d.	..	20

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Original Articles.

THE DELIRIUM OF INSANITY.[1]

BY HIRAM ELLIOTT, M.D.,

MANHATTAN STATE HOSPITAL, NEW YORK.

BEFORE proceeding to the specific discussion of the subject of this paper, I shall give a brief outline of the way the normal mind is thought to be developed. I do this because it will be maintained herein as a fundamental principle that the very same laws govern the action of the diseased brain as govern its action in health. It will be held that just as the sound mind is developed through certain physiological steps from the healthy brain, so is delirium a legitimate product of that organ in disease. And further, it will be contended that disordered cerebral action does not result in the creation of any new product, but rather in the modification or failure in the normal evolution of the old.

The brain is a reflex nerve centre endowed with consciousness. As a nerve centre the scheme of its action is a simple one. It receives sense impressions and gives out motor stimuli. So far it does not materially differ from the spinal centres, but as endowed with consciousness a new series of phenomena are made to appear. Sensory stimuli, instead of passing over directly to the motor side to reissue at once in action, come into view as it were. We are conscious of them. They are experienced, are compared, are elaborated, and are controlled.

Consciousness first busies itself with the sensations themselves. It notes how they affect the organism, whether they produce a sense of well-being or of discomfort, whether they please or depress. In this way it originates what are termed the feelings: and those feelings arising directly from sensations presented are termed presentative. These are registered and accumulate, and are called up by consciousness to be combined with those newly presented to form what are known as presentative-representative feelings, and with each other as representative and re-representative feelings. A series is thus formed passing from the simple to the complex, from the concrete to the abstract, and extending farther and farther from the original sensations, yet never becoming wholly independent of these sensations as registered in the brain.

Again consciousness takes note of the relations of the sensations received by the brain. It locates them, compares them with experience and with each other, combines these relations into groups more and more complex, and calls them up again and again in new and varying combinations. The cognitional series is thus formed, also passing farther and farther from the original impressions, but never becoming independent of their registration in memory. This is intelligence, originating like and with the feelings in sensation. Beginning with the simplest idea, it passes on to the more elaborate and complex, from the concrete to the abstract, from the first presentative cognition of the child, which fades even before the sensation from which it arose, to the sustained production of re-representative cognitions in the trained adult mind, evolved by consciousness from the vestiges of sensations whose originals had long before disappeared.

Thus between the simple taking in and giving out, as seen in the spinal centres, are developed these series of feelings and cognitions, all that constitutes the emotions and the intelligence, the ever-widening realm of mind. Here as in a sealed chamber sensation very imperfectly but indelibly pictures the environment, and consciousness, guided by its own light, moves silently and swiftly among the figures, noting, comparing, arranging, evolving therefrom the highest product of the human organism, the noblest thing in the universe.

And the extent and quality of this psychological product, then, will depend on three things: the accuracy and vividness of the sensory images, the richness and the availability of experience, and the activity of consciousness. As these vary so will the product vary. The sensory apparatus is a wonderful mechanism, but not more wonderful than imperfect. Even under the most favorable circumstances of endowment and education it is always defective. It is never alike in two individuals, nor are its parts equally well developed in the same individual. In one person, for instance, sound images are produced with great clearness, while form pictures are blurred and indistinct; in another, sensation vividly portrays tactile stimuli, but will not respond readily to color; in a third, no good sensory images are produced at all. Indeed, of the multitudinous impressions sent into the most highly educated and sensitive brain, only a very narrow minority come so fully into view as to give rise to feelings and cognitions, or are registered with sufficient definiteness to be of any service to memory. To put it epigrammatically, the best sensory images are poor, and the vast majority are so bad that consciousness pays little heed to them, at least as far as ideation is concerned; and they leave behind no available traces whatever. Almost the entire series of subjective sensations is of this nature.

Experience is also a variable quantity. Age, opportunity, and natural capacity are factors controlling its richness. It is a standard by which new perceptions and conceptions are judged and to which they may be added. In a few people it is very wide in extent and vivid in character. When wanted for purposes of comparison, its elements are readily available. A direct continuity between the presenting image and the vestiges of numerous former ones is readily established. In most persons, however, experience is very narrow and confused. Both the emotional and the cognitional series are defective and fragmentary. Hence re-presentation is not only difficult, but also the images called up are blurred and incomplete. And as memory is defective, so are additions thereto correspondingly few and imperfect.

Again, the activity of consciousness or attention, while it depends chiefly on cerebral energy, will be affected materially by the character of the sensations received and by the availability of those already registered for purposes of comparison. Attention is like all servants, in that it works best along the easiest lines. When the sensory and ideal images are distinct, little effort will be required for the evolution

[1] Read before the Brooklyn Society for Neurology.

therefrom of feelings and cognitions. Cerebral energy will be in excess and give rise to a sense of satisfaction and freedom and power. On the other hand, when these images are lacking in definiteness or number, attention soon wearies and flags, cerebral force is quickly expended, and we experience a feeling of restriction and insufficiency. Our individual proclivities are developed in this way. We follow certain lines of thought or action, mainly because they are most attractive to us and offer the least resistance. In the lower types of man, indeed, the inclinations are supreme, and in the evolution of mind in them consciousness knows no higher direction.

But as we ascend the scale of mental capacity we find the product begins to direct the factor, the psychical to control the physical. Masses of cognitions form, which seem able, as it were, to monopolize cerebral activity, to preoccupy consciousness. Very many sensory impressions are received which result in neither emotion nor idea. There is acquired the power of ignoring what is extraneous, and of confining the action of consciousness to the appropriate series of sensations, or their vestiges, which are esential to serial thought. In some individuals this power is very great. Even out of the faded tracings of former sensory images they are able to construct new and more vivid series of ideal pictures, which are themselves also capable of sustaining thought or of actual reproduction, as, for example, in historical paintings. It must be remembered, however, that these representations are not sensory images and never can become such. Moreover, the trained mind is not only able to pursue this abstraction, but is also able to put the whole series to flight or to turn the trend of thought into an entirely different channel. This is concentration.

Now the end of all thought is to direct the action and promote the welfare of the body. Nature is constantly calling for gratification. The physical necessities and the acquired tastes make no uncertain demands. Sensations are received in the brain, out of which corresponding cognitions and feelings arise and accumulate, and the masses thus formed, in their striving to discharge themselves as motor stimuli, constitute what are termed the desires. If opposing masses of cognitions form, each adds to itself by a process of selection, until one mass overbalances the other, and, drawing after it sufficient cerebral force, is translated into motion. This necessary issue of the thought in action is termed will, and the process by which one mass of cognitions rises superior to all others and determines cerebral action in a certain direction is called decision. To recapitulate in one sentence: Out of the sensations received by the brain consciousness evolves the emotions and the intelligence; these, being concentred upon the attainment of a certain object constitute a desire; and this in turn, when of sufficient intensity to force its discharge through the motor centres, results in what is termed a volition.

While the foregoing refers more directly to objective sensations, it also applies to the vague sensations arising within the body and which are termed subjective. While these scarcely come specifically into view at all, they play a very important part in the production of the feelings. In all diseased conditions the feeling of illness and wretchedness is produced in this way. The product is painfully manifest, though its factors may only be guessed at or are wholly undiscoverable. Ordinarily in health the feelings are in a condition of partial abeyance, ideation and volition occupying almost the entire foreground. We move along at a certain level, scarcely conscious of our existence unless we are forced above or below that level. Normally we may be said to be in a condition of intellectual activity and emotional indifference.

The term insane delirium may be defined as prolonged deviation of the intelligence from the normal, due to brain defect or disease, the chief phenomena manifested being incoherence, irrelevance, illusions, hallucinations, and delusions. I have said that these conditions are due to disease or defect in the brain, but as that organ presides over all nutrition, prolonged disease therein usually results in permanent change in the nerve trunks or at their peripheral expansions as well. Sometimes the disorder along the courses of the nerves or at their terminations precedes or exceeds disease in the cerebrum, as, for example, pressure upon the auditory nerves from meningeal congestion or inflammation, or irritation of the pneumogastrics by the gravid uterus. In this way may originate sensations which are so startling and so powerful that consciousness is active only in their direction. The other centres, receiving little or no attention, become sluggish or inoperative, and thus is disordered cerebral action induced. In very susceptible persons, indeed, the irritations referred to may be the immediate substratum of false feelings and cognitions.

Pathological changes in the central nervous system, whether congenital, nutritional, degenerative, or inflammatory, manifest themselves first in disordered sensations. Sensory images, imperfect even in health, become more imperfect. They may be so vivid that they are painful and distracting, they may be blurred and indistinct or otherwise defective, or the receptive apparatus may be so insensitive that it does not seem to respond to any stimulus and presents no sense pictures to consciousness at all.

Again, the seriality of the sensory images may be disturbed. In exalted and hyperactive states these imperfect images may present themselves so rapidly and come from so many sources that they all run together, and any cognitions evolved therefrom are correspondingly confused and fragmentary, and devoid of any proper relation to each other. In depressed conditions, on the other hand, they may be so slowly formed and so few in number that the connection between them is lost and serial thought becomes impossible. Sometimes, indeed, the whole cerebral energy seems concentrated upon a single stimulus, as in ecstasy or rapture. This lack of proper sequence in sensory images is a frequent cause of incoherence.

A third element in the causation of delirium is a decrease in the availability of experience as a standard of comparison. Even in weariness or anger the store of our knowledge frequently fails us, and in fright may desert us altogether. In brain disease this reduction is one of the first things to happen. Here, possibly as the result of dislocation or destruction or weakening of the protoplasmic processes or axis cylinders of the neurons, consciousness seems no longer able to force its way readily along its accustomed paths. This is especially true of those paths recently formed. It makes short cuts, so to speak, or excursions into wrong areas, or possibly is brought to a standstill. The representative factor in ideation is consequently at fault. Hence the ideas developed may not have the proper relation to the sensation initiating them; they may be irrelevant. Or, on the other hand, they have not the proper relation or consecutiveness to each other, and we have incoherence. Again, experience may not be available at all, as in conditions of amnesia, and if consciousness be correspondingly inactive, the faint and fragmentary images fade without an evolution of emotion or idea, as in profound dementia and stupor.

The chief points, then, of the ideational apparatus where anomalies arise are, first, in the sensory nerves and their peripheral and central expansions. Stimuli may be abnormally originated, or they may be improperly transmitted to or received in the sensory centres.

Second, in consciousness, which may be too active, preoccupied, or in abeyance. Third, in the quality and quantity of experience available as a standard of comparison. For example, even in health we do not see all that stimulates the retina, we do not see all the images that are transmitted to the visual centres, we do not see all those that rouse consciousness into activity, we do not correctly see even the infinitesimal few that we think we have carefully compared with the corresponding elements of our imperfect experience. If in health we are the sport of our environment, how shall we fare in disease?

Failure to receive and interpret sensory stimuli correctly results in illusion. These stimuli are usually normal and applied at the periphery, but they may be false and applied anywhere along the nerve trunks right up to their central expansions. And the fact must not be lost sight of that they are always afferent. The sensory centres are never and can never be stimulated to the production of true sensory images excepting from without, and their psychical stimulation to this effect is impossible.

Illusions are presentative-representative errors, and falsity may exist in one or both of these elements. Sensory images may be false and still further misconstrued, or, being true themselves, they may be misinterpreted in terms of predominating thoughts or emotions. It is as though obtrusive ideal images came in front of the sensory ones, there to shut off the full view of experience and to give rise to the belief that they themselves are the real presentations. In this way the ticking of the clock is sometimes interpreted by the melancholiac as a torrent of abuse. The patient, wretched and unhappy, is upbraiding himself for sins he thinks he has committed and for which he believes he is being punished. By and by his thoughts and the clock strike step, as it were, and consciousness, confused and preoccupied, clothes the indistinct auditory images with the most obtrusive and only available item of experience at the time—the patient's own self-recriminations.

Sometimes a trifling stimulation of one of the senses results in a most elaborate illusion involving other special senses as well. Here the representative element is much in excess of the presentative. For example, an epileptic patient told me that at times, when a certain other patient approached her, something in the latter's walk called up a complete image of her father. The looks, gestures, voice, and very words were his, and the room was transformed temporarily into the patients' home. When the false picture faded, she heaped the wildest abuse upon her fellow-patient for the deception. Here, upon a few meagre outlines was developed a complete scene, in which all the details and coloring were supplied from the patient's experience and emotions, and in which consciousness failed to distinguish sensation from memory or experience, and referred the whole to sensation. And the rapidity with which these illusions sometimes form and are acted upon is very great. In postepileptic fury the patient, still partly unconscious and in a condition of wretchedness and terror, sees his attendant; fear and a person mean an enemy, an enemy means danger, and self-defence, and assault, and possibly murder.

Sensory image defective, attention weak or preoccupied, memory incorrectly or ineffectually stimulated, cognition false—such is the usual skeleton of an illusion. Illusions, then, are false presentative-representative cognitions arising out of misconstruction of sensory stimuli. And if these rest on a pathological basis and are allowed a dominating place in the mind, they constitute an element of insanity.

Every insane person has illusions. In many cases the delirium manifested consists of little else. Examination of forty selected cases, whose only qualification consisted of the ability and willingness to describe their symptoms, showed the presence of illusions in every instance, and in the majority of patients revealed disorder of sensation corresponding thereto. In some chronic cases all the special senses were so affected, and the psychical contact with the physical was always through a false medium. One patient declared that everything was changed. People's voices sounded different, when she looked in the glass her face seemed that of a dead person, her food smelled and tasted poisonous, her needle did not feel right in her fingers, and her limbs moved as though loaded with lead. In some cases illusion of one sense only was elicited, and occasionally it was more marked on one side than on the other.

As to relative frequency, illusions of sight and hearing stand first. This arises out of the fact that these are the two chief channels of sensation. They are especially common in acute insanities, probably because the power of fixing the attention is so greatly compromised. I have had a maniacal patient recognize me as ten different people in as many minutes. Upon the sensory image of my face consciousness seemed to project memory pictures at random, and then to accept them as real.

Alcoholic patients are very prone to this form of error. Here, from nutritional or circulatory changes in the retina, it becomes studded with minute areas and fine lines that are more or less insensitive to light. These appear to the field of vision as corresponding moving shadows, and the wretched patient interprets them as rats and snakes. Insane persons who are partially blind may have illusions for obvious reasons; those who are totally so from irritations along the optic tracts.

A noteworthy phenomenon sometimes seen with auditory illusions in recent cases is a change in the patient's voice. It becomes like that of a person partially deaf, and is lacking in timbre and altered in pitch. This arises out of disorder of the sense of hearing, indirectly through which the tones of the voice are registered. Any sound may originate an illusion. The patient's own words may be echoed back to him altered in tone and meaning. Irritation in the auditory apparatus may give rise to them even in persons with acquired deafness.

Illusions of taste and smell are probably next in frequency, and depend chiefly upon alterations of the mucous membrane and secretions of the mouth, throat, and nose. As is very well known, very slight changes in the health cause corresponding changes in the tongue, which not only originate foul tastes therein, but also compromise its ability to transmit the normal sensations of sapidity. Illusions here usually refer to poisoning or befoulment of food, and they have a special clinical importance as frequently explaining why many patients refuse to eat, besides affording a valuable therapeutic hint. In a similar way foul breath may originate illusions of smell, or they may depend directly upon disorder of the nasal mucous membranes. The idea that illusions of smell point to disease of the frontal lobes I have not been able to confirm.

Visceral, tactile, and muscular illusions also form an important part of the delirium of insanity. All false ideas regarding electricity, inhabitation by animals, pregnancy, violation, vermin upon the skin, changes in stature, and the like, are of this nature. Here the presentative element is usually more at fault than the representative. One patient, who believed that if his skin was wet it could never be dried, and who possessed such marked sensitiveness to heat that he slept without coverings throughout the coldest winters, was found to have a remarkably altered condition of the skin. There was an almost total loss of hair on

his body and limbs, and where the hairs were gone the follicles were atrophied and consisted of minute depressions with a pale shining base. The nails of his fingers did not separate normally from the matrix, but carried it out to their ends. Tactile sensibility was much weakened, but that to heat exaggerated. He could not readily distinguish foods by taste or smell, and all nourishment caused the most intense disgust. Sight and hearing seemed abnormally acute, but after repeated critical examinations of his face in the mirror he pointed out many ways in which its contour was changed. In this case every item of delirium manifested was directly traceable to changes in the sensory apparatus. Although he had been a man of the solidest judgment and was quite aware of the changes referred to, yet the environment was in many ways so distorted to him, and the false images were so distinct, that illusions founded thereon were ruling principles in his life.

Hallucinations are representative errors. They are entirely of psychic origin, and are constructed out of vestiges of former sensations. Every concrete thought is accompanied by a faint ideal image, and if attention is directed intently thereto this image is made to stand out in bold contrast to the other contents of memory. Now the recentness of a sensation is determined by the vividness of the corresponding registered vestige. The more vivid is this, the more recent is the sensation assumed to be. In health the mind constantly proves this assumption by contemporary events or otherwise. But in mental disorder not only is this power of comparison weakened or lost, but also the ideal images, by continued and intent contemplation of them, are rendered abnormally distinct. They seem just to have been registered, and the mind accepts them as sensory. For this reason, the melancholy mother who spends days and nights poring over the mental picture of her dead child, when roused from her reverie, maintains that she has actually seen that child. She does so, not from any sensation she has experienced, but because in her abstraction and confusion she is not able to give this confronting vestige its proper place in her experience.

Hallucinations, then, are psychical images believed to be sensory. The images themselves may be integral representations, and the error consists entirely in the belief regarding their origin, as in the case just cited. Usually, however, they involve additional falsity in their construction, and, indeed, they may be entirely fictitious and underlie concepts that are wholly false.

Hallucination is notably exemplified in those patients who claim that they hear their own thoughts. One patient constantly heard herself cursing the priest, and when she afterward became excited she did curse him roundly. Word images corresponding to her profane thoughts were formed in the auditory centres, and referred in the usual way to that of speech for expression. Here their utterance was inhibited for a time because of their character, and the mind mistook the original vivid images for the anticipated audible words. When the inhibitory power was further weakened, her thoughts forced their translation into sounds which supplanted the hallucinations. The phenomenon of talking to self, so common in patients with weakened self-control, is accounted for in this way.

Three factors at least enter into the production of an hallucination—weakening of object consciousness, intensification of subject consciousness, and reduction of the comparing power. Especially in melancholia are these factors marked, and hallucinations correspondingly common. Fears and suspicions originate with the painful emotional state, and the confused sufferer, no longer able to distinguish clearly what he dreads from what actually happens, refers all to sensation. Often the contemplation of a delirious concept is so intense that the patient is oblivious to all else. Fragments of former sensory images are selected from experience, and united, sometimes in the most incongruous way, until an elaborate vision is constructed. This becomes comparatively more and more distinct, until its vividness exceeds that of sensation. The mind has no choice but to accept it as sensory.

Hallucinations differ intrinsically from illusions. They are fictions, while the latter are only distortions. Illusions are false mental images arising out of sensations; hallucinations are mental images falsely referred to sensation. Illusions that are at all fixed usually depend on change in the nervous mechanism, and may be unilateral; hallucinations have no physical relations at all. Inattention alone often accounts for an illusion, but the belief that the special senses are operating, when they are not stimulated at all, implies a serious involvement of consciousness and judgment. Illusions are exceedingly common; hallucinations are rare, and much less definite in character and outline.

As to relative frequency, hallucinations stand in about the same order as illusions, and for the same reasons. Those of hearing and sight come first and in the order named. Auditory and visual images are much more definite than those of taste, smell, and touch, and are therefore more easily called up. In fact, sounds and forms are not only necessary for the easy expression of thought, but vestiges of them form the chief part of the groundwork of the mind, and normal mental development and activity are hardly possible without them.

As to contents, illusions and hallucinations are very similar. In fact, they are frequently found together, the one shading into the other so gradually that it is often very difficult clinically to tell where illusion ends and hallucination begins. They both partake of the same general coloring as the other elements of insanity present. The depressed and alcoholic patient interprets his retinal disturbance as snakes and rats. The quiet, cheerful, organic dement sees kittens playing on the carpet from the same cause. The illusions usually bear a close relation to the patient's thoughts and habits previous to his alienation, as when the insane criminal sees officers of the law pursuing him or hears his crimes rehearsed in his ears. Sometimes they are complementary to prevailing thoughts or emotions, as when the starving traveller sees visions of the food of which he has so long been deprived. No other phenomena of insanity have anything like the interest or importance as these. Especially is this true of illusions which are the most concrete symptoms of mental alienation, and which more than any others show the intimate connection between mental disorder and brain disease.

Delusions are re-representative errors. They are neither misinterpretations of sensation nor false ideal images referable thereto, and, while they frequently have their origin in illusion or hallucination, they may arise independently of either. They are faulty products of reason, defective abstractions, false beliefs regarding the personality as a whole.

Beliefs are ultimate conclusions, and their soundness will depend upon the character of the more concrete elements from which they are derived and upon the method of their deduction. They are never perfect even in health, for even under the most favorable conditions and after the most careful deliberation, perhaps all our beliefs contain error and many are absolutely wrong. But this error is not delusion. Even insane persons hold many erroneous beliefs which cannot in any sense be regarded as delusions. The dement may assert that Christmas comes in summer,

but that is only a bad guess. His memory is at fault.

The essential condition in insanity is the falsification of the ego. Changes in the sensory apparatus, in consciousness, and in memory, and their results as already described, contribute to the formation of a new personality. Now it is only those abstractions into which the concept of this false ego strongly enters that may constitute delusions. Beliefs on other topics may be perfectly sound, and if false they come into the category of mistakes. In many patients all thought is made to centre around and include this false concept, and if the mind attempts to correct the resulting error, the intruding element continues to present itself and falsifies the correction. A morbid egotism shows itself everywhere. The patient becomes a laughing-stock to himself; he is deluded.

A delusion, then, is a false belief of an insane person arising out of and referring to changes in his personality, due to brain disorder. As the ego is depressed or exalted, so are the corresponding delusions restrictive or expansive, and as the personality is reduced to that state of indifference to which all insanity tends they gradually lose character and fade away.

It is a physiological principle that when any organ functions abnormally it gives rise to a sense of discomfort. This is especially true of the brain, and it may be stated, practically without qualification, that the fundamental false belief of an insane person is restrictive. In fact, depression characterizes the onset of all forms of mental alienation, sometimes amounting at once to almost total obscuration of the intelligence, as in acute stupor.

Ordinarily, however, the process of mental alienation is a gradual one. Attention becomes more and more introspective, an increasing sense of resistance is felt in thought and action, and discord arises between the individual and his environment. The bodily functions fail. A morbid ego is thus developed, whose essential quality is that of unworthiness. In a certain proportion of cases this goes on until the old personality is entirely subjugated, and the sufferer, overcome with a sense of his insufficiency, may believe that he is utterly ruined and lost. Cerebral energy is almost wholly transformed into mental pain, and any excess may issue as restlessness or burst through all restraint in the form of agitation. Illusions and hallucinations are frequent; delusions rarer and not essential. This is the type of restrictive delirium.

But many persons are incapable of prolonged depression. Beyond a certain point, the very influences that depressed become excitants. Inhibitory power in them is soon exhausted, and especially is the cerebral circulation readily released from its control. In such the preliminary depression referred to soon gives way to exaltation. The abnormally increased cerebral nutrition gives rise to an excess of cerebral energy, which is readily transformed into extravagant thought and action, and the patient believes he has risen superior to his former self and to his fellows.

In some cases, indeed, inhibitory power is soon lost and the functions of brain and body run riot, nervous energy is rapidly exhausted, the temperature rises, nutrition fails, and emaciation ensues. Sensation is perverted, illusions and frequently hallucinations occur, and fragmentary delirious concepts follow each other in the wildest confusion. Appreciation and consciousness are soon lost, and any flaring up of the dying vital energy relieves itself in purposeless action and meaningless muttering or shouting. The patient sinks into a typhoid condition, and death usually closes the scene. Such is the type of the delirium of exaltation.

Most cases of mental alienation, however, do not approach either of these extremes. The personality is transformed without violence. There is no sudden arrest of cerebral activity or consequent accumulation of nervous energy to be transformed into mental pain or to burst forcibly through inhibitory control. Immediate relief is afforded in perverted ideation, and that degree of mental calm necessary for the operation of reason, at least in an imperfect way, is preserved. Illusions and hallucinations occur, but it is here alone that the conditions are favorable for the development of the clearly defined delusion.

Here, because of the greater stability of the underlying pathological conditions, delusions are less fleeting than in the acuter types, and tend to persist without change. Entering the mind insidiously, they develop along with it and become an intrinsic part of the mental fabric. When once the concept of the ego has become distinctly false, it modifies all thought to some extent, so that not only intrinsic conditions, but also the behavior of the environment begins to be interpreted more and more according to a false standard. This may go on until the identity is lost and the patient believes he has been transformed into a different being. Those cited cases in which a single delirious concept seems to have persisted without diffusion for years in an otherwise normal mind probably are to be accounted for by defective observation.

The tendency of delusions to arrange themselves around some central false idea is known as systematization. The more fixed they are, the greater this tendency becomes. The significance of the systematized delusion depends on the fact that, with the reason still active and in a time of mental calm, the mind deliberately adopts it as an intrinsic and active element of itself.

As to contents, delusions usually coincide with the patient's prevailing emotions, and as a rule bear a pretty constant relation to his temperament in health. They may refer directly to his own person, or relate to the conflict which of necessity soon arises between the alienated and his environment. Expansive and restrictive delusions are very frequently found together, and especially is there a tendency for grandiose ideas to arise as complementary to those of persecution. It is for the relief afforded thereby that the patient who is harassed by all sorts of persecutions maintains that he is superior to his enemies, and that these annoyances are directed toward him because of his excellence. Thus we may have falsity along the entire length of the cognitional series: false sensations, illusions, hallucinations, delusions.

The insane impulse and many other interesting topics must be reserved for a subsequent paper.

Primary Lupus of the Larynx.—In a paper read before the American Laryngological Association Dr. Emil Mayer, of New York, concluded as follows: 1. A primary lupus of the larynx does not exist. 2. The secondary lupus of the larynx is a painless affection and may escape detection for many years. 3. Tubercle bacilli are present in but a few cases, and even then are difficult to find. 4. In appearance laryngeal lupus resembles syphilis more than it does tuberculosis of the larynx. 5. The absence of adhesive bands, which are always present in the later stages of syphilis, is characteristic of lupus. 6. The prognosis of laryngeal lupus is *quoad vitam* good, *quoad sanationem* doubtful, but the patients are always in danger of pulmonary or miliary tuberculosis. 7. The treatment consists in local applications of lactic acid, nitrate of silver, chloride of zinc, iodine, menthol, or galvanocautery. Internally, creosote, cod-liver oil, and iodine preparations are advisable. In obstinate cases surgical measures (laryngotomy and extirpation of the diseased areas) must be considered.

THE TREATMENT OF INOPERABLE SARCOMA WITH THE MIXED TOXINS OF ERYSIPELAS AND BACILLUS PRODIGIOSUS: IMMEDIATE AND FINAL RESULTS IN ONE HUNDRED AND FORTY CASES.[1]

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The question of the value of these toxins in the treatment of inoperable sarcoma is one that depends for its solution, not upon high authority or *a priori* arguments, but rather upon facts derived from careful observation and large clinical experiences. No one could possibly witness a number of hopelessly far advanced inoperable sarcomata, the diagnosis of which had been confirmed by the most skilled pathologists, entirely disappear under injections of these toxins, without being convinced that there is something of value in them. The successful cases, a number of which have now remained well beyond three years, more than offset the many failures.

I have decided in the present paper to confine my remarks almost entirely to sarcoma, in order to correct, if possible, the misunderstanding so common among men who have read the subject but casually, that the toxins are advised indiscriminately in all cases of inoperable cancer, whether sarcoma or carcinoma. The successes in carcinoma have thus far been so few in number, and these mostly but temporary, that I think it wise to restrict the toxins to sarcoma and, it is needless to repeat, to inoperable sarcoma. I have never advised the treatment in cases of sarcoma that were amenable to operation, unless it be in a few cases in which a brief period of treatment was advised with the idea of avoiding amputation of a limb. If a tumor be in the soft parts, and especially if spindle-celled, I think it justifiable, and even strongly to be advised to make an attempt to save the limb. I have now a patient well nearly two and one-half years with rapidly recurrent spindle-celled sarcoma of the right hand, in which amputation of the arm would have been done had not the growth disappeared under the injections. This case cannot as yet be considered as one of cure. Drs. L. L. McArthur and John E. Owens, of Chicago, have had two cases—the one a spindle-celled sarcoma of the calf of the leg, and the other a myeloid sarcoma of the tibia—in both of which the tumor disappeared under the toxins and made amputation unnecessary. These patients are both well after more than three years. Dr. McArthur has had a third case of rapidly recurrent sarcoma of the arm, in which amputation was advised and refused. The tumor disappeared under the treatment and the patient has remained well. I do not believe the chances of a cure by amputation are jeopardized by delaying the latter for the short time necessary to determine the success or failure of the toxins. In cases of rapidly growing small round-celled sarcoma of the bone, I would not advise the toxins, but immediate amputation.

The Use of the Toxins as a Prophylactic Measure.—I have used the toxins in a number of cases after primary operation, with the idea of lessening the chances of recurrence. Theoretically this use of the toxins has much to recommend it, but as yet the cases are too few in number to justify positive statements. A few weeks' treatment with moderate doses is free from risk, and is, I believe, worthy of trial.

The Method of Preparing the Toxins and Technique of Administration.—The preparation at present used differs in no way from that described in my previous paper. It consists of the mixed, unfiltered toxins of the streptococcus of erysipelas and bacillus prodigiosus, grown together for two weeks and sterilized by heating to 58° C. In children and patients much reduced in strength, it is better to use the filtered toxins. This preparation is much weaker than the unfiltered, the relative strength being about 1 to 10. However much difference of opinion there may be as to the part the bacillus prodigiosus plays in causing the disappearance of sarcoma, the fact remains that all of my own successes, as well as those of other surgeons, have been obtained with the combined toxins, and I am quite convinced that the process of degeneration of the tumor tissue is greatly increased by the addition of the prodigiosus.

Many opinions have been expressed as to the nature of the process by means of which a cure is effected in the successful cases. The opinion which has been most generally advanced—though resting on theoretical rather than practical knowledge—is that it is a simple necrosis or sloughing process, resembling that following the injection of any powerful escharotic, like carbolic acid. Consequently, it has been regarded as an entirely local process. This is far from the truth. While in some cases of soft round-celled sarcoma the rapid breaking down of the tumor would lend support to this view, there are many cases that absolutely disprove its correctness. A number of cases of sarcoma have disappeared entirely by absorption, with no breaking down; and furthermore, in several cases the injections were made remote from the tumor. This proves the action to be systemic as well as local. The toxins in some way, acting probably through the blood serum, cause a necrobiosis with fatty degeneration of the tumor cells, the breaking down and formation of the slough depending entirely upon the preponderance of the cellular elements over the intercellular or fibrous stroma. In the spindle-celled variety absorption without breaking down is the more common process, while in the round-celled type the reverse is true. Usually, when possible, it is better to give the injections locally; a much larger quantity can, however, be safely given subcutaneously than when injected into the tumor, and this is a point of much practical importance. A severe chill and rise of temperature to 105.5° F. have been known to follow the injection of one-half minim of the mixed, unfiltered toxins when made into a highly vascular sarcoma. The severity of the reaction depends largely upon the rapidity of absorption.

Dosage.—The rule should be to begin with a minimum dose—for example, one-half minim—and slowly increase daily until the desired reaction has been reached. If this rule be carefully observed, the element of danger is exceedingly small. Inasmuch as the dose depends largely upon the virulence of the cultures from which the toxins are prepared, and since it is extremely difficult to keep cultures of the same degree of virulence, the dose must vary within certain limits, and can be determined in the individual case only by trial, the temperature furnishing the guide. The initial dose should never be larger than one-fourth to one-half minim; boiled water may be added for the proper dilution. The aim should be to give sufficient to produce a temperature of 101°–103° F. In some of the successful cases not more than three or four chills were produced during the entire course of treatment, and frequently patients have steadily gained weight while under the treatment. This controverts the statement of some writers that the treatment is exceedingly depressing and causes rapid emaciation. This may be true if the doses are too large, but not when the treatment is judiciously carried out. Strychnine may cause speedy death or act as an excellent tonic, according to the amount administered.

[1] Abstract of paper read at the meeting of the American Medical Association in Denver, in June, 1898.

Sterilization of the Skin and Needle.—The strictest precautions should always be taken to guard against infection, for the reason that a patient is unusually liable to infection from other germs while taking the toxins. The skin should be rendered aseptic and the needle be sterilized by being passed through an alcohol flame before and after using.

Duration of Treatment.—It is possible in most cases to tell within a comparatively short time whether or not the toxins are likely to be efficacious. If no improvement is noted at the end of three weeks, there will be little use in continuing the treatment. In many cases marked improvement is seen within a week after the first injection. If improvement occurs, the treatment should be kept up until the tumor has disappeared or until it is evidently again increasing in size.

Dangers.—The question of the cumulative action of the toxins if the treatment be long continued is an important one. The toxins are rapidly eliminated, and that no harm is likely to result from prolonged treatment is evidenced by the following cases:

In one case the toxins were administered steadily two or three times a week for a period of two and one-quarter years; the patient gained ten pounds in weight and remained in perfect health the entire time. In a second case the treatment has been continued, with few intervals of rest, for a period of nearly four years, with no ill effects. I have personally had two deaths from the treatment and I have known of six others in the hands of other surgeons.

Review of Cases thus far Treated.—Out of a total of 140 cases, 84 were round-celled; 21 spindle-celled; 6 mixed; 9 melanotic; 2 chondro-sarcoma; 6 sarcoma, in which the clinical diagnosis was not confirmed by microscopical examination; 12 sarcoma, in which the type of cell was not stated, though the diagnosis of sarcoma was confirmed by microscopical examination. Of the 84 round-celled sarcomata, 35 were more or less improved; 3 disappeared entirely, 1 patient remaining well upward of three years, 1 at present well one and one-half years, and the third well at the end of one year, since which time he was not traced. Of the 21 spindle-celled, 10 disappeared and all the others showed marked improvement. Of the 6 mixed-celled, 3 improved; 2 were unimproved; 1 disappeared and the patient remained well for three and one-quarter years, at the end of which time there was a recurrence in the abdomen, which proved fatal after six months' time. Of the 9 cases of melanotic sarcoma only 2 showed slight improvement, the remainder being unaffected by the treatment. One large chondro-sarcoma disappeared, recurred at the end of seven months, and finally proved fatal; the other was slightly improved. Of the 12 cases in which the type of cell was not known, 6 were improved, 5 unimproved, and 1 tumor disappeared. Of the 6 cases not confirmed by microscopical examination, 2 osteosarcomata disappeared, 2 improved, and 2 remained unimproved.

Summary of Results.—Well over three years, 8 cases; well from one to three years, 9 cases; well from six months to one year, 4 cases; recurred after having once disappeared, 4 cases—2 of these patients died, 2 are still living in good health after further treatment.

Successful Cases Treated by this Method by Other Surgeons.—From published reports and personal communications, I have been able to collect 35 cases of inoperable sarcoma in which the tumor completely or very nearly disappeared as a result of the treatment in the hands of other surgeons. In 26 of these cases the tumor entirely disappeared. Of the total number, 10 were spindle-celled; 11 were round-celled (1 giant-celled); 1 myxosarcoma, and 1 endothelial sarcoma; in 10 cases no microscopical examination was made, though careful examination by a number of surgeons rendered the clinical diagnosis scarcely open to question. In the remaining cases the diagnosis of sarcoma was confirmed by microscopic examination, but type of cell not stated. In addition, in 5 of these 9 cases there was a history of recurrence after operation. Of the 34 cases 9 are now well upward of three years; 9 from one to three years; in 6 cases the disease recurred in other regions of the body at varying intervals of from six months to two years after the disappearance of the primary growth. This latter fact alone—that the disease recurred elsewhere—is sufficient to establish the correctness of the original diagnosis of sarcoma.

Conclusions.—A careful study of my own cases as well as those thus far treated by other surgeons justifies, I believe, the following conclusions, which, I might add, are in almost perfect accord with those recently published by Moullin:[1]

I. A considerable number of inoperable sarcomata, the correctness of the diagnosis of which is beyond question, have entirely disappeared under this method of treatment.

II. A large proportion of these cases have remained free from recurrence more than three years after treatment—the period which has generally been accepted as of sufficient length to justify their being regarded as permanent cures.

III. Different varieties of sarcoma differ widely as regards the manner in which they are acted upon by the toxins. The results thus far show the treatment to be most successful in the spindle-celled variety, one-half of the spindle-celled sarcomata so far treated having disappeared. Round-celled sarcomata yield less readily, although a certain number have been successfully treated. No case of melanotic sarcoma has, up to the present time, shown more than slight improvement.

IV. The action of the toxins upon sarcoma must be regarded as a rapidly progressing necrobiosis with fatty degeneration. This action is not the result of inflammation, nor does it resemble the destructive action of a local escharotic, but it is rather specific in character, exerting a direct influence upon the tumor cells.

V. The specific action is further confirmed by the fact that several tumors have entirely disappeared when the injections were made subcutaneously remote from the tumor.

VI. This method of treatment is attended with a certain amount of risk, unless certain precautions are taken. The chief dangers to be guarded against are: (1) Collapse from too large a dose of the toxins or from injections into a very vascular tumor; (2) pyæmia from insufficient precautions as regards asepsis, especially in cases in which there is a granulating or sloughing surface. (That the risks are small is shown by the fact that in upward of two hundred cases treated personally death was caused by the injections in but two, one of which was so nearly moribund that no treatment should have been begun.)

VII. The use of small doses of the toxins for a short period after primary operation, as a prophylactic measure, theoretically has much to recommend it, and and if proper precautions be observed the treatment should be practically free from risk.

VIII. The action of the toxins of erysipelas upon sarcoma, as shown by clinical results, is in strict accord with the known action of the living streptococcus of erysipelas; therefore the method has a perfectly logical and scientific basis.

I wish to express my great obligations to Dr. B. H. Buxton of the Loomis Laboratory, whose skill and unremitting labors in preparing the toxins have made the results here reported possible.

[1] Lancet, February 5, 1898.

THE RIGHTS OF THE EXPERT WITNESS. PERSONAL EXPERIENCE WITH THE DIXON DECISION.[1]

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THE opinion of the supreme court of this State in the case of J. N. Dixon *versus* The People of the State of Illinois was filed November 1, 1897. In Illinois, as far as expert testimony is concerned, the decision in this case is now the law, and to a great extent it determines the law of the land. On account of its importance the case has attracted widespread interest, and the details are very generally known to medical men and lawyers throughout the country. Nevertheless, it seems advisable in this connection briefly to refer to its salient points, as well as to the arguments of counsel and the factors which apparently influenced the appellate and supreme courts in arriving at a decision.

In January, 1895, Dr. J. N. Dixon, of Sangamon County, Ill., in answer to a subpœna, appeared in the circuit court as an expert witness. He was confronted with a hypothetical question relating to injuries, of which he had no personal knowledge, said to have been sustained by a woman whom he had never known. He was asked as to the probable result of a fall on a defective sidewalk in producing certain injuries, and, after receiving the assurance of the court that he was called as an expert witness only, he respectfully declined to answer. He explained his refusal to answer "on the ground that an expert witness is entitled to a different and greater compensation than an ordinary witness is allowed, and that an expert is not required to give expert testimony without compensation as an expert, unless a reasonable compensation shall have been paid or provided for." The court held refusal to answer as "conclusive proof of contempt of court and of his disposition to persist in such contempt," and imposed a fine of $25. The doctor's attorney, Mr. Conkling, excepted to the order of the court finding the witness guilty of contempt, and also excepted to the order of the court fining the witness. He filed a motion for the remission of the fine, which was overruled. An appeal was then prayed to the appellate court, which was allowed.

The opinion of the appellate court was filed December 2, 1895. The question at issue is thus stated: "Could the appellant, under the circumstances, lawfully decline to give his professional opinion without reasonable compensation?" It is acknowledged that the question has never been directly passed upon in Illinois, nor "can any rule be drawn from the currents of judicial decisions in other jurisdictions or from a concurrence in the views of text writers." It is further acknowledged that the contention on Dr. Dixon's part is that "the party desiring his professional opinion should be required to compensate him therefor, before the law should compel him to express that opinion for the benefit of such party." The opinion holds that the circuit court ruled correctly in holding that the law required the witness to answer the question. It is stated that the statute has fixed the compensation to be paid all witnesses, and "the law requires every person, when duly subpœnaed, to appear as a witness and accept as full compensation the statutory allowance, however inadequate it may be."

It is held that the administration of justice in the adjustment of the contentions growing out of the business affairs or concerning mere private personal property, is "one of the most important sovereign duties devolving upon the State. This duty can be discharged only through the medium of judicial tribunals, and these tribunals would be powerless to perform their functions if they could not compel witnesses to attend and disclose facts in knowledge pertinent to these contentions." It is further held that no distinction can be drawn between different kinds of knowledge, nor can a witness "decline to make known facts which have come to his knowledge either by observation or study and experience, upon the ground that he can use such facts or knowledge for his pecuniary benefit in the business affairs of life, when the disclosure thereof is important to the attainment of justice in the courts." It is then stated that some books on expert testimony enumerate as many as seventy classes of expert witnesses, and it is asserted that it would subject a litigant to great financial burdens if each member of these different classes of witnesses had to be paid a reasonable compensation "before he could be compelled to disclose in open court facts in his knowledge relating to the right and justice of causes there pending for determination."

The appellate court, in affirming the judgment of the circuit court, takes occasion to state that knowledge gained by study, observation, and experience is not property within the meaning of the word, in the sense that "private property shall not be taken or damaged for public use without just compensation." The word property, it is asserted, means "tangible things and rights which accompany or are incident to the use, enjoyment, or disposition of such things."

In June, 1896, this case came up to the supreme court on a further appeal. The brief of Dr. Dixon's attorneys, Messrs. Conkling & Grout, is a learned dissertation concerning medical expert testimony in the different States. It refers also to the customs of the ancients, and quotes from authorities and practices of almost every civilized country. Their argument is concise and scholarly. They state the fact emphatically that in the case at bar there is no involvement of any question of government, of crime against the laws of the State, or any matter which might be included under the right of taxation or the police power. They say: "A citizen having no knowledge of the facts in controversy, no interest directly or indirectly in the result of the suit, is compelled to yield up without compensation the fruits of his study, skill, and experience, that one of the parties litigant may recover a larger sum of money or that the other may escape the payment of such sum. As well might the farmer, the merchant, or the manufacturer be required to contribute of his property at the call of any litigant who might fancy it would be to his advantage to have it."

They further show that no question of the duty of the citizen to the State is involved, nor is there the refusal of a witness to testify to facts in controversy within his knowledge. There is purely and solely a question of expert testimony which, it is endeavored to prove, is either property or "particular services." Under either view, it is asserted that a citizen under the circumstances in question cannot constitutionally be required to give expert or opinion evidence without full and just compensation being made for the same.

The decision of the supreme court in this case is well known. It was decided that a physician, when subpœnaed and interrogated as an expert witness, may be compelled to testify without pay other than the statutory fee. He must testify in civil as well as criminal suits, since "in either case the object is to promote public justice and insure the peace and good order of society." If he refuses to testify when regularly subpœnaed and placed upon the witness stand, the court is justified in fining him for contempt.

In the opinion of the supreme court, delivered by Mr. Justice Magruder, it is stated that the grounds upon which the right to extra compensation has been sustained are generally three in number: First, it is

[1] Read before the Illinois State Medical Society, May 18, 1898.

claimed that the time of the expert witness is more valuable than the time of ordinary men, and that, by attendance at court to give his testimony, such a witness meets with a loss of time. The opinion is given that any ordinary witness who goes to court and testifies as to facts is subjected to a loss of his time as much as a witness who goes there to testify as an expert upon a mere matter of opinion.

The second ground upon which the claim for extra compensation is based, is that the skill and accumulated knowledge of the expert are his property, and that a man's property should not be taken without just compensation. It is asserted that it is not accurate to say that the mere abstract knowledge, acquired in the study of a special employment, is of itself property. "It is the right to apply that knowledge to the accomplishment of a particular result which constitutes property." If the witness, for example, had been required to answer a question with the view of prescribing a remedy for the woman who was injured, then it might be said, if he was not offered any compensation, that he was deprived of a property right. "But when a physician is asked a hypothetical question, and is called upon to give his opinion upon the facts stated in the hypothetical question while he is testifying as a witness in court, he is not thereby required to practise his healing art. He is merely making a statement, not for the purpose of effecting a cure or relieving a patient, but for the purpose of enabling the court and the jury to understand correctly a case which is before the court."

It is conceded that, in a certain sense, the knowledge of the physician, acquired by special study, is property; but, it is added, "the question here is not so much whether certain knowledge is property, as whether the requirement that he shall answer a hypothetical question is a taking of his property." It is further stated—and right here is the important point in reference to my own experience—that "where he is required to make an application of his knowledge to a particular case, so as to secure a particular result—such as, for instance, the curing of a disease or the healing of a wound—then he would undoubtedly be entitled to compensation. A physician or surgeon cannot be punished for a contempt for refusing to make a post-mortem examination, unless paid therefor, nor can he be required to prepare himself in advance for testifying in court by making an examination, or performing an operation, or resorting to a certain amount of study without being paid therefor."

The third ground for extra compensation is that the accumulated knowledge and skill of an expert witness may be treated as "particular services," and it is explained that, while such a construction of expert testimony may hold good in Indiana, it does not apply to Illinois, because the ordinance of 1787, wherein those words are found, is not in force in this State.

The supreme court concludes by quoting and endorsing the views of the Texas court of appeals as follows: "It is to be regretted that a member of a profession, so distinguished for liberal culture and high sense of honor and duty, should refuse to testify in a case pending before the courts of his country, involving the life and liberty of a fellow-being, and the rightful administrations of the laws of a common country."

Now this is the decision in the celebrated Dixon case. Much might be said in criticism of the opinion of the supreme court, but it is, I suppose, useless to do so now. This decision has become the law, and the duty of every citizen is to obey the law. In fact, he has to do so or suffer the consequences. It is now possible for every pettifogging attorney to call to his aid in the most trivial case in any court the most eminent man in the medical profession. The engagements of such a man are not to be considered. He must leave the most important case to attend the behests of any attorney who may wish to dignify his cause by the presence of some noted physician or surgeon on the witness stand. He will receive one dollar a day and five cents a mile for travelling expenses. His absence may cause him to lose hundreds of dollars, but the "member of a profession, distinguished for liberal culture," etc., will not, of course, take exception to a mercenary matter of this kind. His "high sense of honor and duty" will amply console him. Possibly he may be of a philosophical turn of mind, so that he will duly appreciate the value of an enforced engagement of this kind as an opportunity for enjoying a much-needed diversion.

But I will say no more in explanation or criticism of the Dixon decision. Every medical journal in the country has been up in arms against it. Every medical expert has protested. It is useless to inveigh against it, for it is the law which we must all obey.

Unfortunately, this decision appears to have far-reaching consequences which as yet we have not dreamed of. Not content with depriving the medical man of his fee whenever he is put upon the witness stand by due process of law—that is, by subpœna—if my experience counts for anything, it would appear that this decision is to become the basis for depriving him as well of numerous other rights which other citizens hold under the law of contracts and the principles of equity. Let me relate the details of my case as far as it has gone:

In the summer of 1890 I was called to treat Emlen S. Blye, a woman of uncertain age and unknown antecedents. She was injured in the knee on a suburban train of the Illinois Central Railroad, and suffered severely from her injuries for some little time. While I was treating her, she told me that she intended to bring suit against the railroad company, and asked me to do everything in my power to help her. She said her attorney claimed that she could recover at least two or three thousand dollars, and in that event she promised to see that I was well paid for anything I might do for her.

She wished me to advise with her attorney, Colonel Southworth, which I did on some ten or twelve occasions. We conferred as to the best way to present her case. It was of course evident that if the injury was permanent, it would prevent her from earning her living as a teacher of the Delsarte method, which was her occupation prior to the accident, and consequently she might reasonably claim heavy damages.

I suggested to Colonel Southworth the advisability of having Mrs. Blye consult Dr. Charles F. Stillman, now deceased, but at that time a well-known orthopædic surgeon. My object in this advice was to secure for the patient the benefit of this specialist's skill in the treatment of the injury to her knee, as well as his testimony in her behalf on the witness stand. For several months she was treated by him and by Dr. A. B. Hosmer, associated with him, but without appreciable benefit.

The day of the trial drew near. Colonel Southworth and I deliberated as to the conduct of the case. We considered the advisability of subpœnaing Dr. Fenger. There was, in my mind, a suspicion of tuberculosis. I feared if Dr. Fenger were placed upon the stand the question of tuberculosis in reference to the patient's injury to the knee might be raised, and I questioned the effect of his testimony upon the jury. By my advice he was not called. Dr. Stillman's ill health necessitated the use by him of a large quantity of morphine. I feared the result of a cross-examination in his debilitated condition and advised that Dr. Hilton, who had kindly seen the patient a few times in my absence, should be the only practitioner besides myself who would testify for Mrs. Blye.

In the summer of 1891 the case came to trial. I was not subpœnaed, but was present the first day and gave my testimony as to the facts as far as I knew them. I also gave expert testimony as to the probable relationship of the injuries sustained to the accident which had occurred. I further stated that in my judgment the injuries sustained were permanent.

The second day I received a telegram from Colonel Southworth, asking me to come to court immediately. He thought it probable that medical experts would be put on the stand to controvert my testimony. He wished me to be present to assist him in the examination of these witnesses. On the receipt of this telegram I left everything and hurried to the courtroom. No medical witnesses appeared during the morning session. When court reconvened in the afternoon, I was present and remained in attendance until it became evident that no expert testimony would be offered by the railroad company.

The result in this case, after all appeals had been taken, was a verdict for $9,000, which the patient received, and which at that time was one of the largest verdicts ever sustained in a personal-injury case.

I was absent in Europe at the time Mrs. Blye was paid this money. She wrote my partner for a bill for professional services. This he made out at a nominal figure for all services not connected with her lawsuit, and she paid it. He knew she claimed to be poor, and was ignorant at the time that she had recovered in her suit against the railroad company. I had simply marked the word "special" in our ledger in the space corresponding to the date of her trial, and no bill was sent her for services rendered by me in and about her lawsuit. I confidently expected, when she recovered a verdict so much in excess of her most sanguine expectations, that for the services I had rendered she would gladly give me at least $500.

But, alas, for my confidence in feminine gratitude! In the summer of 1893 I saw Mrs. Blye, like Maud Muller, more or less gracefully raking the grass in front of an apartment building she had built with the proceeds of her verdict. I stopped my horse and complimented her on her own healthful and cheerful appearance and on the substantial character of her building. Incidentally, I made bold to remark that I had not been paid for my services in her case. She now waxed indignant. She said her attorney was everything that was vile, and intimated that I was no better. I remonstrated gently but ineffectually, and left her to her horticultural pursuits.

Subsequently I communicated with her. I sent her a bill for $100 for my services. I wrote her, but to no avail. Finally, in 1895, I sued her before a justice of the peace and secured judgment for $100 and costs of suit. She took an appeal, and on December 17, 1897, the case came to trial in the circuit court of Cook County before his Honor, Judge Richard S. Tuthill. I here secured judgment for $2.20, the statutory fees for an ordinary witness in any case.

Now the proceedings in this case are interesting. My attorneys, Messrs. Church & McMurdy, showed that I gave expert testimony and assisted the counsel in preparing for trial. Mrs. Blye's attorney admitted that I had testified in her suit against the railroad company, that I had not been subpœnaed, but attended voluntarily, and was called as an expert witness. He claimed that I was entitled to nothing but what the statute provides, but he also admitted that if I was entitled to anything over and above the statutory provision I was entitled to $100. I then testified regarding my connection with the case as already narrated, and in answer to a question from the court I said that I considered my services worth $500, but I sought to recover $100 only. It was admitted that Mrs. Blye had received $9,000 after her case was affirmed in the appellate court. She offered no evidence.

My attorneys then asked the court to hold the following propositions of law:

1. That a valid contract may be made with a physician to assist the attorneys in a suit at law in the preparation of the case, whereby the physician is to be given extra compensation therefor.

2. That a valid contract may be made between a party to a suit at law and a physician for the payment to the latter of a compensation beyond statutory fees in consideration of assistance rendered by him to the attorneys of the party in the preparation and trial of the case.

Both of these propositions were held by the court, but the court refused to hold:

1. That the contract in my case was valid.

2. That a person may make a valid contract with a physician by which it is agreed that the physician shall be paid extra compensation for his services in testifying as an expert in a suit at law.

3. That I was entitled to recover of the defendant the sum of $100.

It was further held that I was entitled to receive the sum of $1 for each day's attendance and five cents per mile each way for necessary travel when attending court as a witness, and no more. Judgment was given for $2.20, and I have appealed the case to the appellate court, where my appeal is now pending.

The learned judge seemed much interested in the Dixon decision, which he then saw, as he said, for the first time. He told us that he had nothing besides my case to consider that afternoon, and for our edification, I presume, he read aloud the report of the Dixon decision from a copy of the Illinois Official Reporter, which my attorneys handed him. When he had finished, he announced that there was nothing more to be said. His attention was called to the fact that I had not been subpœnaed, that I had assisted the counsel, and to other facts in the case, but all to no avail. He seemed to take the view that the Dixon decision settled all matters relating to medical testimony, and that the statutory fee must cover all claims of every kind that a medical witness could possibly make under any circumstances in any case.

I cannot consistently or conscientiously accept this conclusion. The sum of money involved in my own case is only $100, and it is doubtful if I receive a dollar of it, even if, in the course of time, the appellate court decides in my favor. I am given to understand that the $9,000 received by Mrs. Blye in 1892 has now been dissipated in one way or another. Nevertheless, I feel there is here a principle at stake, and I believe it to be my duty, under the circumstances, to maintain the privileges of the citizen, which are not sacrificed when he becomes a medical man. I consider that the Dixon decision has been used to abridge my personal rights, both as an individual and as a physician. I therefore consider it but just for me to do all in my power to prevent what I regard as further injustice being done to members of the profession who may happen, in the course of their practice, to act in the capacity of expert witnesses.

The brief filed by my attorneys in the appellate court shows the two questions involved:

1. Where a suit at law involves an inquiry into questions concerning any particular science, as to which the opinions of experts in that science are necessary or competent evidence, can an expert witness, who at the request of a party and upon promise of compensation beyond statutory witness fees has conferred with the attorneys of such party in advance of the trial for the purpose of advising them in reference to the character of his testimony and assisting them in preparing for its proper presentation to the court and

jury, and has then, without subpœna, attended the trial as a witness and given his opinion as an expert upon the matters submitted to him upon the witness-stand, recover from the party employing him the larger compensation promised?

2. Where, in addition to the particular services above described and upon a like promise of compensation, the expert has in advance of the trial consulted with the attorneys for the party employing him, and advised them as an expert generally upon its conduct in reference to the questions of science involved, and attended at the trial for like purpose beyond the time necessary for his attendance as a witness merely, can he recover the larger compensation promised?

Many authorities are quoted to show that expert witnesses should be paid for their services. The radical fallacy of the argument based upon a supposed public duty is clearly expressed as follows:

"That it makes the obligation of the particular citizen to perform the particular duty depend upon his arbitrary selection for that purpose by a private and irresponsible individual, out of a multitude of his fellow-citizens, and by punishing him for a failure to obey that designation virtually places his liberty within the arbitrary and unrestrained control of any one who chooses to exercise it. The process of the court is signed and sealed by its clerk in blank, and delivered to any applicant."

It is admitted that, since the Dixon decision, the question, in the bald form just presented, must be regarded as settled. But, my attorneys add, "it would be manifestly erroneous to burden that opinion with any purpose beyond that which was necessary to the decision of the particular question there before the court, which was expressed in the syllabus in these words, namely: 'A physician subpœnaed and interrogated as an expert witness only cannot refuse to testify upon the ground that no compensation greater than that allowed to ordinary witnesses has been paid or promised to him.'"

The differences between the Dixon case and mine are then stated, as follows:

1. In the Dixon case the expert attended in pursuance of a subpœna.

In my case I attended upon request of one of the litigants.

2. In the Dixon case the witness, being sworn, refused to testify, on the ground that he had neither been paid nor promised extra compensation, and the court held that this was not a valid reason for refusing to testify.

In my case the extra compensation had been promised and the services rendered, and the only question is whether the promise is one which can be enforced.

3. In the Dixon case, so far as appeared, the only service which the expert was called upon to render was to answer the questions asked of him as a witness upon the stand. No preliminary preparation was required, no conference with counsel, no advice to counsel in preparation for the presentation of his evidence to the court and jury.

In my case all of these are essential elements of the proposition.

Now in the Dixon case the court expressly said: "A physician or surgeon cannot be punished for a contempt for refusing to make a post-mortem examination, unless paid therefor, nor can he be required to prepare himself in advance for testifying in court by making an examination, or performing an operation, or resorting to a certain amount of study, without being paid therefor."

So that it is evident that the decision of the Dixon case neither directly nor indirectly controls the decision of my case, except in so far as the paragraph just quoted may be considered to uphold, as it undoubtedly does, my contention.

This all seems very clear to me. I fail to understand how any one can take a different view. My only explanation is that the learned judge before whom this case was tried seems to have fallen into some strange misapprehension concerning the real point involved. He admits that a valid contract may be made between a litigant and a physician, by which it is agreed to pay a physician for assisting counsel in a case, and the undisputed evidence shows that such a contract was made between Mrs. Blye and myself. Nevertheless the court refuses to hold that the contract between us is valid. He rests on the Dixon decision, and appears to think that decision decides everything as far as medical experts are concerned. I venture the opinion that he will not be upheld by the appellate court unless upon some technicality.

Now here is my experience with the Dixon decision. It is not yet complete, but I confess it is a sufficient experience to satisfy me. Much might be said in this connection. I content myself with the expression of but one practical thought. The truth is not what is sought in any law suit. Each side tries to win. The most brutal murderer, if he has means, will retain an eminent attorney to save his neck if possible, and, if not, to secure as lenient a sentence as possible.

It is considered consistent for an attorney, whatever may be his personal ideas on any subject, to act in a professional capacity for any client who can pay for his services. It is well known that few attorneys will refuse a fee from any client, provided it is sufficient in amount. I know an elder in the church near me who is a rabid temperance man, and yet I remember when he defended a saloon keeper who was arrested for selling liquor without a license. I happened to hear him talk to the jury, and I was amused when he asserted that the saloon was the only place where the weary pedestrian could rest. I have a very dear friend who is the attorney for several corporations. He is a Populist—almost a Socialist—and in public addresses he condemns trusts and corporations. In his professional capacity, however, his services are given to the corporations he bitterly and vehemently denounces.

Certain medical men, in their professional capacity, are called upon to do medico-legal work. This is legitimate practice. Indeed, it demands, in some instances, a very high degree of medical knowledge, great perspicuity, as well as perspicacity, and a mind trained in logical reasoning. It is absurd and untrue to say that medical men when called to testify as experts are solely seekers after the truth. It would be as sensible to assert that lawyers in their controversies were actuated solely by a desire to see justice done. Lawyers try cases to win. In certain instances they require the assistance of experts, who may be members of one profession or another, or who may have acquired special knowledge in some department of technology. Lawyers, or the individuals or corporations they represent, employ these experts for their own benefit. They make use of the peculiar knowledge of the expert to further their own ends.

It does not follow that the expert becomes at once a knave and a liar because he is necessarily somewhat partisan. He gives his services to a certain case for a suitable consideration. His peculiar knowledge and his experience enable him to give definite data to the attorneys, upon which they may adopt a line of conduct in their judgment best calculated to win.

I was called on one occasion in a case in which a woman was thrown to the floor of a street car in consequence of some accident to the cable. Six months afterward she submitted to an operation for pyosalpinx. She claimed that infection of the tube had occurred as a result of the accident. The attorneys for

the street-car company called together some six medical men for consultation. They were men who possessed special knowledge in pathology, surgery, and gynæcology, and whose experience was well known. The details of the evidence were laid before us. It soon became evident that a condition such as represented by the plaintiff was an impossibility. We could surely and truthfully say that a pyosalpinx could not develop in a perfectly healthy woman as the result of an accident which did not cause penetration through the abdominal wall, the vagina, rectum, bladder, or uterus. It was conceded that, if the woman was already infected, if she had gonorrhœal salpingitis, for example, it was possible for an accident to aggravate her condition, and it was possible that under these conditions a pyosalpinx might ensue as the result of the accident. We were able to say that, so far as we knew, no case was on record in which a pyosalpinx had developed as claimed, and we were in a position to testify that we had operated in many hundreds of cases of pyosalpinx.

Our advice to the attorneys was to the effect that in their conduct of the case the fact that the woman was perfectly well prior to the accident should be emphasized. We suggested that the usual etiology of such cases in relation to gonorrhœa and abortion should be fully brought out. This was done, and the verdict was satisfactory to the street-car company. The medical experts were paid for their services. Some of them were paid only for the consultation, and others were paid for the consultation and for testifying in court.

Does any one pretend to say that there was here any impropriety, any prostitution of medical knowledge for gain? I contend that it was legitimate for the medical experts to make use of their peculiar knowledge. I hold that the assistance they gave counsel in this case was of material benefit, and that such assistance could be obtained only from duly qualified medical men.

Of course it must be acknowledged that medical men may be dishonest. It does not follow that they become so simply because they give expert testimony or assist attorneys in the preparation and presentation of cases. I was recently asked to testify that no displacement of the uterus could occur by a fall. I was told that several eminent practitioners were prepared to swear to this effect. I at once replied that I could not testify as requested, and my services were not called for in that case.

As a matter of fact, there are disreputable men in every walk of life. It would be unfair to say that they do not exist in the medical profession. At the same time, there is a legitimate sphere of usefulness open to physicians in the field of expert testimony. It is as honorable a specialty as gynæcology or ophthalmology, and it is as unjust to claim that all medical experts are dishonest as it is to accuse all gynæcologists of being abortionists or to class all oculists with itinerants who sell "eye water" throughout the country districts.

It is admitted that the laborer is worthy of his hire. It must be acknowledged that the medical expert is entitled to adequate compensation for services which are often indispensable. The law ought not to prevent a man from collecting what is rightfully due him. The Dixon decision may be the law of the land. It is legal, but no power on earth can make it right. An enlightened public sentiment founded on principles of equity will in time assert itself. The medical expert will then be recognized as an important specialist in the practice of medicine, and his rights will be respected.

217 Fifty-Third Street.

Whooping-Cough.—Inhalation of ozone, for ten or fifteen minutes, twice daily, is recommended by Labbé and Oudin.—*Jour. de Méd. de Paris*, No. 4, 1897.

FIRST HOUR WITH THE MOTHER AND NEWBORN BABY.

By R. OSGOOD MASON, M.D.,

New York.

The instant of birth is certainly an epoch in the life of both mother and child—to one it is the beginning of a new mode of existence; to the other it is the ending of a period fraught with most profound interest and mystery, and culminating with pain and peril. It is an instant which the thoughtful physician, no matter how often he has borne his part in it, always contemplates with the deepest interest and sense of responsibility. If the labor has been speedy and normal, the feeling of responsibility may be measurably diminished; on the other hand, if it has been tedious, replete with uncertainties, and perhaps terminated by operation or instruments, that responsibility is greatly augmented. In either case there are duties of no ordinary importance to be performed, and while these duties have time and again been the subject of discourse by the teachers of obstetrics, aside from the ordinary technique there a few points which my own experience has impressed upon me as being important. They are all doubtless known and practised by some, but they may not all have received the attention which their importance deserves. They do not relate to safety—that, of course, has not been neglected—but to comfort and expediency.

First of all, when the baby is born and the sharp cry has gone forth making certain of life and respiration, let the physician allay the anxieties and fears of all present by his own calm and confident bearing, and also by the assurance that all is well and that there is no occasion for excitement or hurry; thus, if the mother be conscious, she is soothed and reassured. She, however, demands first attention. See to it that shock has not been too great, that pulse and breathing are at a safety point, and that the uterus is contracting: then give attention to the baby. First have the face cleansed with pure, warm sweet oil; then have ready a cup of warm water which has been sterilized or boiled, and thoroughly cleanse the eyes, allowing the water to run freely over and into them: also cleanse the mouth and tongue with pure water.

Then when all is ready deliberately attend to the cord: and here it seems to me the usual technique is faulty. By tying the cord at once while the circulation is still going on, a bulky mass, consisting of the gelatinous covering which surrounds the vessels and the contents of the vessels themselves, is confined and left to desiccate and partially decompose during the next five or six days, before it falls off. A more cleanly and desirable method is as follows: Take up a loop of the cord, six or eight inches from its attachment at the umbilicus, and hold it firmly between the thumb and index finger, compressing the circulation—if it is still going on—in both sides of the loop; then cut the cord in the loop, and the ends thus formed are still firmly held between the thumb and finger, and hemorrhage is perfectly controlled. If the placental end does not bleed, drop it; no hemorrhage of any account will occur; or it can be tied if thought necessary. I never have found it so. Then, loosening the hold upon the umbilical portion, allow the contained blood to escape, and generally all hemorrhage ceases; but, whether it does or not, with a dry towel grasp it firmly and squeeze it thoroughly—pressing out the blood and gelatinous matter, pinching and kneading it, but with care not to make traction upon it—until it is reduced to a mere shrivelled string. All oozing has by this time ceased, but for safety it should be tied an inch or two from the abdomen and the superfluous portion cut off. The child is then delivered to the nurse for cleansing and dressing.

Here, again, it has seemed to me that the usual technique might be improved upon. Instead of the usual scrubbing with soap and water, a cup of warm sweet oil and a piece of very soft muslin or cheesecloth are the only materials needed. With these the sebaceous material so often difficult to remove by washing is easily disposed of, and the cleansing process goes on with ease and comfort to both nurse and child; no water is needed; a yard of cheesecloth or a soft worn towel makes an efficient absorbent for the oil, and the child is ready for dressing. The usual custom of swaddling up the little stranger in flannel petticoats, dimity, lace, and furbelows is both uncomfortable, inconvenient, and absurd; true, the sense of feeling is not very acute, but to subject the tender skin of the newborn infant to all the friction and constrictions imposed by the usual dress is a barbarism to the infant and a trouble to the nurse, necessitating the inconvenient process of hunting up the baby amid its manifold coverings whenever a change of toilet or an inspection by the physician is necessary. Instead of this cumbersome dress, I have a simple wrapper of ample size made of cheesecloth, muslin, fine flannel, or silk, according to the fancy of the mother—either cheesecloth or China silk is suitable—and this well lined throughout with absorbent cotton, and lightly tufted to keep it in place, completes the garment. A pound package of the cotton is more than sufficient for the lining. Diaper and a light belly band are adjusted, then the baby is enveloped in this warm, soft garment, and over all the usual soft flannel blanket is wrapped, and the child is dressed. It reminds one of a young bird in its feather-lined nest, and I have called it the bird's-nest baby dress. Mothers often continue this dress for their infants several months. From two to half a dozen of these garments should form a part of the baby's outfit, and the cotton lining may be in part or wholly renewed as occasion may require.

While this process of dressing the baby goes on, the physician again gives attention to the mother. When the removal of the afterbirth has been accomplished, contraction of the uterus secured, and any necessary repair of the perineum made, the application to the vulva and perineum of towels wrung out in hot water is most grateful and helpful to the patient, and he who has heard the expressions of relief and thankfulness elicited by this simple procedure is not likely afterward to forget or neglect it.

The bandage, though discarded by some, seems to me perfectly physiological in its action as a temporary support to the relaxed and weakened abdominal muscles; and here also the comfort expressed by the patient adds weight in favor of its use.

One point more, though not a care of the first hour; it is a matter of so much importance and one not always given due consideration, that I will venture to allude to it. I refer to the care of the breasts.

There is no one thing in the medical practice of twenty or thirty years ago that I look back upon with such horror—unless it be the treatment of the eruptive diseases and diphtheria in children—as the treatment of the breasts of the lying-in woman. Rubbing, poulticing, a variety of hot applications, and the knife constituted the chief routine treatment, and the agony endured by the patient was horrible to contemplate. Even now, if one is so unfortunate as to meet with a specimen of the genuine old-time nurse, he may be obliged to resort to threats of immediate and ignominious expulsion before he can put a stop to similar work. Vigorous rubbing, hot oil, and an abundance of greasy flannel are the means employed, without a thought that any other course should be pursued. An immediate removal of the flannel or poultice, a gentle but thorough cleansing of the indurated and inflamed breast with tepid water and soap, and the application of a muslin bandage snugly but gently and smoothly from axilla to navel, sufficiently tight to give entire support and gentle pressure to the breasts, elicits such expressions of relief as are not soon forgotten. The milk soon makes its appearance, and a little slit or opening is made in the bandage to liberate the nipple. This procedure, and sometimes the judicious use of a well-covered ice bag, saves nine-tenths of cases which would otherwise result in abscess.

THE RODS AND EPITHELIAL PIGMENT LAYER OF THE HUMAN RETINA CONSIDERED AS A PHOTOCHEMICAL OR SENSITIVE PLATE.

By FRANK P. PRATT, M.D.,

JOLIET, ILL.

In a paper published in the Medical Record, August 28, 1897,[1] the writer endeavored to show that the histological arrangement of the various retinal layers, together with the behavior of light rays under the influence of the ocular refracting media, points to the tenth or pigment epithelial layer as being the sensitive plate upon which images of external objects are reproduced in all their colors, and from which the cones alone receive light stimulus. The rods were there assumed to be essentially a part of the tenth layer, and not terminal percipient cells of the optic nerve; their main purpose being to support and maintain the cones in their normal position at right angles to the external limiting membrane and the pigment epithelial layer, where, in the extrafoveal regions, they are no longer able to support each other. It is now my purpose to offer additional evidence which apparently corroborates this hypothesis. It will be recalled that the first retinal layer lies in apposition to the vitreous body, and the tenth approximates the choroid coat; that the ninth is the layer of rods and cones, which have their summits pointing not toward the source of light, but backward toward the epithelial layer; that the rods are immovably fixed, their "gnawed-off" ends forming a close union with the base of the cylindrical cul-de-sac of the epithelial cell in which they are invaginated; that the cone end is free and moves backward or forward under the absence or presence of its normal stimulus.

That there is a decomposable photochemical visual substance in the retina, as represented by the visual purple or rhodopsin of Ball, will not be denied. Solutions of this complex substance have been prepared under the light of a sodium flame; it is a beautiful clear purple solution, very subtle, quickly decomposed by daylight, passing through the various spectral shades until it becomes colorless. Experiments have shown that rhodopsin is normally secreted by the pigment epithelial cell. To say that this photochemical substance is found exclusively in the rods is true only when speaking of the layer of rods and cones; it is present also in the tenth layer. That the rod ends become, physiologically, a part of the pigment epithelial layer, can be possible only through the presence in both of the same photochemical sensitive rhodopsin, or some modification of it. This becomes evident through the experiments of Kuehne and others, which prove that images thrown upon the fundus oculi, when well defined, leave photographs or optograms upon the layer of rods, through the photochemical action of rhodopsin, and this is accomplished only when extreme care is used in shutting out daylight, to prevent bleaching. It appears, then, that without visual purple or some modification of it in the rod ends no optograms can be made. Mays says: "Any matter to

[1] "What are the Functions of the Rods and Cones and the Pigment Epithelial Layer of the Human Retina?"

be rightly called visual matter must lie in a situation where there is reason to place the excitation by light, *i.e.*, in the visual cells. It must also be proven that this matter can be altered by light during life, and that a slight transformation may be of great significance."

In the light of the present theory, Mays' statement must be modified, in that the visual substance (rhodopsin) should not be located in the visual cell, but in the sensitive plate, *i.e.*, the rods and epithelial cells, where, by decomposition, light vibrations are changed into visual stimuli. In speaking of the tenth retinal layer, it must not be supposed that the line of demarcation between it and the ninth layer is sharply defined; indeed, the inner zone of the epithelial cell sends out "indefinite protoplasmic processes," which extend between the rod and cone elements nearly or quite to the external limiting membrane; when light is excluded from the retina these processes are free from pigment, except near their base; when stimulated by light, the fuscin passes along the processes between the rods and cones until the outer segments of the rods are buried in pigment.

It is not unreasonable to conclude, in the light of the above facts, that the sensitive plate of the retina, when excluded from the decomposing influence of light, soon reaches a state of saturation, after which the cell activity becomes latent and the pigment recedes toward its base. In other words, the cell is at rest. Under the influence of light, this photochemical substance or visual purple is being continually decomposed, and, were it not at the same time being actively regenerated, would soon become completely bleached and the retina rendered non-sensitive. The metabolic force in the epithelial cells, therefore, is increased. The fuscin advances along the processes, rhodopsin is secreted, the cell is active. No doubt Dr. Noyes expresses the consensus of opinion in the following sentence: "It is natural to imagine that this remarkable substance [visual purple] has an important relation to sight, but we cannot define its functions, because it is wanting in the cones, which give the best vision." This is a legitimate and it might be said the only conclusion to be drawn from a belief that the rods are, in common with the cones, the terminal visual cells of the optic nerve. Yet if one accepts the hypothesis that the rods are not visual cells, but are primarily supporting-tissue to the cones, and secondarily are physiologically identical with the inner zone of the epithelial cells, and form with the latter the sensitive plate—this obstacle to the definition of the function of rhodopsin is no longer valid. While there are no rods in the region of the fovea, it does not follow that there is no rhodopsin. The physiological function of the hexagonal epithelial cell is as active here as elsewhere, and the visual purple will be found saturating the inner zone of the secreting cell exclusively over this region.

Kuehne's experiments, which prove that animals whose retinæ have been bleached not only can see, but can distinguish colors, do not weaken this argument, because he does not destroy the function of the epithelial cell. Bleaching of the rods alone will not destroy vision for white light or colors, because the rods form a part only of the sensitive plate, each part of which contains the same photochemical substance and upon which, separately or together, colored images will appear. That visual purple is not found in the cone cell is the strongest proof that the function of this cell is not to convert vibrations of luminous ether into nerve stimuli. This function belongs exclusively to the sensitive plate. The cone is sensitive to the converted nerve stimuli only, and conducts them through the medium of the nerve fibre to the cerebral visual centres. It will not be denied that rhodopsin is sensitive to all forms of light, white and colored. The persistence of the positive after-image for a short time after light is excluded from the eye, followed by the negative image in complementary colors, points to photochemical action; the positive image showing a momentary continuation of photochemical decomposition, the negative image showing a reproduction of certain chemical elements which were decomposed by the action of light rays. As soon as the plate reaches its normal degree of saturation, its chemical equilibrium, the after-images disappear. It would seem, therefore, that both chemical decomposition or bleaching of rhodopsin and the regeneration of the decomposed elements produce that subtle stimulus which alone is capable of exciting the terminal cell of the optic nerve.

It has been claimed that Purkinje's phenomenon, in which the shadows of retinal vessels and capillaries can be seen entoptically, proves that the rods and cones are the percipient light structures. In a paper published in 1897[1] the writer has presented conclusions drawn from a long and careful study of entoptical shadows. Attention was called to the appearance of the macula and foveal region, the surface of which is covered with exceedingly fine lines, closely resembling the delicate tracings on a diatom. This tessellated arrangement presents the same appearance as that shown by a surface view of the cones of this region. In view of these peculiarities, and having in mind also the modified histological arrangement of the retinal layers over this region, it was assumed that these tracings represent the shadows of the cones cast upon the sensitive plate beyond. If this is true, it of course adds great weight to the arguments advanced in this paper, and disproves the conclusions drawn by Purkinje.

It will also be recalled by those who have studied the phenomena of after-images that one looks upon them as something apart from himself, as he would look upon a landscape or a picture, and that often some detail will clearly appear in the negative which had entirely escaped the notice before. This fact emphasizes the deduction that not only has photochemical action taken place in the sensitive plate, but that the sensorium takes note of the stimulus as originating, not in its own termini, but in something outside of itself. In view of the above facts, it becomes evident that if the rods and epithelial cells are to act in common as a sensitive plate, the cells must secrete a photochemical substance which they impart to the rods, where they exist, and to the inner zones in those parts where, as in the fovea, the rods are absent. It also becomes equally clear why the cones, whose sole function is to take up nerve stimuli, are not supplied with visual purple.

In addition to the facts already adduced in a previous paper in support of the proposition that the main function of the rods is to sustain the cones in their normal position, the following fact has peculiar significance. Cajal has shown that the Müllerian fibres which constitute the sustentacular tissue of the retina do not extend through the entire thickness of the retina, as claimed by Piersol, but terminate externally in delicate cylindrical cul-de-sacs, into which the bases of the rods and cones pass. These delicate septa extend an exceedingly short distance into the ninth layer; beyond this point the fibres of Müller are not found. Why not? Because here the terminal nerve cell is so surrounded by the protoplasmic processes from the epithelial cells and so sustained by the rods that the latter serve not only as modified sustentacular tissue, but as a sensitive plate as well. But it will be claimed that the rod has been demonstrated to be a terminal nerve cell; if not by continuity, by contiguity.

[1] "What are the Muscæ Volitantes? An Entoptical Study."

Be that as it may, it is claimed here that there is no evidence which proves the rod to be a terminal visual cell. Whatever other connection it may have with the central nervous system is not under discussion in this paper.

A MODIFIED HUTTON'S APPARATUS FOR VALVULAR DRAINAGE OF PLEURAL EMPYEMA.

By R. VAN SANTVOORD, M.D.,
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A GLASS tube, three-eighths of an inch in diameter, is bent at a right angle. One arm, which is just long enough to reach into the pleural cavity, is thrust through a small hole in the middle of a piece of rather thick rubber tissue, four inches square, which is securely fastened to the tube by winding a few turns of strong linen thread over the projecting lip of the rubber where perforated. The other arm, which may conveniently be about one inch in length, terminates in a valve, which may be extemporized as follows: A piece of rubber tissue, two inches long, is folded around a strip of cardboard, three-eighths of an inch wide, snugly at one end but flaring out at the other. The overlapping surfaces and the three triangular areas on either side of the strip are then stuck together with rubber cement. Over this valve when in use is fastened a loop of sheet zinc to protect it from pressure. A more elegant but not more effective valve can be constructed by any instrument maker. When the tube is in use, a sheet of gutta-percha tissue is inserted between the rubber flange and the chest wall. Gutta-percha tissue, when soaked in a disinfecting solution to render it aseptic, is sticky and unmanageable. If pieces cut to the size required for use are inclosed in a fold of gauze while soaking, and are then placed on a layer of gauze while they are being adjusted to the tube, they may be handled with little difficulty. The rubber is covered over with several layers of gauze, and the whole kept in position by a piece of thin rubber sheeting, through the middle of which the drainage tube passes and which is edged with rubber adhesive plaster. To this plaster are pinned three strips of bandage, which pass around the chest and are drawn tight enough to cause a moderate amount of elastic compression. Absorbent material is wrapped around the valve and its shield, to catch the discharge as it comes out. This apparatus allows the free exit of pus and air, but prevents the ingress of air, as the surfaces of the valve come in contact on inspiration. The result of this is that the patient evacuates the air from the pleural cavity while coughing and the lung expands.

The original apparatus, described by Dr. W. M. Hutton in *The Lancet*, i., 1897, p. 375, differs from the above only in that the glass tube is fitted into a piece of rubber drainage tubing at the end which perforates the chest, and the rubber flange, of rubber sheeting one-sixteenth inch thick, is cemented to this rubber tube. A piece of drainage tubing about six inches long is interposed between the glass tube and the valve. I consider the naked glass tube better than Hutton's arrangement, because it cannot be compressed by granulations, and therefore keeps the drainage opening adequate. Its introduction during the later stages of the case, when the opening tends to close, is therefore much less distressing to the patient than is the rubber; in fact, is absolutely painless. Hutton found that the apparatus was efficiently retained in place by domett bandages and cotton pads. The elastic bandage added by me seems to make it more secure, though it may not be necessary. I dispensed with the rubber tube between the glass and the valve, because it was easily dragged on and was a source of discomfort to the patient.

I have had experience with this apparatus in one or other of its forms in three cases. In the first the apparatus, constructed exactly as described by Hutton, was tried rather late in a case operated on by a colleague at the Harlem Hospital. Its efficiency was demonstrated, but for various reasons its practical value could not be estimated. A second case was admitted to my service at the Harlem Hospital in a moribund condition. Aspiration for immediate relief was performed, followed by exsection of a portion of the middle of the sixth rib and the making of a free opening. An extemporized apparatus practically identical with Hutton's, with the addition of the above-described elastic band, was used, and worked perfectly. Large amounts of pus were discharged into the bottle in which the valved tube entered, and the lung expanded rapidly. The apparatus, however, seemed to distress the patient, possibly owing to the occasional dragging of the bottle, which it was difficult to keep fastened to his body, or to the interference with respiration in consequence of the elastic compression of the chest. As the man was an Italian, speaking no English, it was not possible to find out just what troubled him. After improving for twenty-four hours, his temperature again shot up; he sank rapidly, and died forty-eight hours after the operation, apparently from sepsis. No autopsy could be obtained. It seems possible that in this case the expansion of the lung may have been too rapid, interfering with drainage. It would probably have been better to leave the opening absolutely free until the pleura was in a more healthy condition, though death in parallel cases is not uncommon with free drainage.

My third case, that of a boy of seven, came into my hands two months after the beginning of his illness, said to have been a pleurisy. The effusion extended up to the third rib in front. About one and one-fourth inches of the middle portion of the sixth rib was excised under chloroform and the thorax freely opened. About a pint of pus mixed with large fibrinous coagula was evacuated. The cavity was irrigated, at the time of operation only, with boiled water. The lung was adherent behind. The cavity was felt to be coated with fibrin. In view of the previous case, it was considered advisable to employ open drainage until the fibrinous coating of the pleura had loosened or melted away, and the lung might be forced to expand without fear of forming pockets of retained pus. The temperature became normal at once, and the boy's appetite became ravenous. Hutton's apparatus, with the addition of the elastic bandage, was used at the end of a week for two days, but was then discontinued, as it became obstructed by coagulum. The long tube coming around in front of the abdomen, with its wad of dressing, was a source of discomfort to the patient, and the compression of the thorax by the elastic band caused some dyspnœa. Thirteen days after the operation the apparatus as described at the beginning of the paper was applied, and proved to be perfectly comfortable after the boy became used in the course of a day or two to the elastic band. A thick wad of cotton was bandaged to the chest wall behind the tube, to prevent pressure upon it. He would run about, use his arms, or roll over in bed in any position with absolute freedom from any discomfort. In sixteen days the lung was fully expanded, though a small amount of watery pus was still discharged. The tube was finally removed on twenty-sixth day after operation, the sinus apparently being absolutely closed the next day, though a few drops of pus appeared on the dressings for a week later. It could probably have been safely left out some days earlier.

This was a case that would probably have done

well under open drainage ultimately, but it demonstrated to my mind the efficiency of the apparatus, and in my opinion by its use the cure was materially hastened.

Hutton reports one case in which the discharge ceased and the lung was fully expanded four days after operation.

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Progress of Medical Science.

Suprarenal Extract in Addison's Disease.—At the meeting of the Hospitals Medical Society held in Paris on February 25th, M. Becliere showed a young man suffering from tuberculosis, but without any marked pulmonary lesions. In addition he had at one time the symptoms of Addison's disease, but he had lost all these in a short time and had remained free for three years. The chief point of interest in this case was that the patient had been treated with suprarenal extract administered in various ways, given both internally in capsules and in the form of a watery glycerin extract which was injected under the skin. The suprarenals used were those of the calf. Nothing of note happened during the treatment, and it was reasonable to suppose that the giving of the suprarenal extract had contributed very largely to the cure of the patient. M. Becliere compared the treatment of patients suffering from Addison's disease by suprarenal extract with that of patients suffering from myxœdema by thyroid extract, and came to the following conclusions: In myxœdema the beneficial action of the thyroid extract is obvious after only a few days' treatment; in Addison's disease, on the other hand, at least two months elapse between the commencement of treatment and the appearance of beneficial results. In myxœdema the benefits are only temporary, *i.e.*, the patient must continue the treatment throughout the remainder of his life. In Addison's disease the benefits of the treatment last for some five months after the administration of the extract has been left off, and in the case cited the improvement must not only have continued but must have really increased, for the patient had remained well for three years. The fundamental differences between the mode of action of suprarenal extract and the thyroid extract were as follows: Thyroid treatment acted by supplying the organism with substances which the myxœdematous person could not manufacture for himself, while in the case of suprarenal extract the most reasonable hypothesis seemed to be that it brought about a compensatory hypertrophy of those portions of the suprarenal capsules which remained healthy, and this hypothesis agreed with the results obtained by hypodermic injections of suprarenal extract in animals. M. Gaillard said that he had tried this treatment in an analogous case and had obtained no result whatever. M. Widal had tried it in a patient who presented a typical case of Addison's disease, and who had a tuberculous family history. He could tolerate from ten to twelve grams daily of suprarenal capsules of the sheep. No alteration occurred in the amount of pigmentation. The patient left off treatment highly delighted with the increase in his strength, but returned at the end of some weeks just as weak as before, and with gastro-intestinal troubles in addition. He died shortly afterward. M. Widal, however, believed that the treatment was worth trying, provided that it was quite early in the disease. M. Hayem had treated a patient in 1894 with doses of from ten to fifteen grams of calf's suprarenal capsules *per diem*. As in M. Widal's case, the weakness was much relieved after two or three months' treatment, but no difference was noted in the pigmentation. The improvement lasted for ten months, but finally gave way and the patient died in 1896.—*The Lancet.*

The Accidental Ingestion of the Eggs of the Common House Fly.—The ingestion of the eggs of the house fly, deposited in the hot summer weather on meat, cheese, and other articles of food, occurs no doubt more often than we suspect or are willing to believe. If the alimentary canal is in its normal state, no harm comes from such an accident; but if, on the other hand, there is some disturbance of digestion, it is quite possible that these eggs may pass through the intestinal tract uninjured by the gastro-intestinal secretion, or may develop into larvæ within the human body. In the *Deutsche medicinische Wochenschrift* (No. 8, 1898) two such instances are reported. Dr. Michael Cohn, of Berlin, describes the case of a five-months-old child, bottle fed, suffering from dyspepsia, in the vomited matter and in the stools of which large numbers of eggs were found. These soon developed into larvæ in the stools and in the soiled clothing. An examination by the Berlin Zoological Institute demonstrated that the eggs were those of the common house fly, the Musca domestica. The other case is reported by Dr. Bachmann, of Hanover. A gendarme, affected for several years with stomach trouble, and of late in the habit of eating large amounts of chopped meat, both fried and raw, complained that after a preceding period of nausea and cramp-like pain in the pit of the stomach, he frequently vomited large numbers of worms, always more than a hundred. He also observed a number of times "worms" in the stools. An examination of the specimen brought by the patient showed that the "worms" were really the larvæ of flies.

New Joints.—At the meeting of the French Academy of Sciences, held in Paris on May 31st, M. Ollier presented a report on the formation of articulations between bones which are in the normal condition independent of each other, the necessity for so doing having arisen from the natural articulations of such bones having been irretrievably destroyed. M. Ollier has succeeded in making joints possessing both strength and freedom of motion between bones which are not under ordinary conditions connected with one another. In thus reuniting the bones it is possible to preserve not only the tissues which form the junction, but also all that remains of the muscles which moved the original joint, and, in fact, to form a new joint (nearthrosis) surrounded by muscles sufficiently powerful for active exertion. M. Ollier reported the case of a man who was in his forty-eighth year in 1893, and who had received a gunshot wound in 1870. The wound healed after seven months, but opened again in 1883. Successive resections were made for the purpose of checking the suppuration, the head of the humerus being removed in 1884, a portion of the scapula in 1885, and the remainder of the bone in 1890. The suppuration stopped, but the arm was powerless and tended to fall lower and lower from the clavicle, to which it was attached (and that only in front) by some muscular bundles which were not strong enough to raise it. In 1893 M. Ollier fixed the humerus to the clavicle and surrounded the approximated ends of the two bones with what remained of the scapular muscles, which eventually, the deltoid especially, acted powerfully on the new joint. After the operation the patient had no need of artificial supports and used his arm for every purpose required. For instance, he could put it on the top of his head, on his right shoulder, behind him, on the back of his right thigh, and could also fold his arms—movements which were impossible to him before the operation.

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WOUNDS OF THE THORACIC DUCT.

IN the *Annals of Surgery* for June of this year, there is a paper by Cushing, of Johns Hopkins Hospital, upon wounds of the thoracic duct occurring during the course of surgical operations. A number of cases are quoted, and one which the author treated is commented upon at length. The treatment was by suture and resulted in cure.

The importance of the subject is considerable and is becoming more so, as our operative fields are becoming more and more extensive, especially in malignant disease of the neck or in cases of secondary growths after removal of the breast, since anatomical appearances are apt to be altered under such circumstances. Furthermore, as in Cushing's case, an abnormally high position of the duct is not uncommon, and it is then much more exposed to injury during operation. In all cases in which the duct has been wounded and not repaired, the observer has seen extremely rapid loss of weight with accompanying emaciation and almost always early death, so that prompt treatment becomes of very great importance.

Some operators have been successful in stopping leaks in the duct by using packing in the wound and treating it by the open method. In such cases the wound must have been comparatively small, and the healing process one of adhesion between the lips of the cut in much the same way that peritoneal surfaces adhere. In some cases the possibility of a favorable result may have been made greater by the presence of more than one lymph vessel entering the veins or even a delta-like arrangement. When the latter condition exists and can be made out, there would of course be no objection to a simple ligature of the two ends of the wounded trunk. If the wound in the duct is a longitudinal slit, closure by suture would undoubtedly be the choice of many, for the same reasons that many surgeons prefer to suture a wound in a vein if possible, rather than use some other method.

In the *Deutsche Zeitschift für Chirurgie*, No. 33, 1892, Niebergall discussed very thoroughly the subject of the treatment of wounds of the large veins, and came to the conclusion that the use of suitable clamps applied so as to hold together the edges of the wound in the vessel wall, and left in place for from twelve to forty-eight hours, constitutes a very safe and simple method of handling such cases.

Wounds of the thoracic duct are very perfect analogues of wounds of the large veins, and methods of treatment suitable for one would be suitable also for the other. The thoracic duct is, of course, of very much more importance than a vein of the same size, and when the vessel is wounded or divided that method of treatment ought to be adopted which is the safest, even if it is temporarily inconvenient. Most wounds in the neck in which the duct has been injured will have to be treated to some extent as open wounds, and if we can hold the edges of the slit in the vessel in contact by means of one or more suitable artery clamps, and allow them to remain in place for twenty-four or forty-eight hours, we have a very convenient and rapid method of closure. The introduction of sutures would be very difficult in many of these cases, owing to the small size of the vessel, and would also be uncertain in its results. Furthermore, the application of clamps would reduce the calibre of a vessel and distort it much less than the employment of sutures.

A complete division of the duct in subjects with only one main trunk is a very serious condition, and any treatment is apt to be exceedingly difficult and unsatisfactory. If the end of the duct could be properly isolated, it might be feasible to introduce it into the side of a vein, but this would be a matter of some difficulty and danger, and the absence of valves at the mouth of the duct would be a disadvantage. The control of hemorrhage during such an attempt ought not to be a matter of much difficulty, and it ought also to be possible to keep air out of the veins, though the vein would necessarily be the jugular near its junction. However, any reasonable prospect of success ought to encourage us in a condition clearly so grave. We cannot simply tie the wounded vessel and trust to the right duct to do the work, even when this exists, for it cannot suddenly accommodate itself to such an increased demand, and the danger of rupturing the receptaculum would be great.

MEDICINE IN RELATION TO LIFE INSURANCE.

AN address on the above subject was given by Dr. Muirhead at the meeting of the British Medical Association, recently held in Edinburgh. After referring to the enormous advances the business of life insurance has made in late years—the liabilities of life companies in the United Kingdom amounting at the present time to $1,319,148,125—the speaker proceeded to define briefly the position of the medical profession with regard to the examination of candidates for life insurance. It seems that in Great Britain, up to the year 1830, the societies were content with the perfunctory reports, supplied by any medical man, as to the health of applicants, but that in that year it was deemed prudent to retain the services of a physician to aid in the sifting of cases. In 1835 the companies went a stage farther, and required appli-

cants to appear before one of their own medical advisers, as well as to produce answers to a more elaborate set of questions in respect of health and family history addressed to the private medical attendant. The process of selection of healthy lives has now reached to such a degree of severity that it is almost impossible for a person who is in any way unsound to hope to be admitted to the benefits of life insurance in one of the large companies.

The belief, however, is widely prevalent that all this care is of little avail, and that after five or six years the benefits of selection are entirely lost. The fallacy of this reasoning has, as Dr. Muirhead shows, repeatedly and effectively been exposed. It has been pointed out, however, that, after elimination of the voluntary withdrawals, the advantages of selection diminish at all ages with duration of the policies, rapidly in early life and slowly at middle life; but even in those of advanced years they probably never entirely disappear.

There is another problem in connection with life insurance which is constantly brought to the notice of medical men, and which is far more difficult of solution than that of selection; namely, how to assess equitably the value of under-average lives. In reference to this, Dr. Muirhead says that "here we have no fixed and mathematically correct data by which to guide our decisions. We have no aggregated groups of persons suffering from the same disorder, though perhaps differing greatly in form, which might supply a basis by which to adjudicate upon the special case before us. And if the extra rate recommended by medical officers has in the past saved the office from loss, I am bound to admit that this happy result has been arrived at without the aid of any scientific formula and by merely empirical methods."

The remedy suggested for this state of things is to gather data sufficient to guide physicians in their estimate of extra risks, and to place them in a position to supply the actuaries with statistics upon which to calculate by how much the expectation of life of unhealthy men is diminished in special groups of disease. If this suggestion were successfully carried into effect, it is argued that the task of medical examiners would be greatly simplified. Many applicants are now refused by most companies who will in all probability live longer than many who are passed by the medical examiners. This is especially true in cases of heart affections. A man whose heart or pulse deviates in any degree from the normal, and who has a pulse rate persistently above 90 or below 60, or has habitual arrhythmia, is now rigorously excluded; but it is perhaps unwise to shut this class out altogether, and the fairer course would be for all companies to establish under-average ratings. Tachycardia of 90 or 100 is often due to the excitement of the examination, to tea, coffee, or tobacco; or it may be natural to some persons, and certainly in a considerable number of cases it is not owing to organic trouble. Again, a cardiac murmur is a symptom to which too great importance is often attached; its intensity also is no sure criterion of its gravity. Men are frequently accepted who are to all appearances pictures of health, who yet die suddenly of heart failure, and who are found to have been suffering for years from organic disease. There is certainly room for a revision of the regulations now existing in the conduct of medical life-insurance examinations.

WILL THE SURGEON-GENERAL SUCCEED IN OBTAINING A COURT OF INQUIRY?

We are happy to learn that Surgeon-General Sternberg has demanded from the secretary of war an investigation of the numerous charges of neglect of the sick and wounded during the late campaign, with the view of fixing the responsibility of wrong-doing upon the actually guilty parties. This is the course the Medical Record has urged from the first, as the only means of vindicating the medical department of the army. No explanations yet made have covered the essential points in the scandal. The only way to settle the questions at issue is by a thoroughly impartial court of inquiry and the wide publication of its verdict. Such an inquiry should cover not only the cases of neglect on the battlefield, but also those in our various home camps. It is too late to stave off further discussion by dodging facts, by impugning motives of criticism, and by accepting testimony from interested and necessarily biassed witnesses. Either the facts must be brought out in a perfectly straightforward and legitimate way by a properly empowered tribunal, or, failing this, the public and the profession must be left in grave doubt. But for the good name of the surgeon-general, for the credit of his corps, and for the honor of the profession, we cannot afford to have any doubts in the matter. We have every hope that General Sternberg will be able to defend his course on all the points in the public indictment, and will have the opportunity of proving to the satisfaction of all that he did the best that could have been done under the circumstances. Even if the worst case is proven, we can at least have a grim satisfaction of benefiting in future campaigns by the failures of the past one. We trust the report that the inquiry is to be held is based on something more than a newspaper statement.

THE LIMITS OF HYPNOTIC INFLUENCE.

A case of an interesting nature to the medical profession, and particularly to those members of it who concern themselves with hypnotism, has recently occurred in England. An old lady of the name of Howard died in December last, bequeathing by will to her physician, Dr. Kingsbury, the substantial sum of $150,000. This will the son of the dead woman has been trying to have set aside, on the grounds that she made it under the influence of hypnotic suggestion. It seems that Dr. Kingsbury is a well-known hypnotist and an authority on the subject—so much so, indeed, that he has written a widely read work on hypnotism. The trial, which was remarkable for the number of distinguished British medical men called as witnesses on either side, ended in a verdict upholding the will, the jury finding that it is not within the power of a hypnotist to in-

duce a person in a hypnotic state to perform an action to which he is averse in a normal condition. Unfortunately the evidence of the experts threw but little light on the question of how long the influence of hypnotic suggestion lasts after the hypnotic trance is over. However, whether the verdict arrived at by the jury in the case just decided in England will meet with the concurrence of those versed in the science of hypnotism or not, is doubtful; but, taking into consideration the facts of the case, we imagine that most persons endowed with common sense will be of the opinion that Dr. Kingsbury has been fortunate to be allowed to retain the money left to him. Mrs. Howard was an old lady, seventy-four years of age, who had been in failing health for some years, and therefore was apt to be easily influenced by her medical attendant. The French law dealing with such cases, and which forbids the doctor who attends a deceased person during a last illness from benefiting except to a small extent in any property left, is a wise one. After all, a medical man is fallible, like other mortals, and it is best that temptation should not be thrown in his path.

News of the Week.

The British Vaccination Bill.—A bill was introduced some time ago into the British Parliament, the design of which was to render the vaccination law more stringent in some of its provisions and to introduce some improvements in the methods of public vaccination. Unfortunately a rider in the shape of a "conscience clause" was attached to the bill, and the result is that now vaccination is no longer compulsory. The following is the clause: "No parent or other person shall be liable to any penalty under section 29 or section 31 of the vaccination act of 1867 if within four months from the birth of the child he satisfies two justices in petty sessions that he conscientiously believes that vaccination would be prejudicial to the health of the child, and within seven days thereafter delivers to the vaccination officer for the district a certificate by such justices of such conscientious objection." If false beliefs conscientiously held are to be allowed to stand in the way of the safety of the community, then there is an end of all sanitary legislation. A person who is allowed to refuse vaccination on conscientious grounds may refuse to isolate a patient with small-pox, and the State cannot consistently force him to do so. And this in the country of Jenner!

The Plague in an English Port.—Some consternation was felt by timid folk in London recently upon the announcement that steamer with a case of plague aboard had arrived in that port from Bombay. According to the *British Medical Journal*, this vessel left Bombay on July 2d, taking on board a native crew. As is the practice, this crew was inspected by the port sanitary authority at the time of signing on, and no trace of illness was found. On July 6th a Lascar fireman complained of pain and swelling in the right groin, and stated that his indisposition dated from the second of the month, the day of sailing. On examination the right femoral glands were found swollen, and on the following day the glands in the left femoral region and in both axillæ became enlarged. This case was at once diagnosed by the ship's surgeon, and the patient was placed in one of the ship's boats furnished with an awning and swung out over the lee quarter. Two natives were set apart as attendants. On arrival at Aden a steam disinfector was obtained, all the crew's effects were disinfected, and the patient was landed on an island reserved for infectious cases. The boat was cleaned out, disinfected with 1 in 20 carbolic acid, and repainted. On July 14th another fireman was taken ill with exactly similar symptoms. He was isolated in the same manner, and the crew's effects were again treated in the disinfector. On arrival at Gravesend the ship was boarded by the assistant port medical officer, who ordered the removal of the patient and his attendants to the port hospital at Denton. Although no signs of disease among the ship's rats, of which there is a goodly number, were to be discovered, the company's rat catcher was ordered to cremate in the ship's furnaces the bodies of all the vermin he could catch.

Another Non-Combatant.—During the recent campaign on the Indian frontier, one of the line officers, Lieutenant Ford, was dangerously wounded in the shoulder and was bleeding to death from the bullet having cut the main artery, when Surgeon-Lieutenant Hugo came to his aid. The fire was too hot to permit lights to be used to examine the wound, and there was no cover; nevertheless, the surgeon struck a match and examined the wound. The match went out amid a splutter of bullets, which kicked up the dust all round, but by its uncertain light he saw the nature of the injury, and seized the bleeding artery, and, as no ligature was available, he remained for three hours under fire holding the vessel between his finger and thumb. When at length it seemed that the enemy had broken into camp, he picked up the officer, who was unconscious from loss of blood, and bore him into a place of safety without relaxing his hold of the artery. For this magnificent act of heroism the surgeon received the decoration of the Distinguished Service Order, which the *British Medical Journal* says "in these days is showered about after a campaign almost as liberally as a mention in dispatches." After reciting the story, our contemporary is moved to add: "Now, we say it with all deliberation, none of the many deeds of valor done by our soldiers in the Indian campaign equals that of this young medical officer, either in courage or in devotion to duty. Fighting men have the fierce joy of combat, and the excitement engendered by 'the pride, pomp, and circumstance of glorious war,' to stimulate and support them. Non-combatants have none of these adventitious aids to heroism. They must be obscurely brave without the cheers of comrades, and they must be content to fall without glory. Theirs is the very highest and truest courage, and it is deplorable that military etiquette or official pedantry should be allowed to stand in the way of its being properly rewarded. If ever any one deserved the Victoria Cross it is the man who did the splendid deed above recorded."

Obituary Notes.—Dr. William Carter Otterson, of Brooklyn, died of heart disease at Long Branch on August 17th, after an illness dating back to last summer. He was born in this city in 1829, and was graduated from the College of Physicians and Surgeons in 1853. In 1861 he was appointed brigade surgeon of volunteers, and he was assigned to the army of the Southwest as medical director. In the same capacity he was with the ninth corps at Vicksburg and with the twentieth corps on the march to the sea. Later in the civil war he had charge of a military hospital at Nashville, Tenn. He embodied his experiences of this time in a book entitled "Notes on Military Surgery during the Civil War." At the close of the civil war he resumed practice in Brooklyn. He was for two years sanitary inspector of the Brooklyn board of health, and at the same time chairman of the Brooklyn ambulance service, which was then in its first year. Later he was appointed deputy commissioner of the Brooklyn board of health. He was a member of a number of medical and social organizations. Because of failing health he had done but little practice during the past four or five years. He was a widower and three children survive him.—Dr. John Frederick Morse, of San Francisco, died at his home in that city on August 22d. Apoplexy was the cause of death. He was a graduate of the Medical College of the Pacific in 1878, and of the University of Berlin in 1881. He was a member of the California State board of health and of the San Francisco board of health, and enjoyed a wide reputation as a skilful surgeon.—Dr. Gardner Q. Colton died recently in Rotterdam. He was born in Vermont in 1814, and studied medicine at the College of Physicians and Surgeons in this city. He went to California in 1849 and worked in the gold fields, at the same time practising medicine among the miners. After leaving California he travelled through the United States, lecturing on nitrous-oxide gas, which he called "laughing-gas." In 1863 he established the Colton Dental Association in New York, using nitrous-oxide gas as an anæsthetic, following a suggestion which he said was made to him by Dr. Horace Wells in Hartford in 1844.

The Education of Deaf-Mutes in India.—There exist in the Indian empire, according to the most recent census, some one hundred and fifty thousand deaf-mutes. No provision has hitherto been made for the special education of the class, with the exception of a school in Bombay, containing about thirty pupils, and some private efforts of a limited description. The *British Medical Journal* states that a petition has recently been submitted to the secretary of state for India by some educated deaf-mutes of Bombay, pointing out the absence of organized and adequate arrangements such as exist in all civilized countries for the purpose of enabling persons afflicted with the loss of the sense of hearing and speech to overcome, in so far as that is possible, the serious disability thereby entailed, so as to fit them to participate in the enjoyment and utilization of life. The petition has been referred for the consideration of the government of India, and it is certain that the charitable impulses of Indian administrations which have inspired such magnificent undertakings for the relief and restoration of those disabled by sickness will result in the establishment of schools in all the principal centres of population for the special education of the deaf-mute.

The Use of Preservatives in Milk.—The chemists of the New Jersey State dairy commission have been making extensive analyses of milk and have found that a large number of samples contained boric acid or salicylic acid added as a preservative. The addition of these substances is a technical violation of the law against the adulteration of food. The matter has been brought to the attention of the State board of health, and it is thought that the board will make a ruling declaring the addition of these preservatives to be an adulteration, such as is forbidden by law. A ruling will also be asked for with reference to the putting of salicylic acid in catsup and other condiments. In a recent case of this sort the dairy commissioner prosecuted for food adulteration, but the jury acquitted the accused on the strength of expert testimony that the preservative used was not injurious to health.

The Investigations into the Causes of Camp Typhoid.—The board of medical officers, consisting of Surgeon-Majors Read, Vaughan, and Shakespeare, appointed to investigate the typhoid fever in the army camps, began its labors at Camp Alger on Saturday last. After concluding the investigation there, the board will proceed to the other points which have been designated in the official instructions. These are Camp Alger, Virginia; Camp Thomas, at Chickamauga; Camp Meade, at Middletown, Pa.; Camp Wikoff, at Montauk Point, N. Y.; and the camps at Huntsville, Ala.; Jacksonville, Fla.; and Fernandina, Fla.

The German Association of Naturalists and Physicians will meet this year at Düsseldorf from September 19th to 24th. The following addresses will be delivered in the general sessions: "A Century of Surgery," by Professor Tillmann, of Leipzig; "Causes and Beginnings of Disease," by Professor Martin, of Rostock; "The Importance of Nursing for Scientific Treatment," by Dr. Martin Mendelsohn, of Berlin. It is hoped that Professor Virchow will also deliver an address.

The Medical and Surgical Reports of the War.—The army surgeons in the field and camps are sending in complete reports of the cases which have come under their care, both medical and surgical. Although the war was brief, the number of sick and wounded soldiers thus far has been over forty-five thousand. The hospital records of this war will, it is claimed, be most complete, and will be eminently satisfactory from the statistician's point of view.

The American Association for the Advancement of Science was in session this week in Boston. The attendance was greater than had been anticipated, and many interesting papers on a great variety of subjects were read and discussed.

An Outrageous Assault on a Physician's Character.—According to the *British Medical Journal*, a Dr. Sheridan, of Stradone, Ireland, was recently placed in a most unpleasant position. He was called to see a young woman, and proceeded to make a vaginal examination. While so engaged, the mother of the girl shut and locked the door of the room, so that the doctor could not get out, and he had to call to his servant out of the window to go for the police. On their arrival, Dr. Sheridan was given into custody on the charge of rape. When he was brought to trial, the magistrates, after an investigation of the case, refused to entertain the charges, and the chairman stated that all the magistrates agreed with him in saying Dr. Sheridan left the court without a stain upon his character. The two fife and drum bands of the town turned out to welcome the doctor on his return home.

The Female Members of the British Medical Association.—On Thursday, July 28th, the medical women attending the meeting of the British Medical Association in Edinburgh held a special dinner, at which forty-two practitioners, all but three of them members of the association, were present. The only non-medical woman present was Miss Louisa Stevenson, a patient and successful worker in the cause of medical education for women in Great Britain. Dr. Sophia Jex-Blake was requested to take the chair. After dinner Dr. Jex-Blake proposed three toasts, which were received with acclamation: (1) "The Secretaries," who had proposed and carried out the arrangements for the dinner so successfully at twenty-four hours' notice. To this Dr. Jane Walker responded. (2) "The Guest of the Evening," to which Miss Stevenson responded. She said that it was in the struggle in Edinburgh nearly thirty years ago that the battle of medical education for women in the United Kingdom was really fought and won, and that but for that struggle no such assemblage as the present would have been possible. (3) "The Health of Dr. Garrett Anderson," the first woman who had obtained a British diploma, to whom all present owed a debt of gratitude. Dr. Garrett Anderson remarked that all was not yet won, and that she hoped to see medical women on a more absolute equality with medical men than was yet the case. Dr. Florence Boyd then proposed "The Health of Dr. Jex-Blake," and a vote of thanks for her acceptance of the chair. In responding to the toast, Dr. Jex-Blake begged her hearers to remember that, if the elder women had laid the foundation stones, the succeeding generation must build the walls and complete the edifice.

Worse than an Army Transport.—The *Berliner Post* says that during a recent passage up the Obi river of the Siberian convict ship *Angara*, going from Tiumen to Tomsk, in western Siberia, thirty-one out of five hundred prisoners died from suffocation and overcrowding.

The Johns Hopkins University, according to the *Medical Press and Circular*, is located in Washington. Our esteemed contemporary has an infallible instinct for the incorrect in its comments on America and Americans.

A Protest of Polish Physicians.—The following protest against the arbitrary action of the Prussian authorities in preventing a medical congress at Posen has been presented to the Austrian Parliament: "In the first days of August, 1898, the Polish Association for the Promotion of Medical and Natural Knowledge was expected to hold a meeting in Posen. Early in July the chief of the Posen police informed the organizing committee of the meeting that strangers (*i.e.*, Poles who were not Prussian subjects), would not be allowed to participate at the proceedings. The police authorities added, in the most brutal tone, that if any such persons came to Posen at the time of the meeting they would be immediately, and in the usual compulsory manner, expelled from the country. This measure is directed against a number of men, desirous of entertaining calm and friendly scientific intercourse. It is not too much to say that it violates the legitimate claims of science, with which the meeting was solely and uniquely to be concerned. For thirty years past the meetings of the Polish Association of Physicians and Naturalists have been held without difficulty or conflict. In the year 1884 a very successful gathering took place at Posen and no offence whatever was found to be the result. The motives of this prohibition are well known. In certain German circles it has become quite usual to incite against the Polish nationality, and to envenom the relations between this and the German nationality, the aim being to frustrate every intellectual enterprise, every undertaking of culture and civilization, if coming from Polish quarters. We feel bound to protest most emphatically against the measure adopted by the Prussian authorities at Posen." The memoir is signed by nearly sixty physicians and professors in the universities of Cracow and of Lemberg.

The Late Dr. John Blair Gibbs.—At a special meeting of the Society of Alumni of Bellevue Hospital, held July 13, 1898, to take action upon the death of John Blair Gibbs, M.D., assistant surgeon, U.S.N., who was killed at Guantanamo, Cuba, June 12, 1898, the following was presented and adopted:

"We are here assembled to mourn the loss of a comrade who had endeared himself to us all by his manly virtues, by his high attainments, by his patriotism, and by qualities which distinguish the gentleman and scholar.

"Our beloved associate, John Blair Gibbs, now rests in a land so distant that no mother's tears can be shed upon his brow, no flower cast upon his grave. But many sighs tell of the depth of affection for him who sacrificed his life in ministering to his disabled fellow-soldiers.

"While we deplore the untimely demise of one of the first heroes to perish in this war, we have the assurance that his death is honorable to his calling, glorious to his memory, and consoling to his family, to whom we resolve to send this note as an expression of our sincere condolence.

"*Resolved*, that the above be spread upon the society's minutes, and that a copy be forwarded to the medical journals."

LOUIS A. DI ZEREGA, M.D., *Secretary*.

The Passing of the German Scientist.—It is astonishing to the American that German medical men of world-wide reputation as investigators can throw stones at the American character with their right hands, while putting their left hands behind their backs to receive the unjustified profits from the American patents on their discoveries, and yet maintain a reputation for honor. It is a pleasure to reflect that no American physician of any reputation has ever so debased himself, and further that American medical ethics, with all its admitted shortcomings, has never yet descended to the German plane. How long in America would Behring be a leader of medicine after he had publicly patented, for the benefit of his own pocket, the results of the labors of Pasteur, Roux, Fraenkel, Kitasato, Aronson, Tizzoni, Ehrlich, and many others? Not very long certainly.—*Cleveland Journal of Medicine.*

We, in this country, are accustomed to be stigmatized as a people whose thoughts seldom, if ever, rise above the almighty dollar. We are contemptuously classed by the inhabitants of Europe with the English as a nation of shopkeepers, and the Germans have been most ready to cast this reproach in our teeth. But it can be safely asserted that in the Germany of the present day, to a greater extent than in any other civilized land, are its scientific men—with a few notable exceptions—saturated with the love of lucre.—*Pediatrics.*

The Hospital Ship "Relief" returned from Ponce, Porto Rico, on August 19th, having on board two hundred and forty-eight sick and wounded soldiers, of whom one hundred and fifty-four were suffering from typhoid fever. There were fourteen deaths, among them that of Major Lawrence S. Smith, surgeon of the first Pennsylvania volunteers. The typhoid fever, which is prevailing to a very serious extent among the troops in Porto Rico, was brought from the infected camps in this country.

Faith without Works.—A girl thirteen years old, whose parents live in Greenport, L. I., died recently of typhoid fever. The child's mother had refused to call in a physician until she was forced to do so by the local health officers. She was a faith curist and insisted that she could and would cure her child by prayer.

The Scandals in the Treatment of the Wounded and Enfeebled Soldiers at Montauk Point grow worse day by day, and the righteous indignation of the public becomes constantly more intense. The usually well-informed Washington correspondent of the Boston *Herald* reports that Secretary Alger continues to dismiss all criticism of the conduct of the war department as beneath notice, and says that he "proposes to order no courts of inquiry, much less to order any court-martials to settle responsibility and adjudge penalty for the deficiencies of the medical, commissary, and quartermaster's departments." On the same authority we are told that "President McKinley is apparently unwilling to make a breach with his secretary of war by insisting upon any impartial investigation."—*Evening Post.*

The Injury to the Prince of Wales.—*The Lancet* says that the present condition of the Prince of Wales' broken patella argues well for the future mobility of his joint, and thinks that he will not be permanently lame. "It will be a month before the Prince will be able to walk. Then his knee will be fitted with a check splint, by which flexion will be exactly controlled, and a spring apparatus will perform the function of the extensor. With the leg thus equipped, short excursions will be made on crutches, but it will be many weeks before his Royal Highness will walk unaided."

Sickness among the Troops at Porto Rico.—Illness among the American troops is on the increase, and there are now nearly a thousand cases of malaria and dysentery, with a few of typhoid fever. The army medical authorities have urgently recommended that the sick be sent North as rapidly as possible.

Dr. Antonio Jurada, recently surgeon on the *Vizcaya*, was released from custody a few days ago and sailed for Spain on Saturday last. He was advanced in years and suffered severely from exposure after the sinking of his ship. Upon arrival at Annapolis with the other Spanish prisoners he was found to be suffering from tuberculosis, and the disease made such rapid progress that it was feared he would be unable to reach Spain alive if his departure was delayed. Accordingly, the navy department directed his release, together with that of one of the chaplains, who was detailed to accompany the sick surgeon.

Foreign Titles in Great Britain.—A bill has been introduced into the house of commons making it compulsory for every person who attaches to his name the degree of bachelor, master, or doctor in any faculty in which degrees are granted (unless such degree has been received from a British university or other body in the United Kingdom entitled to confer degrees) to indicate clearly the source from which such degree has been received, under a penalty of forty shillings and costs.

A Woman Professor of Gynæcology.—The Dutch are far more liberal and up to date than their German neighbors, as witness the recent appointment of Dr. Katharina van Tusshenbroek to the chair of gynæcology in the University of Utrecht.

A French Anatomical Society.—Plans are being made for the foundation of a French "Association des Anatomistes," to include those interested not only in human and comparative anatomy, but also students of histology, embryology and anthropology. The association will meet annually in some university centre, Paris having been chosen for the place of the first meeting, to be held next year.—*Science.*

A Fool and his Cycle.—"Put a fool on a cycle and he will ride to destruction," makes a very good reading of an old saw, says *The Lancet*, and describes a situation which we can regard with equanimity. But when the fool on his way to his proper destination thinks well to smash into other people it is time to put a limit to his folly.

Reviews and Notices.

Atlas and Abstract of the Diseases of the Larynx. By Dr. L. Grünwald, of Munich. Authorized Translation from the German, Edited by Charles P. Grayson, M.D., Lecturer on Laryngology and Rhinology in the University of Pennsylvania; Physician-in-Charge, Throat and Nose Department, Hospital of the University of Pennsylvania. With 107 Colored Figures on 44 Plates, and 25 Text-Illustrations. Philadelphia: W. B. Saunders. 1898.

This is a good work of reference, being both practical and concise. The main features are the colored plates of pathological conditions, which are well executed and faithful, and illustrate the individual histories accompanying them. The microscopical plates add a value to the work. The type is large and the book is easily readable, and is a valuable addition to the existing laryngeal text-books.

Cardiac Failure and its Treatment. With Especial Reference to the Use of Baths and Exercise. By Alexander Morison, M.D. Ed., F.R.C.P. Ed., Physician to Out-Patients in the Great Northern and Central Hospitals, and in the Paddington Green Children's Hospital, etc. London: The Rebman Publishing Company, Ltd. 1897.

There are four parts and an appendix. The first has sections on percussion of the heart, landmarks, auscultation, extra cardiac signs, and signs in nervous diseases. The second part treats of the neuro-muscular and of the hæmic factors; the third part of general treatment; and the fourth part of treatment by baths and exercises. In an attempt to give full justice to those who have of recent years brought forth the modern method of treatment by baths and various forms of exercise, the author does not forget to mention those of the past whose contributions have materially added to our means of treating cardiac affections at the present day. In the preparation of this work there have been taken into consideration the character and general treatment of the conditions for which the baths and exercises are particularly adapted or advised. The subjects under discussion have received straightforward and serious consideration. There are many illustrations of heart or pulse curves; a few of pathological conditions, and a series of views showing the application of passive gymnastics or exercises against resistance. Dr. Grödel's appendix amplifies much that has been said showing the advantages of a Nauheim course for the cardiac patient. The fact that the author's experience has been gained outside of the bath resort, as well as at it, will make his conclusions the more unbiassed and convincing to many readers.

Fiftieth Anniversary of the Hartford Medical Society, Founded September 15, 1846. Proceedings at the Celebration, October 26, 1896, at Hartford, Conn.

An historical address, memoirs of departed members, remarks by the president, and the very clever postprandial exercises make up this little book. The attractiveness of the binding is enhanced by the Red Cross cover.

Proceedings of the Dedication of the Hunt Memorial Building by the Hartford Medical Society, February 1, 1898.

The "Proceedings" are of interest as illustrating the eagerness with which a medical fraternity grasps any proffered assistance tending to the advancement of medical science. The Hartford Society deserves credit for the enthusiasm displayed in the fulfilment of the terms of the bequest.

Hay Fever and its Successful Treatment. By W. C. Hallopeter, A.M., M.D., Clinical Professor of Pædiatrics in the Medico-Chirurgical College of Philadelphia, Physician to the Methodist Episcopal Hospital, etc. Philadelphia: P. Blakiston, Son & Co. 1898.

In this little volume of one hundred and twelve pages, exclusive of a bibliography going back to 1565, we are given the author's method, by which he has relieved completely over two hundred patients from this troublesome affection. After the general remarks and a history, the exciting causes are enumerated, and then follow symptoms, pathology, and treatment. The careful and thorough antiseptic rules laid down are worthy of attention.

State Board of Health. Seventeenth Annual Report. Albany and New York: State Printers. 1898.

This comprises two handsomely bound volumes, the second containing maps of the sewerage systems in various towns and cities. The wide range of information is of value to all interested in sanitation and health-board work.

The Retrospect of Medicine. A Half-Yearly Journal. Edited by James Braithwaite, M.D., and E. F. Trevelyan, M.D. Lond., B.Sc., M.R.C.P. Vol. CXVII., July, 1898. London: Simpson, Marshall, Hamilton, Kent & Co., Ltd.

The usual attractiveness of this publication is maintained in the present issue. After the alphabetically arranged synopsis follow selections from the year's literature on medicine, surgery, obstetrics, etc. The choice of material is, for the most part, good, and American writings are well represented.

A System of Practical Medicine. By American Authors. Edited by Alfred Lee Loomis, M.D., late Professor of Pathology and Practical Medicine in the New York University, and William Gilman Thompson, M.D., Professor of Medicine in the Cornell University Medical College, New York. In Four Imperial Octavo Volumes. Volume IV.—Diseases of the Nervous System and Mind; Vasomotor and Trophic Disorders; Diseases of the Muscles; Osteomalacia; Rachitis; Rheumatism; Arthritis; Gout; Lithæmia; Obesity; Scurvy; Addison's Disease. 1,099 pages, 95 engravings, and 8 full-page plates in colors and monochrome. Philadelphia and New York: Lea Brothers & Co. 1898.

This, the last volume of the "System," is devoted mainly to diseases of the nerves and mental affections. There is, however, a chapter on diseases of the muscles, and some ten miscellaneous subjects have received attention at the hands of Dr. W. G. Thompson himself. In the list of contributors are such well-known names as Dana, Starr, Dercum, Coleman, Eskridge, Finley, Fisher, Gray, Herter, Bailey, Jacobi, Peterson, Putnam, Noyes, Mills, and many others. A vast amount of work has been put into this "System," and the present volume reflects credit upon every author who has helped bring the undertaking to a successful issue. The surviving editor is to be congratulated upon completing the work left to his efforts alone by the unfortunate and untimely death of his associate. Not only have the editorial duties and difficulties been successfully accomplished, but the editor has found time to contribute many important chapters. The publishers' part has been well done. The volume index is full, and there is a general index to all four volumes.

Archives of the Roentgen Ray. Edited by W. W. S. Hedley, M.D., and Sydney Rowland, M.A. London: The Rebman Publishing Company, Ltd.

We have had occasion several times to call attention to this interesting and progressive periodical, formerly *The Archives of Skiagraphy*. The issue now before us has the usual number of illustrations and interesting articles.

Diseases of the Skin. Their Constitutional Nature and Cure. By J. Compton Burnett, M.D., Author of "Ringworm: Its Constitutional Nature and Cure." Third Edition, Revised and Enlarged. Philadelphia: Boericke & Tafel. 1898.

The title of this book is misleading. The two hundred and fifty diminutive pages, taken up chiefly with the relation of personal cases more or *less* convincing, can in no sense be taken as a serious treatise on modern dermatology. The author has a hobby that almost all ills arise from eruptions "driven in" by usual methods of treatment, and that by reproduction of a skin eruption the constitutional affection can be made to disappear again. This hobby is ridden with so much *post hoc* spurring and such an amount of *propter hoc* whipping that one is led to the conclusion that either previous editions must have been small ones, or that many of those who made the present edition a possibility were actuated by sentiments of curiosity. Grains of truth are scattered through the pages, but the work should never have been allowed to go

out as a guide to students of homœopathy as to what scientific dermatology really implies. To those capable of appreciating those things which the author lacks or hides it will prove an interesting and at times instructive book.

TEXT-BOOK OF DISEASES OF THE KIDNEYS AND GENITO-URINARY ORGANS. By PROF. DR. PAUL FÜRBRINGER, Director of the Friedrichshain Hospital, Berlin; Royal Medical Councillor and Member of the Royal Medical Council of the Province of Brandenburg, etc. Translated from the German with Annotations by W. H. GILBERT, M.D., Physician in Baden-Baden; Physician to the Sanatorium of Dr. Frey-Gilbert, Baden-Baden, etc. In Two Volumes. Volume II. London: H. K. Lewis. 1898.

THE second volume of this excellent work, which has been well translated, opens with a consideration of pyelitis and pyelonephritis. Following chapters on tumors and abnormalities, diseases of the biadder are considered, and then those of the urethra. After the diseases of the genital organs come a bibliography and then the index. The bibliography is quite full, covering twenty-three pages. Urinary sediments furnish about the only illustrations. The chapters are almost without exception written in an entertaining style and indicate a master mind.

Clinical Department.

AN EPILEPTIC FIT LASTING FORTY-FIVE MINUTES.

BY L. PIERCE CLARK, M.D.,

FIRST ASSISTANT PHYSICIAN, CRAIG COLONY FOR EPILEPTICS, SONYEA, N. Y.

IT is well known by those accustomed to seeing many cases of epilepsy that the fits frequently occur in series in such a relationship to one another that one attack may appear to run into or overlap the other. Again, an epileptic paroxysm may be so incomplete in the character of its discharge that a slight irregular muscular convulsion will persist at varying periods for hours or even days afterward. In the first instance spoken of, that of attacks occurring in series, the patient remains in a condition of coma, from which he arouses sufficiently to pass through his serial fits. This last-named state is commonly termed status epilepticus.

Single isolated attacks of epilepsy rarely last more than three minutes. Cases have been placed on record of ten and possibly fifteen minutes, and the patient has not materially suffered from the effects.

Apropos to the foregoing remarks, I wish to place on record a very unusual case of epilepsy, in which the convulsive movements of the epileptic fit lasted for forty-five minutes.

J. S. McA——, male, aged thirteen years. His epilepsy began when he was six months of age, at the time of dentition. The patient is the fifth child in a family of five. A paternal aunt died of phthisis. His father had curvature of the spine and died of spinal meningitis: he was also somewhat demented before his death. A paternal uncle was insane. Two of the patient's brothers had convulsions at dentition. During infancy the patient had several attacks of summer complaint, and these were always attended by convulsions. The patient's mother had three sisters who suffered from sick headaches and "neuralgic attacks." In early infancy the patient frequently suffered from night terrors and disordered sleep. The attacks at first most frequently involved the left side. The early onset of the patient's epilepsy has materially interfered with his mental development.

March 19, 1898, I was called to see the patient, who was in a continuous clonic spasm. The muscular convulsion was most marked in the left arm and right leg, although all skeletal muscles were involved in the convulsion. The patient had been in a continuous spasm for twenty minutes prior to my seeing him. This condition continued, although the ordinary means were used to stop the seizure. At the end of about forty minutes of continuous clonic movements, the patient's temperature registered 103° F., although he had begun in a condition of ordinary health. At the end of the forty minutes inhalations of chloroform were given. About five minutes after this, at the completion of the forty-five-minute period, the convulsions had almost entirely ceased and very soon ceased altogether. The patient passed into a condition of coma. The pulse rate was 146, and the temperature remained high. Extreme and profuse perspiration had resulted. The patient remained in a comatose condition, unable to be aroused, for thirty-six hours thereafter, the temperature gradually returning to normal. It reached its normal limit at the end of forty-eight hours. The patient was somewhat confused for two or three days.

At no time did this attack give the appearance of being what is frequently termed by French writers "subintrant or imbricated attacks." The spasm was regular and rhythmical at all times, and it was evidently one continuous seizure throughout. Apparently this attack was primarily caused by stomachic indigestion; the patient has had frequent attacks in which an initiative vomiting was the prominent feature of the paroxysm.

HERNIA OF THE BLADDER.

BY T. E. SCHUMPERT, M.D.,

SURGEON TO THE CHARITY HOSPITAL, SHREVEPORT, LA.

JOHN C——, aged forty-six, Italian, groceryman; weight, two hundred and twenty-eight pounds; came to my office, March 2d, to consult me with regard to what he designated a left oblique inguinal hernia. After an examination, I verified his diagnosis and advised an operation for the radical cure, explaining to him the impracticability of a truss in his case, owing to the shape of his abdomen and the thickness of the abdominal wall. The operation was consented to at once, and it could readily be seen that he had decided already that this was the only thing to be done, as he stated that he had tried trusses without any relief. He further stated that he wished the operation immediately, and would not be put off until the next morning. So 4 P.M. was the hour set, and, after all usual preliminaries, I proceeded to operate. My first incision revealed a very thick abdominal wall with a large hernial mass of postperitoneal fat. The empty sac was soon found and freed of its posterior and lateral adhesions and disposed of in the usual manner. What yet remained of the hernia was too large to incorporate in one or two ligatures. So I began at the top and split down and ligated away, section by section, until three ligatures were employed. Then as I proceeded in the same manner with the last remaining segment, with one snip of my scissors a copious flow of amber-colored fluid escaped. This I recognized at once to be urine and as soon realized the gravity of my mistake. The bladder, which was entirely hidden, was now dissected clear and placed in the upper angle of my parietal incision, with the cord alongside of it. The ring was then closed with kangaroo tendon and the skin wound closed with continuous catgut, including the incision in the bladder, which was sutured to the skin incision, thus forming a urinary fistula. My patient rallied nicely, and the urine continued to flow through the wound copiously, necessitating a change of dressing three or four times a day. His temperature never rose beyond 100° F., and the abdominal wound healed primarily.

On the tenth day under cocaine anæsthesia I dissected out the fistulous tract entirely and closed the

abdomen with deep catgut sutures, and the skin wound with the same, save where a small drainage tube was inserted. This wound also healed kindly, and in two weeks more my patient was discharged cured.

I report this case because such conditions are rare and little has been written on the subject during the last few years. Had it been more written about, the anticipation would have been fresher in my mind, and possibly, though not probably (in this case), I should have avoided this sore mistake. I perceived no glistening surface to warn me, nay, apparently nothing but a large mass of fat. Who would have suspected that a viscus would be disclosed so foreign to its domain? Hernia of the bladder must necessarily be rare, owing to its anatomical disposition. Such men as Cooper, Scarpa, Percival, Pott, and others have witnessed it not more than once or twice, and John A. Wyeth says: "I have witnessed two cases in which the bladder was wounded in an operation for supposed intestinal hernia of the oblique inguinal variety." Pott records a case in which he cut into a cystic hernia, on the supposition that he was dealing with a dislocated testicle; and there are other instances in which the trouble has been mistaken for hydrocele, abscess, or inflammatory enlargement about the groins. Marcy records a case that had been diagnosed hernia of the testicle on two previous occasions. While he was not inclined to agree in the diagnosis, he was yet in doubt. He says: "I made my incision through the skin and cellular membrane, by means of which I discovered a firm, white, membranous cyst connected loosely with the cellular membrane in the same manner as a hernial sac. I dissected this bag quite clean, and found, as I traced it upward, it became narrow and seemed to proceed from the upper part of the groin. I cut it off at the constricted portion. Upon the division there issued forth about four ounces of urine." Thus it may be seen how rare these complications are, and difficult for even the most experienced to deal with.

HYDRONEPHROSIS CAUSED BY ENLARGED PROLAPSED LEUKÆMIC SPLEEN.

By CHARLES C. ALLISON, M.D.,

OMAHA, NEB.

On October 14, 1897, I examined Mrs. C——, married, aged forty-two years; family history negative. The patient has borne eight children, and until early in 1894 her health had been good. Prior to this time the patient's home was in London, but in 1894 she moved to Chicago, where she was treated for malarial fever; and with this illness dates the appearance of an enlargement on the left side of the abdomen. The abdominal distention continued to increase, becoming more general, and attained the size of full-term pregnancy. At this time well-marked anuria was noted, with impaired digestion and persistent hæmatemesis. Coincident with a sudden polyuria, which commenced in the night and recurred on the three or four succeeding nights, the abdomen rapidly diminished in size. The urine was described as thick, brownish in color, and very abundant; the quantity passed on each night is said to have been over a gallon. These phenomena have been repeated three times since 1894, marked improvement in the patient's comfort and subsidence of the abdominal enlargement having followed the free discharge of highly colored urine.

Examination reveals a large movable mass over the left upper and half of the left lower quadrants of the abdomen. The border of the tumor is sharply defined, and describes a broad curve from the left costal arch to the iliac crest. Dulness extends over the entire area and as high as the tenth rib. The location, the size, and the shape of the enlargement point plainly to enlarged spleen. Blood examination is as follows: Hæmoglobin, seventy-five per cent. Corpuscles (mean of five counts)—red, 3,680,000; white, 9,000. Leucocytes—small mononuclear, large mononuclear, and polynuclear, decrease; transitional, marked increase; eosinophiles, very marked increase.

Few nucleated red blood corpuscles were found, and no bone-marrow corpuscles. Fifty per cent. of the leucocytes in the differential count consisted of eosinophiles. This, while not characteristic of a leukæmic enlargement of the spleen, yet pointed to that condition, and the clear history of a hydronephrosis which developed after the enlargement of the left side was first noted would make it strongly presumptive that the enlarged spleen caused an obstruction by pressing upon the ureter, and led to this additional abdominal enlargement.

Operative treatment for enlargement of the spleen due to leukæmia has never been in favor. The most complete report is made by Dr. Richard Douglas (*Journal of the American Medical Association*, April, 1896), in which 149 splenectomies are recorded: 36 operations for leucocythæmia, with 31 deaths; 59 operations for hypertrophy, with 25 deaths; 5 operations for neoplasms, with 3 deaths; 6 operations for hydatid disease, with 2 deaths; 43 operations for wounds, with 11 deaths. A recent report by Jonnesco (*Annals of Surgery*, 1897) includes 11 splenectomies for malarial disease and 1 for hydatids with no deaths.

In view of the figures given by Douglas, and more especially bearing in mind that the other reports of operating for leukæmic enlargement of the spleen are even less favorable, it is plainly conservative to depend upon other measures for the relief of this condition.

A CASE OF HODGKIN'S DISEASE.

By J. J. MORRISSEY, A.M., M.D.,

VISITING PHYSICIAN TO ST. JOSEPH'S HOSPITAL, NEW YORK.

Through the kindness of Dr. C. M. Cauldwell, chief of the staff of St. Joseph's Hospital, the writer is enabled to report the following case, which was lately in our wards at St. Joseph's Hospital. Pseudo-leukæmia is commonly called Hodgkin's disease, from the well-known morbid anatomist of Guy's Hospital, who first described in detail its general features. Before his time the disease had no definite recognition and its pathological characteristics were not understood; but his careful researches, supplemented by those of Virchow and Cohnheim, have given it a place and an importance worthy of its destinctive character. In the majority of cases there is to be found an antecedent history of syphilis, malarial poisoning, or, combined with these, a local irritation, from which the disease rapidly spreads. In the case cited, however, the history was absolutely negative. There appears to be no recognizable cause preceding the development of the glandular irritation, and the entire history of the patient would seem to preclude the possibility of an active, specific poison.

Mrs. C——, forty years of age, stout in body and of phlegmatic temperament, some four years ago had an attack of what was called by her attending physician muscular rheumatism. She was pregnant at the time, and some three months afterward the child was born. Shortly after this occurrence she noticed that two glands in the left cervical region were enlarged, but freely movable beneath the tissues. Slowly they increased, and her physician, evidently basing his diagnosis upon the fact that two of the patient's brothers had died of phthisis, concluded that tuberculous adenitis was present, and advised their removal. The cicatrices still mark the locality whence the glands

were removed. At a later period other glands on the right side of the neck became prominent and rapidly increased in size. At this time the general nutrition of the patient had not been interfered with, and she suffered but slight inconvenience in attending to her household duties. One of these glands was also subjected to surgical examination, but the operation appeared to intensify the development of the others, and she would not permit further interference.

From the patient's statement, a microscopical examination of the blood had not been made, and evidently a correct diagnosis had not been reached. She was advised to consult the late Dr. Cronyn, of Buffalo. He immediately detected the gravity of the disease, informed her as to its nature, and gave an unfavorable prognosis. He strongly deprecated further interference with the glands, unless the exigency of the case demanded their removal. Since that time a rapid interference with the functions of the glandular tissue in several portions of the body has taken place, and the diagnosis has been confirmed in every particular.

Status præsens: The glands of the neck are swollen and tender, and are increasing in size, those of the left side predominating. The glandular infiltration of the axillæ is especially prominent, but not so painful as in the cervical region. The inguinal glands appear to partake of the general involvement. For the past three months the patient has also noticed that there is a slowly developing enlargement of the left hypochondriac region, the dimensions of which cannot be accurately determined on account of the excessive amount of adipose tissue. The spleen is easily palpable, and on pressure somewhat painful, while over the liver percussion evokes decided tenderness. The latter organ does not appear to be increased beyond its normal anatomical relations. There are no marked pressure symptoms, nor is there interference with the circulation, either in the thorax, abdomen, or cranial cavity. The mind is clear and cerebral activity unimpaired. (It should have been mentioned that the cervical glands of the right side occupy the entire space between the inferior maxillary and the clavicle, and can be pressed upon without eliciting pain.) The voice is "thick," the tonsils are hypertrophied. There is no decided interference with deglutition. There is a slight deafness, probably due to the growth of the adenoid tissue in the pharynx close to the Eustachian tubes. The anæmia, which gradually manifested itself subsequent to the enlargement of the cervical glands, is not of a profound type and certainly cannot be said to be characteristic. However, there may exist enormous enlargement of the lymph glands without marked anæmia (Osler). It would appear that the younger the patient the more acute the manifestations, and, in consequence, the cachectic condition discloses itself at an earlier period.

In conjunction with the symptoms described above, there is breathlessness on the slightest exertion. A careful examination of the cardiac region failed to show anything abnormal, except a slight innocuous murmur, probably functional in character. The pulse is weak but not irregular, and, considering the protracted course of the disease, the heart may be said to be in fairly good condition, the beats averaging 112 to the minute. The fever is continuous, with slight diurnal variations, the thermometric curve seldom exceeding 101 F. There has been no epistaxis.

A microscopic examination of the blood failed to show any of the characteristics of a true leukæmia, as the blood corpuscles did not fall below 3,500,000 per cubic millimetre, and there was scarcely any poikilocytosis. A few nucleated red blood corpuscles were present. Lymphocytes were found in abundance.

Mrs. C—— has three living children, all of whom are apparently in the enjoyment of excellent health, and up to the inception of the disease she possessed remarkable vigor. Two brothers, as stated above, died of tuberculosis, while her other relatives, so far as she knows, are free from disease. There is no history of repeated miscarriages or of symptoms pointing to a specific taint. Menstruation persisted up to two months ago, and with such regularity that the patient now considers herself to be pregnant.

The treatment adopted since the disease was first recognized has been classic in character, arsenic in the form of Fowler's solution and phosphorus having been freely administered. The patient believes there was a marked decrease in the cervical swellings while her system was under the influence of the medicine. Too much reliance should not be placed upon this alleged improvement, for, as is well known, there may be marked fluctuations in the dimensions of the enlargements irrespective of the administration of remedies.

2052 Madison Avenue.

FILARIA OSLERI.

By ERNEST B. SANGREE, A.M., M.D.,

Professor of Pathology and Bacteriology in the Medical Department of Vanderbilt University, Nashville, Tenn.

Some weeks since, while my chief assistant, Dr. Louis Leroy, was looking over a section of dog's lung, one of several hundred that had been cut for the class in normal histology, he discovered the parasite figured in the accompanying illustration. At my suggestion he

examined all the rest of the sections, and succeeded in finding five more showing portions of the worm. As I was not certain as to the parasite's identity, I sent one specimen to Prof. Edwin Klebs with a query. He replied that he thought it was a species of strongylus, though he could not say positively without seeing the head. He also remarked that it was strange to find no inflammatory reaction in the neighborhood of the

worm. The head, by the way, we do not seem able to find.

Another section I sent to the bureau of animal industry at Washington, D. C., with a similar query, and Dr. D. V. Salmon, chief of the bureau, was kind enough to have the specimen examined and send me the following reply:

"U. S. Department of Agriculture,
"Bureau of Animal Industry,
"Washington, D. C., February 17, 1898.

"*Dr. Ernest B. Sangree, Nashville, Tenn.*

"Dear Doctor: The specimen mentioned in your letter of the 9th inst. has been duly received. I should not be willing to risk a positive opinion on the parasite without having an entire worm before me, but in all probability the worm is Filaria Osleri (Cobbold, 1879), originally mentioned by Osler in 1877 as Strongylus bronchialis canis. The specimen evidently represents a single worm, and the spiral twisted bodies are embryos. Very respectfully,

"D. E. Salmon, *Chief of Bureau.*"

Strongylus is rare in the human, but different varieties of this type of worm are not uncommon in animals, such as sheep, goats, rabbits, deer, dogs, cows, horses, and birds; and seem to have a special predilection for the lungs, where they occasion inflammation. But as in all probability not many physicians have run across one of these parasites in their microscopical work, I thought a note on it and an illustration might prove of interest.

SUDDEN DEATH AFTER CONFINEMENT.

By R. S. JOYCE, M.D.,
OGDEN, UTAH.

The patient was a multipara, mother of eight children, all large at birth. At her last confinement, two years ago, as the midwife reports, the patient had a "sinking-spell," became very cold, and was with difficulty kept alive. The facts in the present case are about as follows: Three weeks before her delivery the waters broke and had since come away freely. She had also had a discharge of meconium from the vagina for the past two weeks. When seen by me on the day of her death, she exhibited all the outward symptoms of a full-term pregnancy. The shoulder presented, and the presentation was converted into a vertex one with difficulty. Pains were at intervals of fifteen minutes, and very severe. After waiting two hours without any appreciable advancement, I put on high-traction forceps and brought the head low down on the perineum, and then removed the forceps. The woman then began to have her first real bearing-down pain, and child was soon expelled. When the forceps were removed the blades were covered with bright yellow fæcal matter, and this also covered the child at birth. The child was dead, and had no doubt been dead for some time, as the cord was friable and broke easily. The placenta was soon removed and no great loss of blood occurred. The child weighed eighteen pounds and looked like a child a year old. Within a few moments after the fœtus was delivered and before the placenta was discharged, the mother complained of being cold and of great difficulty in getting her breath. There was no post-partum hemorrhage. The dyspnœa increased rapidly, the face became white and anxious, and the lips blue. She rolled and tossed on the bed, despite all efforts to quiet her. She had full consciousness and felt the gravity of her condition, insisting that she was about to die. Morphine failed to give even temporary quiet, and large doses of brandy had no influence apparently on the circulation. She took the brandy ravenously. In an effort to raise her head, about two hours after delivery, she suddenly fell back dead. No autopsy was permitted, but her death was no doubt due to venous thrombosis.

A point of great interest in this case was the abundant discharge of meconium for two weeks before labor. The death of the fœtus in this case was no doubt due to asphyxia. The size of the fœtus, which I weighed accurately, and death from venous thrombosis, all together make a combination of accidents which are not often met. There was no recto-vaginal fistula.

A PATENT URACHUS.

By WALTON PRESTON, M.D.,
SAN FRANCISCO, CAL.

I would like to report a case anent the reference in a recent issue to cases of "Congenital Absence of the Penis." In 1876, while living in Benzonia, Mich., I was called to a case of complete absence of the sexual organs. The mother was delivered a few days before by a midwife, and I was sent for with the hope that "something" might be done to declare the sex of the infant. The child was otherwise well developed and weighed nine pounds; the parents were young and healthy, and with no previous history of any malformations so far as could be traced. Above and below the umbilicus, but in contact with each other, were two growths resembling very much in color and consistence the liver. On separation of the neoplasms, urine was seen to escape through the urachus. A compress was kept over the parts, and from the amount of saturation a normal amount of urine was apparently voided. Two years later I was again sent for to see the child, who was suffering from some slight ailment. At that time the child was very robust and masculine in its habits. The neoplasms were somewhat larger and the urine continued to escape through the urachus. The mother informed me that there was never any urinary odor on the diapers used to receive the fæces.

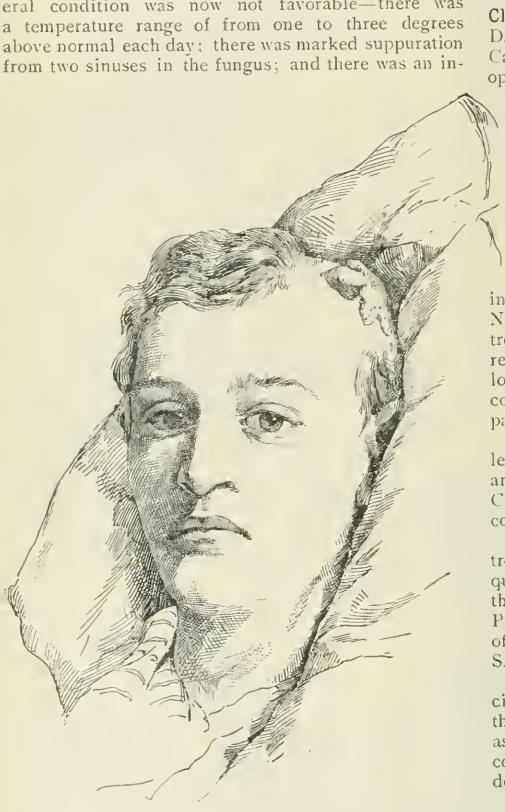
A CASE OF FUNGUS CEREBRI.

By T. S. McMULLAN, M.D.,
HERTFORD, N. C.

On December 21, 1897, I was hurriedly called to see a lad, fourteen years old, who had been shot accidentally with a pistol, 32 calibre, in the hands of one of his companions. The ball struck the cranium just over the third left frontal convolution, carrying away both tables of the skull for a space one and a half inches long by three-fourths of an inch wide, depressing the edges of the fracture and causing great comminution and impaction of the fragments. The ball had not penetrated the brain and was found embedded in the inner lamina; but the pieces of bone had badly lacerated the dura, were deeply embedded in the brain substance, and had caused great contusion of and some exudation of gray matter. The boy showed marked symptoms of compression, aphasia, and right facial paralysis.

It was not deemed necessary to trephine, the opening being of sufficient extent to allow what manipulation was needful; so, after elevating the depressed fragments, removing all the impacted pieces, and with a pair of fine forceps seizing and taking out the particles embedded in the brain substance, I washed out the wound with peroxide of hydrogen, inserted a piece of iodoform gauze, and left the wound (I mean, of course, the scalp incision, which was large) open. For ten days no untoward event took place. There were no increase in the aphasia, no fever, no suppuration, no

further symptoms of compression; and the wound seemed to be progressing toward a final cure. At the end of this time there appeared in its centre a small mass, of the color and feel of cartilage, which was attached by a pedicle to the underlying structures. This mass continued to increase in size, expanding upward and outward, until at the end of five weeks from the time of the shooting it had almost amalgamated with the tissues on each side, and, having lost its original color and feel, had the appearance of a mass of granulations. The accompanying illustration will show its size and appearance at this time. The patient's general condition was now not favorable—there was a temperature range of from one to three degrees above normal each day; there was marked suppuration from two sinuses in the fungus; and there was an in-



crease in the symptoms of compression, more marked aphasia, and more evident facial paralysis. His vitality was very low, and it required stimulation and a very condensed diet to tide over this crisis. During the whole time the most rigid antisepsis had been attempted—daily irrigations with hydrogen dioxide and daily (and often several times a day) dressings with iodoform gauze. The only method which I used to reduce this hernia was compression, systematic, the pressure being adjusted in accordance with the symptoms manifested. After the first week a decided diminution in the size of the tumor was noticeable, and at the expiration of the tenth week from the time of the accident there was no evidence of any abnormal growth; the sinuses had all kindly healed, the external wound had closed, the facial paralysis had disappeared, and the only relic of a very unfortunate and dangerous condition was a slight aphasia and a depression of the soft parts covering the aperture in the skull. The patient has been long since discharged, and there is now very little evidence of the original trouble.

Society Reports.

THE BRITISH MEDICAL ASSOCIATION.

Sixty-Sixth Annual Meeting, Held in Edinburgh, July 26, 27, 28, and 29, 1898.

(Special Report to the MEDICAL RECORD.)

(*Continued from page 286.*)

SECTION OF MEDICINE.

Second Day—Thursday, July 28th.

Climate in the Treatment of Disease.—DR. THOMAS DAVIDSON, of California, read a paper upon Southern California, and DR. JOHN CALWELL advocated the open-air treatment of consumption, while DR. GUILLEMARD, of Cape Colony, related his experiences in the veldt of South Africa, which he recommended as a resort for consumptives.

DR. SYDNEY JONES, of New South Wales, said that while the seaboard of that colony was unsuitable for consumptives, the high internal plains and mountain slopes were of the greatest value in the climatic treatment of the disease. He referred to the many hardships suffered by young consumptives of small means, who were sometimes induced to leave this country in the hope of cure in New South Wales, and who landed there in an extremely bad state of health and without the pecuniary resources which would enable them to reach suitable localities. He was endeavoring, he said, to start farm colonies in New South Wales, to which such poor patients could be sent.

DR. JANE WALKER, of London, described the excellent results she had obtained by open-air treatment and high feeding on a farm in Norfolk; and DR. CHURCHILL, of London, showed plans of an ideal seacoast sanatorium on the chalk cliffs.

Vascular Tension.—SIR WILLIAM BROADBENT introduced a discussion on the significance and consequences of different states of vascular tension, with their general management, which was continued by PROFESSOR BRADBURY, of Cambridge; DR. SAVILL, of London; DR. HANDFORD, of Nottingham; DR. SAMMAYS, of Mentone; and others.

DR. DENTON JOHNS was of the opinion that physicians should lose no time in acquainting patients with the gravity of their condition when it really was grave, as they (the patients) would then be more likely to conform faithfully to the rules and regulations laid down for their treatment.

Third Day—Friday, July 29th.

Bacteriological Problems.—DR. WRIGHT, of the Army Medical School, Netley, gave a lengthy address on bacteriology and antitoxin, but spoke so fast and so indistinctly that it was very difficult and sometimes impossible to follow him. He was wholly in favor of orrhotherapy, for which he claimed a great future. Some of his conclusions, however, were subsequently traversed by other speakers.

DR. MITCHELL BRUCE, of London, gave an account of three cases of diphtheria which he treated with injections of antitoxin, with the happiest result in each.

DR. ALLISON asked if Professor Wright ever administered antitoxin by the mouth. He had done so himself, and found it a method preferable to subcutaneous injection.

In his reply, DR. WRIGHT appeared to intimate that some at least of his experiments were performed upon himself: he did not give antitoxin by the mouth, and thought that much of its beneficial effect was lost when it was used in that way. He mentioned that he had

found injections of diphtheritic serum an antidote for syphilitic ulcerations.

Hydrotherapy in Fever.—Dr. Jules Guiart, of Paris, spoke of the treatment of fevers by the cold bath, and said that bathing, in addition to reducing the temperature, acted as a diuretic, as much as seven quarts of water being sometimes passed under this influence in the twenty-four hours—a deluge that washed the toxic substances out of the system. In one case he mentioned that the patient had no less than one hundred and twenty cold baths before the desired effect was produced; it was almost a hopeless case to all appearance, the pulse being uncountable and the patient practically moribund, but she happily recovered. He then mentioned a case of measles which progressed favorably until the sixth day of the fever, when sickness set in; the child then became delirious, with a temperature of 106° F. and toxic dyspnœa. Not without difficulty he obtained permission to place her in a bath of the temperature of 18° C., and with good effect, for one hour afterward the temperature had fallen to 104° F. and the child perspired freely—one of the results he (Dr. Guiart) looked for from the use of the cold bath; and after the second bath this child was quite well.

In a case of scarlet fever the pulse was 150, only two ounces of urine was passed in twenty-four hours, and the patient was almost comatose when placed in the cold bath, in which she almost died, her skin turning blue, so that wine had to be administered and caffeine injected subcutaneously; but an improvement was soon manifest, though the patient had between twenty and thirty baths before she was out of danger. He considered that the bad symptoms in this case were due to the small quantity of water (two ounces) passed during the previous four and twenty hours; but in the first bath she urinated freely, for the water had a strong urinous smell when the patient was taken out of it, and, strange to say, no more urine was passed afterward until the patient was again placed in the bath. The cold evidently made her urinate. Eventually the patient made a good recovery.

Movable Kidney.—Dr. Cutwell exhibited a belt of his own devising for use in cases of floating or fallen kidney, which he said were of much more frequent occurrence than was generally supposed; his belt, he thought, would render operative interference unnecessary in such cases in future.

The Cinematograph in Medicine.—Dr. E. Doyen, of Paris, gave three most interesting cinematographic demonstrations. The first was of an operating-table of his own devising, adaptable for every case needing surgical aid; the second was of an operation for the removal of an abdominal tumor from a patient, which occupied about three minutes in the performance; and the third was of the preparation of a head for the removal, a week later, of a cerebral tumor. The scalp divided, a flap of skull was cut with a saw of Dr. Doyen's own device, a bony flap was raised, and the scalp was sutured again, the whole operation occupying about three minutes. Dr. Doyen's saw seemed to cut through the bone like a knife cutting butter rather than to divide it in the ordinary way. Altogether it was a most realistic and absorbingly interesting demonstration.

SECTION ON SURGERY.

First Day—Wednesday, July 27th.

The president, Dr. John Duncan, in his opening address, said that in Edinburgh they had been engaged in putting their medical house in order. The staple commodity of Edinburgh was education, medical and general. To one looking back, as he did, for thirty or forty years, nothing was more striking than the increasing importance of the examination system. Examinations were formerly intended merely to eliminate the unfit. Now they dominated the teaching. He hoped that they would soon succeed in so far educating the examiners that they would recognize that candidates were not finished practitioners, but that the chief business of the teacher was to make the student think and that the examiner's business was to find out how far the teacher had succeeded in each case. Increased attention was now given to practical and clinical work. The laboratories and museums attached to various departments of the university and to the Colleges of Physicians and Surgeons were evidences of this. In the Edinburgh Royal Infirmary arrangements were now all but completed for placing a surgical theatre at the disposal of each set of wards. The antiseptic system had so widened the field of surgery and population had so increased that the youngest assistant surgeon in the infirmary now performed as many operations as were done in the whole infirmary in the days of Syme.

Students did not flock nowadays to the surgical theatre as the populace used to flock to an execution. The glorification of mere manual dexterity had greatly diminished, and a surgical operation had come to be regarded as an incident in a case, and the theatre had become an appanage to the ward, in which whatever manipulation was necessary might be carried out in the way most advantageous to the patient, and most beneficial to the student as a sequel to the diagnosis and as a preliminary to the after-treatment.

Not only had the new theatres been constructed according to modern ideas, but the older had also been remodelled on the same lines. The managers deserved all credit for this endeavor to meet modern requirements, but the speaker did not have great faith in surgical upholstery. He did not believe that the expense which had been incurred in transforming cleanly and well-ventilated theatres into structures of tiles and glass was a necessary expenditure. It might be said that it was all in the right direction, but there were considerations worth bearing in mind before the money of a charity was expended in costly reconstruction. Smooth and impermeable materials were not necessarily those which were most easily rendered aseptic. It was a fallacy to suppose that a theatre was made aseptic by douching its floor with antiseptic solutions. The cleansing of a good, old wooden floor was perhaps antiseptically as satisfactory as the treatment applied to its modern substitute. But the emanations from spectators were more dangerous than those from walls and floor. Must we not, therefore, follow those who had cut the spectators off more or less by an impermeable but transparent screen? The emanations from the operator and his assistants were, however, far more likely to reach the wound than those from spectators. So we might picture to ourselves a time when every one concerned in an operation—patient, surgeons, and assistants—having been rendered from top to toe cutaneously aseptic, should cover each natural orifice of the body with an antiseptic mask, and, clothed in raiment scientifically pure, should pass into an atmosphere freed from germs by the air pump and by heat.

If the air was a negligible quantity—and if not absolutely it was very near it—it would be unfortunate that in cases of antiseptic failure the surgeon should be led to seek in unfavorable surroundings for a loophole of escape from self-blame, or to believe that he could not operate with perfect success save in a glass case or a crystal palace. Our ingenuity need not be directed to the air, which might be trusted to efficient ventilation, and the germicide action of the tissues. The skin, the instruments, the apparatus, were the true objects of our care.

Injuries of the Elbow-Joint.—Professor Bennett, of Dublin, then opened a discussion on this subject. Although such injuries were among the most common to which the limbs were liable, a good deal remained undefined and undetermined in their treatment and diagnosis. In the first place, the terminology of the parts affected was uncertain. Surgeons and pathologists on the one hand, and anatomists on the other, used different sets of terms for the points of bone about the joint, and surgeons were not agreed as to the use and meaning of those terms. One cause of difficulty in these cases was the rapid onset of swelling after the injury, which soon rendered diagnosis from external palpation almost impossible. Failure to recognize incomplete dislocation of both bones forward led to many cases of deformity and loss of usefulness. Then, again, the incompleteness of our knowledge of separation of the lower epiphysis of the humerus was to be regretted. As regarded swelling, the surgeon who saw the case after all swelling had subsided should take a charitable view of the mistakes of a colleague who had seen the patient only when swelling was at its height. There was in modern text-books a remarkable absence of references to incomplete dislocation of the forearm backward. Erichsen and Astley Cooper said that dislocation backward was easily recognized. This was true only of complete dislocation. The text-books in this respect misled surgeons. Incomplete dislocation was as frequent as complete. It was difficult to understand different authors' statements as to separation of the inferior epiphysis of the humerus, owing to the confusion of terms. In this injury two tumors would be felt, situated on the back of the elbow in a transverse line; but in dislocation backward of both bones, although there were still two tumors (formed by the olecranon and the head of the radius), these were situated in an oblique line, the inner one formed by the olecranon being the higher of the two. In compound separation of the epiphysis with protrusion of the end of the shaft, he agreed with Smith that the joint was not necessarily opened, and often it escaped. The speaker showed a cast from a case in which free suppuration occurred, yet the elbow-joint escaped. This was a very puzzling circumstance, as the synovial membrane extended above the epiphyseal line. He believed the explanation was that the shaft of the bone was pulled out of the end of its periosteal covering, as a finger was withdrawn from a glove, and that the periosteum was torn above the synovial attachment. The proper title for such an injury would be displacement of the diaphysis from its periosteal sheath. One saw exceptions to this in practice, in which the joint was opened, but they were not common and in experiments on the cadaver the same occurred. The speaker's views were illustrated by diagrams and by specimens from the cadaver, in which this injury had been artificially produced.

Dr. Roberts, of Philadelphia, said that he had found that ankylosis after fractures into the elbow-joint was due to imperfect reduction and fixation of the fragments. The consequent alteration in the shape of the articulating surfaces constituted a mechanical obstacle to mobility. After severe fractures mobility was promptly regained when the movements of the olecranon and radius on the humerus were not obstructed by bony deposits. Hemorrhagic effusions into the joint and adhesions were relatively unimportant as causes of ankylosis. The conservation of the normal angle between the lower end of the humerus and the ulna was of importance, because if this was much altered there was a loss of carrying-power. This "gunstock" deformity was caused by displacement of one condyle, causing valgus or varus of the part, just as in Ogston's operation for knockknee the condyle was slid upward and the angle between thigh and leg altered. However, in the elbow fortunately slight alterations of this angle did not affect the usefulness of the limb, but it was the surgeon's duty to restore anatomical symmetry as far as possible as well as usefulness. The method that he had found most effective and now generally employed was that of fixing the fragments with long nickelled steel nails. Occasionally deformity and limitation of movement were due not to imperfect reduction, but to imperfect fixation of the reduced fragments, so that they slipped out of position again. Nailing prevented this. He used special steel nails with a head, to which a handle fitted. With this handle the nail was thrust through the skin and into the bone; the handle was then removed and the nail driven home by means of a hammer. Meanwhile the parts were held accurately in position by an assistant. Common wire nails would do in an emergency, but they were not sharp enough and not tempered properly. Skiagraphs were most important to determine position of fragments and the direction in which the nails should be driven. The speaker showed skiagraphs of several cases after nailing, three long nails right across the joint in different directions being used in a severe case. In cases of doubtful nature an exploratory incision was advisable, and should be much oftener practised than was general. The best incision was one on the anterior outer aspect of the joint, turning up a flap of the biceps and supinator longus. The not quite fully extended position was that in which he generally put up his cases. In cases of stiffness and uselessness after fracture, he recommended refracture and replacement.

Professor Chiene said that there were three positions in which we could treat injuries of the elbow-joint. He used them all. When for any reason the recumbent position was necessary, he used the extended position with weight-and-pulley extension of the hand and forearm. In fractured olecranon with displacement of the fragment, he used the same position with elastic traction on a splint, but in fractured olecranon without displacement he put the forearm in a sling. All other cases he treated in the fully flexed position, using no pad in front of the elbow, but only a layer of lint to keep skin from touching skin. In this position the stretched triceps acted as a splint. In some cases also he bandaged the forearm to the chest, which thus acted as a splint, keeping skin from directly touching skin. Massage after one week, movement after ten days in all cases.

Mr. T. Bryant agreed with Professor Bennett's explanation of the escape of the joint in many cases of compound separation of the epiphysis of the humerus. In this injury, when not compound, effusion took place between the bone and the periosteum and made clear what had happened. He thought there was no need to remove the end of the shaft in the compound injury. The extended position was the best for examination of the elbow; the bony points and their relative situations could be best made out in that position. In a large number of cases the extended position was the best for treatment. In general, he endorsed Mr. Chiene's remarks.

Dr. Kennedy Dalziel said that fractures into the elbow were caused generally by falls on the outstretched hand. Such a fall produced either a Colles' fracture, a fracture or dislocation at the elbow, or an injury of the shoulder, according to the direction of the force and other circumstances. The force of the fall was transmitted upward and outward from the inner side of the capitellum through the lower end of the humerus, and fracture occurred in this line. Commonly the fragment was displaced upward and rotated, as shown by skiagraphs, so that the capitellar surface came to be applied to the fractured surface of the hu-

merus. There might be excessive formation of bone with resulting ankylosis, or there might be non-union. In the latter cases the disproportionate growth of the healthy inner condyle caused displacement of the forearm outward, and gunstock deformity followed. One-third of the cases of fracture at the elbow-joint in young subjects were of this nature. It was not displacement of the epiphysis, but a true fracture, and occurred only before puberty. Nailing he believed to be a correct method of treatment. He had wired the fragment, but this involved leaving a foreign body in the joint, which was not advisable.

Mr. C. B. Keetley could not agree with Professor Bennett as to cause of non-suppuration in compound dislocation of the epiphysis. He thought it scarcely possible for the periosteum to protect the joint in the manner suggested. A good deal would depend on when infection occurred. If, as he thought, this was generally due to some carelessness of a house surgeon or dresser a day or two after injury, then the joint cavity might already be shut off by adhesions. It was important to have a free exit for pus. It was remarkable how joints seemed to protect themselves. He quite agreed with Dr. Roberts that displaced bone was a great cause of ankylosis, but he disagreed with him as to the need of nailing. The objections offered to the use of wire he had never found valid in practice. Fragments were seldom completely detached from soft parts, and, moreover, the irregularities of the fractured surface would keep the fragments in place when once reduced. He would state it as an axiom that all fragments should be cut down upon at once and wired. In dislocation, if the head of the radius could not be reduced it should be removed. In a case in point, that of a boy of fourteen years, there was fracture of the external condyle. He cut down on it and found the detached condyle turned upside down and inside out, with the fractured surface toward the skin. He wired it with excellent result. Obviously no other treatment but exploration could have corrected this properly. Splints, massage, and passive exercises would all have been useless. He did not think the latter means of much value in any case. Patients would not submit to passive movement when it hurt them, but if the displacement was corrected they might be trusted to exercise the joint of their own accord. The head of the radius was often thought to be the cause of obstruction, but it was very easy to be mistaken. He related a case in point, in which the olecranon was found to be in fault instead, and a wedge was removed from it.

Mr. Jordan Lloyd said that fractures were often mistaken for dislocations. He believed that dislocations of the elbow were very rare. The majority of cases so-called were cases of cleavage fracture of the lower end of the humerus, usually caused by falls on the elbow. Fracture of the olecranon in the young was extremely rare. At ages under twenty-five the humerus broke instead. He explained by means of a diagram the manner in which the olecranon acted as a wedge and split the humerus. The direction of the force either outward or inward as well as upward determined which condyle suffered most. These injuries were often overlooked, because in doubtful cases examination under anæsthesia was not regularly resorted to or the *x*-rays were not used. Often we must defer diagnosis until swelling had gone. He deprecated haste and did not think nailing was to be recommended, partly because even the best of us were not absolutely certain of asepsis, and because excellent results could be obtained without nails. He thought it would be most unfortunate if this meeting sanctioned the idea that nailing should be the routine treatment. Mr. Chiene's plan of using the body as a splint was an excellent one. The speaker had also got good results by treatment in the extended position. Stiffness was often caused by passive motion. He did not believe in its usefulness. Far more harm was done by it than by too long rest, which allowed complete consolidation. He had seen the elbow immobilized for six weeks or more, with excellent results. There was a form of fracture of the olecranon in the adult, due to a fall on it with dislocation, which was difficult to reduce. He had already described this injury, which consisted of a narrowing of the sigmoid notch caused by incomplete fracture with crushing together of part of the joint surface of the process, the periosteum acting as a hinge. For this injury operation was needed to restore the sigmoid cavity.

Professor Bennett, in reply, said that immediate diagnosis was important. He deprecated the general use of nails and screws.

The President said that the difficulty of reducing and controlling small fragments rendered treatment often unsatisfactory. The position in which the fragments were easiest put and kept right was the most useful in treatment. He was astonished that massage had not been mentioned. He believed it to be most valuable in treatment, provided that the fragments were secured in position. Passive motion was useful if correctly applied after an interval, but it must be gently and discreetly used. By passive motion he meant flexing the joint as far as possible once in the morning and extension once in the evening; no more.

Intestinal Obstruction.—Professor Kocher, of Berne, then read a paper on intestinal obstruction. Out of 77 cases 26 were malignant, of which 24 were operated on, mostly by extensive resection. In 20 the patients were still alive. Localized tuberculosis of the gut was somewhat common in Switzerland. Of 90 cases of this he had operated in 18 cases by resection of the whole diseased part. In 16 the patients had recovered and 2 had died. He had operated on 6 cases of intussusception by resection of all the folds of gut involved. All the patients recovered, and in one only a fistula remained. Every case of obstruction should be submitted to the surgeon at once, that he might decide as to whether operation was needed, early operation being most important; but the surgeon should employ every means in his power besides operation, and one of the most valuable of these was consultation with a good physician.

Œsophagotomy.—Mr. Thelwall Thomas reported three cases of œsophagotomy for false teeth in the œsophagus. In the first case the patient died of tracheitis and laryngitis and heart failure, due, he believed, to frequent attempts with much force to remove the plate before the operation. The operation in this case presented no difficulties or drawbacks. The two other cases did well, he believed because there had been no violent attempts under chloroform to remove the plate. No such attempts ought to be made, but if the foreign body could not be moved by gentle traction œsophagotomy should be at once performed. He used a continuous suture to the gullet and left a glass drainage tube in the wound down to the gullet. To locate the plate a metal-ended probang should be used. A clean cut into the œsophagus should be made, large enough easily to extract the plate. The suture was similar to that usually employed in suprapubic cystotomy. He used a feeding-tube only if it was found that the mucous membrane had been lacerated.

Hepatectomy.—Mr. Mayo Robson, of Leeds, reported three cases of partial hepatectomy for malignant disease. He had operated on thirty-five cases of malignant disease of the liver and biliary tract. In only three of these was complete removal of the disease possible. One patient died four hours afterward; the other two recovered well from the operation, but died of recurrence a few months later. In the incomplete

cases some of the patients were much benefited by the operation, and in some cases of cholecystotomy in which the disease was considered to be malignant the patients recovered permanently, being apparently cured by the incision. It was difficult to explain these cases except on the ground that the diagnosis was wrong and they were not malignant.

The first case was that of a woman, aged fifty-four. She had a swelling which for twelve years had been supposed to be a floating kidney, but had produced no symptoms. Three years ago she had attacks of pain and vomiting and slight yellowness of skin, not amounting to jaundice. Six weeks before operation she had an attack of acute pain in the tumor on stooping. The tumor became tender and quickly increased, until the right lobe extended to the groin. Diagnosis was made of a large gall bladder, possibly due to malignant disease. At the operation the gall bladder was found to be adherent to neighboring parts and full of a putty-like material and some stones. This was cleared out with a lithotomy scoop. The entrance to the cystic duct was almost occluded by the new growth and by a gall stone. A nodule was found on the under surface of the liver, and he determined to attempt to remove this as well as the gall bladder. The parietal and visceral peritoneum was sutured at the margins of the wound, and two sterilized knitting-needles were thrust through the liver beyond the diseased portion and a rubber drainage tube was firmly tied round them. Such slight bleeding as there was yielded to sponge pressure. The projecting portion of liver was cut away. There was no bleeding from the stump, which was fixed in the wound. The needles came away on the fourteenth and twenty-first days respectively, and the ligature was removed at the end of a month. The tumor weighed half a pound without the putty-like material, and was an epithelioma.

The second case was also that of a woman, aged fifty-two. The symptoms were very similar and the same putty-like material was found in the gall bladder, which was enormous. There was a nodule on the liver, and the right lobe was drawn up out of the wound and an elastic ligature applied, as before. The disease was apparently completely removed. She recovered slowly, and suffered from ague-like attacks. The needles and tourniquet separated in fourteen days with a free discharge of blood, after which she had no more attacks of ague. The portion removed was about as large as in the first case. The patient died of recurrence some months later.

The third case was one of a large tumor. The disease was very extensive; there were two hundred and forty gall stones and putty-like material and much matting of the parts. He separated adhesions to the duodenum, colon, pylorus, omentum, and parietes, and performed the same operation as in the other two cases. He would also have done a pylorectomy, but the patient was too feeble. She died the next day.

There was a marked history of stones in these cases, but other symptoms raised the question of malignancy. It appeared probable that the irritation of gall stones started the epithelioma, and if so, that was a reason for early operation for gall stones. Granted that such a condition as he had described was found, the question arose: Was it worth while to do partial hepatectomy? He could not yet answer that question. In two similar cases he closed the wound after removing only the gall bladder in one, and doing nothing except examine in the other. Both patients suffered much more than the first two and rapidly died. He was therefore inclined to try partial hepatectomy again. Of course his remarks applied only to localized cancer spreading from the gall bladder. Other operators on the liver had controlled hemorrhage by raising flaps from it and drawing them together over the wound on it, by stuffing the wound with sterilized gauze, or by the application of compressed air heated to 300° F., or by hot steam; but when feasible the elastic ligature was the best means. The following were the speaker's conclusions: (1) Statistics having shown the association of gall stones and cancer, it was desirable to operate for gall stones earlier than had hitherto been usual; (2) all tumors of the gall bladder should be operated on; (3) if these rules were followed cancer would be less frequent, and (4) when it occurred would be treated earlier; (5) exploratory operations were worth doing, even although malignancy was feared; (6) if the disease proved to be too extensive for complete removal, he would do nothing and close the wound.

Dr. Roberts, of Philadelphia, asked whether Mr. Mayo Robson used drainage in these cases.

Mr. Robson said that this was a large and important question. He did not use a drain in these three cases, because all the disease apparently was removed and there was no oozing. Otherwise he would have used a very large rubber tube containing a gauze drain and leading down into the right kidney pouch, which held nearly a pint, and if this was drained no tube was needed in the middle line, unless there was much effusion. He would not dream of removing the primary disease if there was a secondary nodule in the liver, but he found that the surface of the liver could be very thoroughly examined through the wound.

Enterectomy. Mr. Rawdor read a paper on two cases of enterectomy after strangulated hernia, for which Murphy's button was used. The first was that of a man aged thirty-eight. The hernia occurred suddenly and was strangulated. After the ring was divided it was easily reduced, but ruptured while this was being done. He resected the gut and used Murphy's button. The other case was similar. Both did well, and there was no shock in either.

Mr. J. P. Bush described cases of gastric ulcer with perforation on which he had operated. In the first case, thirty-six hours after symptoms of perforation there was no loss of hepatic dulness. The stomach was covered with lymph. He explored the lesser cavity of the peritoneum and found an ulcer on the under surface of the organ. He used three rows of sutures, satisfied himself that the stomach was watertight, carefully sponged out the abdomen around, and closed the wound. He preferred sponging to irrigation. The patient was collapsed for the first twenty-four hours, the respirations being only 8 or 9 a minute. She then steadily improved, but three or four weeks afterward, when on solid food, she rose from bed, fainted, and died immediately. Post mortem the ulcer was found to be healed, and only slight puckering marked its site. There was no suppuration and the lungs and pleuræ were normal. Some would say that this was a case of septic poisoning. He believed it was heart failure.

In the second case, eighteen hours after the attack he found all the classical symptoms. Food, such as plums, caraway seeds, etc., came out of the wound. The ulcer was in front of the stomach, where a hard mass was felt. He used four rows of sutures, sponged well, and put in two drainage tubes—one to the ulcer and the other to the back of the spleen, where a collection of lymph was found. Nothing was given for the first twenty-four hours, and only water for the second twenty-four hours. He believed these precautions were most important. Recovery was uninterrupted and the patient was now well.

He thought these cases showed that irrigation was not necessary. He believed that it did harm; how much, he could not tell. It might cause the peritoneum to lose part or all of its power of dealing with septic matter, and no amount of irrigation could asep-

ticize the peritoneum in these cases. Early operation was most important as influencing results. Mortality was about fifty per cent. in cases operated on within twelve hours, but rose to ninety per cent. if all cases after twenty-four hours were included. If operations were done from four to ten hours after attack, the mortality would be very much diminished. The first case showed that when the ulcer was on the posterior surface the symptom of resonance over the liver, on which stress was laid, was not present.

The President suggested that the question of duration should influence the choice of sponging or irrigation.

Several other speakers urged that complete cleansing of the peritoneum by sponging was not possible, and much more injury would be likely to be inflicted by it than by irrigation with unirritating fluids, such as sterile saline solution, which also had the advantage of diluting such irritating fluids as the gastric juice and the brandy which friends or bystanders almost invariably gave in these cases.

Empyema.—Mr. W. Menzies Hutton read a paper on the treatment of empyema. This was admittedly unsatisfactory at present, especially in adults. Cures were generally incomplete, so far as expansion of lung was concerned. The longer a case took to heal, the worse the ultimate result. In adults tapping alone rarely cured, but it was useful as a preliminary to operation, because with the pleura distended with pus and the lung collapsed the voluntary muscles of respiration were needed to keep the patient alive. Chloroform took away this help, and most alarming or even fatal respiratory failure might occur before the lung could be relieved. A preliminary tapping removed this danger. Incision should be made along the sixth rib in the midaxillary line, the part where the lung last expanded. If the opening was behind or in front of this, it would be blocked by the expanding lung before expansion was complete. When the pleura was opened the action of the lung was reversed—it collapsed with inspiration and expanded with expiration. This was largely produced by the action of the sound lung, which in inspiration drew air through the bronchus from the opposite one. To help expansion of lung we must provide for exit of pus, while preventing entrance of air. The speaker showed the apparatus that he had devised; it consisted of a flanged rubber tube with a glass tube externally, within which was an ordinary rubber teat with a slit in the end. After applying this he found expansion hastened, the rate of respiration falling fast toward normal. Expansion generally occurred in eight days. Marked improvement appeared in three days in all cases. How long after collapse of the lung improvement was possible with this appliance he did not know, but he had seen it after eight months. If when the patient coughed air escaped from the sinus, there was good hope of improvement. The tube was contraindicated only when there was an opening into a bronchus. The tube should be only long enough to go through the chest wall. A piece of gutta-percha tissue with a hole for the tube was placed under the flange; this adhered to the skin closely.

Prostatic Hypertrophy.—Dr. H. Nicholl read a paper on the treatment of chronic enlargement of the prostate. There was no doubt of the necessity of operative interference in many cases, whether palliative or radical. Drainage was enough in some cases and might prove curative. After referring to his previous publication in *The Lancet* of April, 1894, on prostatectomy, he briefly described his method, which consisted in the enucleation of the prostate through the perineum, aided by pressure of the fingers introduced into the bladder through a suprapubic cystotomy wound—the entire operation being performed without opening the base of the bladder or the urethra, these being defined and thus protected from injury by the fingers in the bladder and a bougie in the urethra. The advantages of the method were (1) avoidance of contamination of the wound by urine; (2) adequate removal; (3) less hemorrhage; (4) avoidance of risk of tearing out portions of the neck of the bladder or urethra, and its results. In May, 1894, Dr. Alexander had published, at the meeting of the American Genito-Urinary Association, an account of a method in every respect identical with the speaker's except in one detail, viz., that Dr. Alexander drained the bladder through the perineum in all cases, while Dr. Nicholl did so in only a small proportion of cases and in no case until several days after the prostatectomy. The few cases that he drained through the perineum were those of a pedunculated median lobe and cases in which cystitis persisted, despite draining and douching by the suprapubic opening. In 1895 castration or vasectomy came into fashion for enlarged prostate. He had tried the method, with varying results. Further observation was needed to enable us to come to a decision. Many cases improved astonishingly without operation. Cases in point were related. These cases would, of course, give good results with any operation. Cases should be observed a longer time than had been usual before publication, and in any statistics those cases in which castration was declined should be published and also those in which it had failed to give relief.

(*To be Continued.*)

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

MORE ECHOES FROM EDINBURGH—ROSS' DISCOVERY AS TO MALARIA—MISSIONS—TEMPERANCE—GRADUATION CEREMONY—MR. POWER.

London, August 5, 1898.

The most successful of all the sections was unquestionably the new one—tropical diseases. Not only from the tropics, but from all parts of the empire were gathered the members who had practised in various parts and were now in these islands. Not only so, but Americans and foreigners were attracted to this section, and the room where it was held was generally crowded by an enthusiastic assembly.

Dr. Manson, president, opened with an address. He was evidently suffering a good deal, and the next day was unable to be present. He is a victim to gout, and much sympathy was felt for him. The following day he was able to be present and give a lucid account of the recent remarkable work done by Surgeon-Major Ross, I.M.S., in tracing the rôle of the mosquito in spreading malaria. You will remember how, three years ago, Dr. Manson put forward the hypothesis that the mosquito is the extracorporeal host of the plasmodium. Surg.-Maj. Ronald Ross has been working at this subject ever since; step by step his discoveries have been continued, and he has raised the hypothesis to the dignity of a theory. So much was known, and Dr. Manson's lecture was looked forward to with pleasure. But it came as somewhat of a surprise that he should be able to announce the very latest discovery which Ross has made, communicated by telegraph that morning. This seems to be the crowning of the edifice, and evoked the utmost enthusiasm.

A congratulatory telegram from the section was voted at once to be forwarded to Surgeon-Major Ross.

The garden party given by Prof. and Mrs. Bayley Balfour in the Botanic Gardens was rather spoiled by the weather, as it took place on the only wet day of the week, but the host and hostess did all that was possible to entertain their numerous guests, although the

gardens could not be enjoyed as if there had been sunshine.

Sir T. Grainger Stewart found time to preside at the formal opening of the Medical Missionary Loan Exhibition. Sir Grainger is the president of the Edinburgh Medical Missionary Society, and it can therefore be understood that he was ready to do his best for that as well as for the larger association. This Medical Missionary Society has done much good work, and for many years Edinburgh, through its influence, has been the chief centre for promoting medical missions. The work began sixty years ago, with men like Abercrombie, Alison, and Chalmers, and has been carried on with zeal to the present time. One of the original members of the society, Dr. Moir, was present on this occasion, and said the president of the College of Surgeons had asked him to express his (the president's) great regret at being unable to come.

Dr. F. I. Mackinnon, a missionary of the society, from Damascus, gave an interesting address on the difficulties of the work in Turkey and the evident determination of the Mohammedan power to stamp out opposition by the sword as ruthlessly as it had first established itself by the same method.

Mrs. Bishop also spoke in favor of medical missions, which she said she had seen in almost every part of Asia and elsewhere pioneering the way and removing prejudices by their beneficent ministrations and invaluable hospital work.

The temperance breakfast, given to the British Medical Association by the National Temperance League, is now looked forward to as an annual function of no little interest. Over one hundred ladies and gentlemen attended it at the Edinburgh meeting Professor Simpson presided, supported by Dr. Whyte and a number of colleagues and others. Dr. Simpson said most of them were teetotallers on the Pauline principle—for the sake of their medical brethren.

Dr. Sims Woodhead, president of the Medical Temperance Association, said that though many, as Professor Simpson had remarked, abstained for the sake of others, they also knew it was for their own benefit, and though this might sound selfish it certainly entered into the calculations. He repudiated a statement attributed to him, that "alcohol as a drug is of no use." No medical man in his senses would say that. What he had said was: "If alcohol is a drug, it should be prescribed as a drug."

Dr. Clouston spoke of the effect of alcohol on the mental power, and said its first action in ninety-nine cases out of one hundred was to injure the mental working of the brain.

Dr. Ridge reported that there were four hundred and sixty or four hundred and seventy members of the Medical Temperance Association and some four hundred student associates.

Dr. Connel said he agreed with a recent declaration of Dr. Wilson that flogging was the thing for early drunkards. The guests separated after a very pleasant meeting.

There was an immense audience at the graduation ceremonial on Saturday. It was estimated that more than three thousand persons were present in the McEwan Hall the first time it has been used for medical graduation. The dignitaries of the university were there, and Sir William Muir, vice-chancellor, presided. The honorary degree of LL.D. was first conferred on a number of distinguished medical men. Some of them had already received this honor from other universities, and could therefore do very well without this. Then followed the conferring of the ordinary degrees on those who had passed for them.

Mr. Power, the eminent ophthalmologist, has met with a great sorrow. His daughter and granddaughter were washed off the pier at Whitby by a great wave and drowned, in spite of his desperate effort to save them. Every one feels the deepest sympathy with him in this sudden bereavement.

OUR BERLIN LETTER.

(From our Special Correspondent.)

WHY DOES THE HEART BEAT?—INFUSORIA IN CANCER OF THE STOMACH—TABES DORSALIS AND SYPHILIS—KOCH AND THE BUBONIC PLAGUE.

BERLIN, July 31, 1898.

RECENTLY at the Verein für innere Medicin quite a lively discussion was provoked by a paper of v. Leyden, on the innervation of the heart muscle. v. Leyden first presented a brief historical sketch of those discoveries which have thrown light upon the still unsolved puzzle, Why is it that the heart continues to beat uninterruptedly? The discoveries of the influence of the pneumogastric, the accelerator and inhibitory nerves, the cardiac ganglia, etc., tended to support the theory that the regulation of the heart's activity was effected through motor nerves whose centres are in the ganglia of the heart. Now, however, it has been observed that a heart which has no ganglia can beat, and this has led to the conclusion that this organ can continue its functions entirely independent of all nervous influence. This view is based upon the following observations: 1. The heart of the embryo pulsates long before any nerves at all can be shown to be present in it. 2. We have certain unstriped muscles in the body which are capable of contracting, and in which neither nerve fibres nor ganglia can be demonstrated; such, for example, is the muscular tissue of the ureter. 3. According to the latest researches of the younger His, the cardiac nerves come from the sympathetic, while the cardiac ganglia belong to the spinal system; and, these being purely sensory, the nerves of the heart must be so too, and are in consequence incapable of giving origin to motor impulses. 4. End bulbs have never been demonstrated in the heart, although it is established that all the muscle cells are surrounded by nerves. v. Leyden named especially Engelmann and His as defenders of this new theory, and Waldeyer and Kronecker as strong opponents. He said he was incompetent to decide the question. During the discussion, A. Fränkel observed that the new theory does not explain why peripheral irritation of the pneumogastric causes the heart to stop. Schwarz thought it possible that there may be certain connections between the heart and the ganglion cells in the embryo which our present methods cannot discover. Benda declared that the Engelmann theory rests upon as weak a foundation as the one which teaches the irritability of the striped muscles. No one denies the existence of the nerves of the heart; then what purpose do they serve? It is not probable that they are of a purely sensory nature, as claimed by His; for the spinal ganglia, from which the cardiac ganglia are derived, pass out from the medulla, which contains both sensory and motor fibres. The sympathetic cells in all likelihood act as true reflex centres, in that they receive sensory impressions and send out motor impulses. This idea of sensory and motor impressions and impulses passing alternately through the same nerve fibres is tenable, for it has long been known that double impressions pass along the same nerve fibres. No one present defended the theory of Engelmann.

Another recent theory, that of the parasitic nature of cancer, was again brought into discussion by Dr. Strube at a meeting of the Gesellschaft der Charité-Aerzte. He showed some infusoria which he found constantly in the gastric contents of a pa-

tient suffering from cancer of the stomach. There was no doubt at all that they had grown upon the carcinomatous mass. They were of an oval form, independently motile, and had three or four flagella attached to their anterior end. Some, however, appeared round and motionless; these could, by merely warming, be made to assume the oval shape and become motile. Classified according to their habits and mode of existence, they come under the head of flagellates, and belong to the genus Trichomonas, such as have been often observed in the intestinal contents at autopsies, and *intra vitam* in diarrhœal discharges. Strube held that any direct etiological connection between these parasites and carcinoma is out of the question, and his conclusion was supported by the report of Burghart, who observed them once in the diarrhœal stool of a phthisical patient and in the sputum from a case of abscess of the lung.

Virchow's words during the discussion of Silex's paper upon "Optic Atrophy in Tabes Dorsalis," read before the Berliner medicinische Gesellschaft, go to show what a vast difference there is between theory and fact. The grand old teacher hailed the syphilis enthusiasts with a vigorous *quos ego*. He could no longer observe in silence, he remarked, how the supporters of the syphilis theory in the etiology of tabes dorsalis gained one victory after the other, simply because no vigorous defence was any longer offered them. He saw the same story as that of aneurism repeating itself. At first it was mildly suggested; now a grand array of authorities openly support and defend the theory of a connection between tabes and syphilis. The same remarks would apply to general paresis. But such procedures are not scientific, he said, for, while it is possible that syphilis may be the cause of these affections, no actual proof has yet been brought forward. One condition which occurs so often in connection with constitutional syphilis, viz., amyloid degeneration, is almost never found in tabes. Of course the corpora amylacea are not here to be taken into consideration, for they are to be found in the spinal cord of all old persons. Virchow warned against too hasty conclusions. He was not opposed to a rational inunction treatment, which could do no harm. At present only the statements of the patients themselves support the theory of an etiological connection between syphilis and tabes; but Virchow did not regard it as impossible that real proofs might some time be found.

Another medical man of Berlin, Robert Koch, delivered an address before the Deutsche Gesellschaft für öffentliche Gesundheitspflege on his investigations concerning the "Spread of the Bubonic Plague." Koch called especial attention to the important part played by the rat, which is much more susceptible than man to the poison of the plague. He mentioned four plague centres where the disease never dies out; viz., Mesopotamia, the high mountainous regions of Thibet, the coast of Arabia, and a heretofore unknown spot in Central Africa. Koch was of the opinion that we need not be alarmed, for a study of the places and conditions in which the plague thrives teaches us that the latter can make no stand against our advanced civilization and culture. Already it has crept into the farthermost corners, and we may hope that the spread of civilization will drive it out of these corners even.

To Give to Cotton Thread the Smoothness of Silk.—Remove the fat with soda solution, wash in an abundance of water, dry and dip in colloidin (concentrated collodion) 5; alcohol, 50; sulphuric ether, 50. Sublimate (1–1,000) may be added.—GOUBAROFF.

THE CARE OF THE WOUNDED AT SANTIAGO.

To the Editor of the Medical Record.

Sir: Returning from Cuba a few days ago on board the *Segurança* in charge of sick soldiers, one of the first things to meet my eyes was a reproduction in the daily papers of an editorial from your columns attacking the medical department of the army. On this point I wish to say only a few words at present, and I hope to give more in detail later. I was at Siboney from the 27th of June until the 25th of July, and I think myself quite competent to speak concerning the treatment of the sick and wounded at that place, where the general hospital was located. Concerning the surgical skill of the operators at Siboney there can be no question. In the hands of such men as Le Garde, Nancrede, Parker, Fauntleroy, Ireland, and medical officers from our fleet, the wounded soldier had the best scientific treatment. As to general care of the wounded, I may say that, while this is my first experience in taking care of those wounded in battle, I do not believe that there ever was before an engagement as bloody and as prolonged as that of Santiago in which the wounded were so well cared for. Every soldier carried in his knapsack a first-aid package, and all had been trained more or less thoroughly in their application. Personally I distributed about twelve hundred of these, and quite a number of these same bandages came back to me on wounded soldiers. I can from personal knowledge testify to the fact that many lives were saved by their use. So far as I know, this first-aid package has not been so extensively used in any other war. For many wounds these dressings, applied by comrades on the fighting-line, were all that was needed until the injured man reached the hospital.

The transportation from the front to the hospital at Siboney was not what we wished. There were only a few ambulances, and most of the wounded were brought to the hospital in army wagons. Many men suffered severely during this ride. The intense heat, the cramped position of many in the crowded wagon, and the jolting of the heavy vehicle over the rough road, all combined to give discomfort. Why were there not more ambulances? They were left at Tampa or were not unloaded on the Cuban coast. The medical department was not, however, responsible for this. To provide transportation is the duty of the quartermaster's department, but I do not know that any one can be censured very greatly for the failure to provide a sufficient number of ambulances. It is well known that the transports were crowded, and the landing of animals and vehicles both at Daiquiri and at Siboney was a difficult and dangerous task. I was on a transport which approached the coast as nearly as the captain dared. When the anchor was dropped from the prow, the line went down forty fathoms, while the depth at the stern was only seven fathoms and not fifty yards away were the sharp rocks of a precipitous coast. It can be readily imagined that with high waves dashing against the ship such a position might quickly become perilous. Horses and mules had to be pushed into the water, and, while most of them swam ashore, some were drowned. Even the landing of men was not easy. We had to drop as best we could into row-boats, which at the time were being tossed up and down by the waves, and when the boats neared the shore they often became unmanageable and were filled with water. Like many others, I waded ashore. There are many, especially among those who stayed at home, who are ready to tell us of the great mistakes made in this campaign. They say that Shafter should have taken more time. He should have encamped on the shore and built good docks, so that everything on

board the transports could have been landed. He should have built good roads all the way from the landing-place to Santiago. He should have brought up heavy artillery. Soldiers should not have been allowed to charge fortifications and batteries without artillery support. These are some of the many things that we are told should have been done. I have no claim to military knowledge, and General Shafter did not consult me; but as a medical man I wish to say that in my opinion had half these things been attempted the Spanish flag would be to-day floating over Santiago and the American army would have been fortunate had one-half of it escaped both sickness and Spanish bullets. Enervated by heat and disease, the army could not have made two weeks later the glorious charge it did make on San Juan. Dock-building on Cuba's coast and road-making in its mountain passes at this time of the year would, in my opinion, have caused more deaths than were due to the great fight at El Caney. This is not altogether a matter of medical opinion. It is a fact that the regiment left at Siboney and between that place and Aguadores furnished the first case of yellow fever and suffered most severely from that disease. It is well known to students of epidemiology that yellow fever is most frequent and most virulent immediately along the shore. The fighting was practically over by the evening of July 3. On the 5th I saw the first case of yellow fever. Before that day had passed we had three or four more cases, the next day about thirty, and the next more than fifty; and all of these were among those working on the coast.

On the arrival of the wagons loaded with the wounded at the hospital at Siboney the men were placed as best we could. At the request of Dr. Le Garde, I superintended the placing of several trains of the wounded. It is true that there was not always a cot ready for the reception of each man, and those least seriously wounded had to lie on the ground for some hours; but we had blankets and made them as comfortable as possible. No one was neglected. Every one who could do so lent a helping hand. At least one newspaper reporter gave his time for days to feeding these men. I think that he furnished the food from his stores and prepared it himself. That it was good I can testify, because he brought me a cup of his broth late at night on more than one occasion. That no one was neglected I know, because on Dr. Le Garde's order I went with an orderly carrying a hypodermic syringe and tablets of morphine and strychnine late every night through all the tents, and ordered special attendants for those in need. Drs. Fauntleroy, Ireland, and others went through the tents more frequently and were untiring in their labors.

As to the lack of dressings and other supplies, I wish to say that, so far as I know, the charge on this score is as unfounded as is the general statement that the wounded were neglected. I never failed to find suitable and sufficient material for dressing wounds. We exhausted certain things. We ran out of iodoform gauze, but there was plenty of bichloride gauze. The Red Cross sent up a big box of dressing, for which Dr. Le Garde gave thanks in his big-hearted way so warmly that one of the officers of this society now tries to make it appear that without this aid the wounded soldier at Siboney could not have had his broken limb bound up. The absurdity of this is evident from the fact that medical officers from the *New York*, *Iowa*, and other ships of our fleet came over daily and worked at the operating-tables. Will any one claim that there were no surgical dressings on these ships?

VICTOR C. VAUGHAN, M.D.

Yellow Fever is said to prevail at San Juan, Porto Rico, but the report lacks official confirmation.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending August 20, 1898:

	Cases.	Deaths.
Tuberculosis	166	132
Typhoid fever	94	18
Scarlet fever	64	5
Measles	59	6
Diphtheria	98	13
Chicken-pox	6	0

Alcohol and the Russian Death Rate.—An official inquiry into the comparatively larger increase in the Tartar population of the city and government of Kazan has, according to the *Kamsko Volshki Krai*, brought out some remarkable facts as to the effect of alcoholic indulgence on the death rate. The Kazan Tartars, numbering about 640,000, have a rate of mortality of only 21 in 1,000, while the mortality among the Russians is 40 in 1,000. The general conditions among orthodox Russians and Mohammedan Tartars are practically the same, except in so far as personal habits are concerned. The medical investigation leaves no room for doubt that the lesser mortality of the Mohammedan Tartars is directly due to their abstinence from spirituous liquors, in which the Russians indulge freely.

Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the Marine Hospital service during the week ending August 20, 1898:

SMALL-POX—UNITED STATES.

		Cases.	Deaths.
Colorado, Cascade Cañon		7	
District of Columbia, Washington	August 13th	1	

SMALL-POX—FOREIGN.

India, Madras	July 2d to 8th	..	1
Japan, Osaka Fu	June 27th to July 27th	1	
Tokyo Fu	June 27th to July 27th	3	
Aichi Ken	June 27th to July 27th	4	
Akita Ken	June 27th to July 27th	4	2
Awomori Ken	June 27th to July 27th	55	11
Chiba Ken	June 27th to July 27th	1	
Fukushima Ken	June 27th to July 27th	2	2
Hiogo Ken	June 27th to July 27th	6	1
Iwate Ken	June 27th to July 27th	4	2
Kanagawa Ken	June 27th to July 27th	1	
Miyagi Ken	June 27th to July 27th	3	
Aita Ken	June 27th to July 27th	2	
Yamagata	June 27th to July 27th	4	1
The Hokkaido	June 27th to July 27th	11	1
Russia, Odessa	July 16th to 23d	2	2
St. Petersburg	July 16th to 23d	4	3
Warsaw	July 9th to 16th	..	7
Warsaw	July 16th to 23d	..	15
Warsaw	July 23d to 30th	..	5
Venezuela, Caracas	July 25th	150	
La Victoria	July 25th	Very large number.	
Valencia		1,000	

YELLOW FEVER—FOREIGN.

Costa Rica, Port Limon	July 14th to August 4th	..	2
Mexico, Monterey	August 1st	Reported present.	

YELLOW FEVER—UNITED STATES.

Florida, Key West	August 16th	3*	
Pensacola	August 14th	1†	
Louisiana, Franklin		1‡	
On transport ships arriving at Camp Wikoff, Long Island:			
S.S. *St. Louis*	August 14th	1§	1¶
S.S. *La Grande Duchesse*	August 15th	25 suspects.	

* At marine barracks. † On British S.S. *Nicaraguan* from Tampico, Mex. ‡ Origin believed to be the pulling down of an old house infected last year. § Developed on 16th. No cases on arrival. ¶ *En route.*

CHOLERA—FOREIGN.

India, Bombay	July 21st to 28th	..	2
Bombay	July 5th to 12th	..	3
Calcutta	June 26th to July 2d	..	9
Madras	August 12th	Epidemic.	
Japan, Tokyo Fu	June 27th to July 27th	15	10
Fukuoko Ken	June 27th to July 27th	1	
Johikaw Ken	June 27th to July 27th	2	2
Yamagata	June 27th to July 27th	1	

PLAGUE.

China, Amoy	June 8th	Epidemic.*
Egypt, Alexandria		1†

* About twenty reported daily. Plague epidemic since May 8th in three cities distant thirty miles from Amoy. † British s.s. *Carthage*, arrived July 12th from Bombay and Aden, reported one case of plague put ashore in hospital at Aden; vessel disinfected.

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Original Articles.

EXPERIMENTAL RESEARCHES ON THE EFFECTS OF DIFFERENT ANÆSTHETICS.

BY W. H. THOMSON, M.D., LL.D.,
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AND
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NEW YORK.

DURING the prosecution of experimental researches instituted by us on the effects of serum and of antitoxin injections upon the circulation of the kidneys, we soon were made aware that the employment of sulphuric ether as an anæsthetic produced a specific effect of its own upon the renal circulation, which had to be taken account of before any trustworthy conclusions could be deduced as regards the particular effects of the administration of antitoxins. This action of ether was so often and so uniformly demonstrated as a derangement of the circulation of the kidneys themselves,

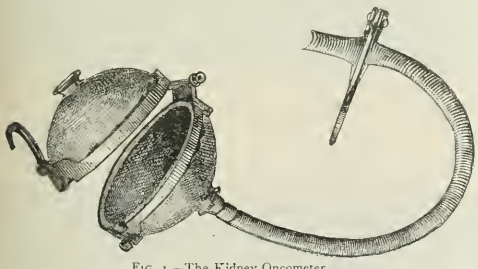


FIG. 1.—The Kidney Oncometer.

without a corresponding disturbance of the general circulation as indicated by the blood pressure in the carotids, that we concluded to institute a similar series of experiments upon the effects of other anæsthetics upon the kidneys. This subject is of such interest in connection with the relative effects of different anæsthetics upon different physiological functions that a brief account of the manner in which the experiments were conducted is herewith appended. We are indebted to the courtesy of Prof. John G. Curtis for the free use of the great facilities of the physiological laboratory of the College of Physicians and Surgeons for the experiments, the operations for which were performed by Dr. Kemp on dogs, along with check experiments upon rabbits.

The means by which the condition of the circulation of the kidney can be accurately determined is by an instrument first devised by Prof. C. R. Roy, of London, and called the kidney oncometer. Besides its extensive vasomotor supply, the kidney is so vascular that it has been estimated by Landergren and Tiegerstedt that when it is in full functional activity an amount of blood equal to the weight of the organ itself flows through it in a minute's time. Hence it is evident that great changes in its bulk would occur according to the state of its circulation, and this is so plainly demonstrated by the oncometer that even the rhythmical variations of blood pressure in the organ caused by the movements of respiration are recorded by it. As shown in the accompanying cut, the oncometer is a small, bivalved, kidney-shaped, metal box, hinged at the back, with a clasp in front, while a grooved notch at the centre of the rims of the valves prevents pressure on the vessels and nerves of the pedicle of the kidney when the organ is inclosed in the oncometer (Fig. 1).

Lying loosely upon the inner surface of the valves, but fastened to their rims by detachable metal bands, are two pieces of thin soft rubber, which when filled so allow a layer of water to be interposed between them and the metal walls of the box that when the two halves are shut down upon the inclosed kidney it rests upon a perfect water pad. A short metal tube in the centre of the upper valve, to which is attached a piece of soft-rubber tubing, allows the water in that lid of the oncometer to rise and fall in the tube according to the expansion and contraction of the inclosed kidney. This movement in the water column is communicated to a column of air farther on in the tubing, which in turn communicates with the air in a closed drum, or tambour, on the upper surface of whose diaphragm rests the long lever of the registering pen, which thus records the oncometric tracing upon a moving sheet of smoked paper. The use of water as the liquid in the oncometer pad is a great advantage over that of oil employed in Roy's instrument, both for convenience and for simplicity, and this improvement we owe to Mr. J. M. Hoyt, the practical electrician and machinist in charge at the physiological laboratory of the College of Physicians and Surgeons.

We give here (Fig. 2) oncometric tracings which illustrate the difference between normal and high-pressure curves. The lower tracing represents the lines made by a normal kidney, while the upper one shows the marked contrast when the renal vein is tied, for the consequent great venous congestion and swelling of the kidney in the box forced the water up the tubing so high that the resulting pressure in the air column threatened to burst the drum and raised the line of the tracings above the edge of the smoked paper. As in dogs the kidneys vary greatly in bulk according to the size of the animal, certain details are secured in Hoyt's apparatus for regulating the amount of water within the oncometer so as to make the pads perfectly adjustable to the kidney.

The secretion of urine was observed as regards rate, quantity, and quality during the experiments, by tying a small glass cannula in the ureter leading from the kidney which was not inclosed in the oncometer, so as to obviate the risk of the secretion being affected by the manipulation necessary to include the kidney in the box. We think that this requisite precaution has not been observed by some experimenters. The drops flowing from the ureter impinged upon a delicate lever with an oblique spatula-shaped extremity, the fulcrum of the lever being the drum of a tambour which communicated the stroke of the falling drops through an air column in a rubber tube to the drum of a second tambour, on which a lever pen registered every drop by a mark resembling an inverted V along a line on the smoked paper above the kidney-pulse

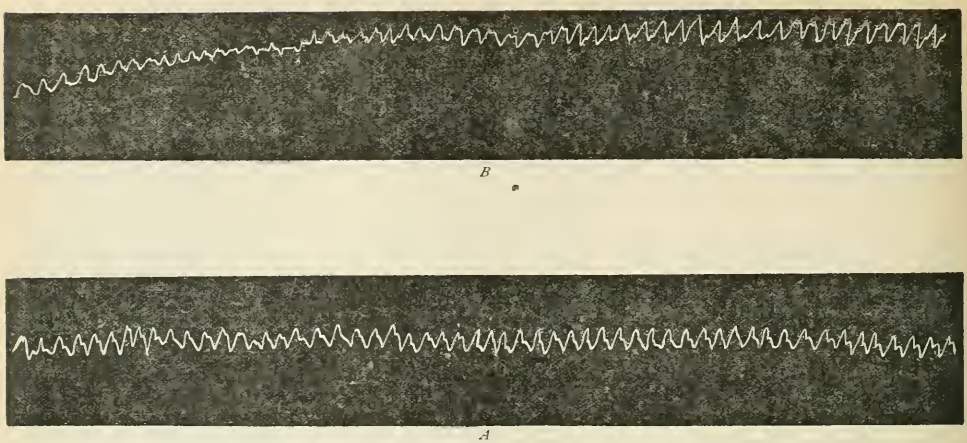


FIG. 2.—Normal and High-Pressure Oncometric Curves. *A*, Normal kidney tracing; *B*, tracing after ligation of the renal vein.

tracing. Meantime the drops of urine falling on the spatula end of the first lever flowed off into a cup, where they were collected for chemical and microscopical examination.

For the purpose of a constant comparison between the blood pressure in the kidney and the general blood pressure, a small glass cannula was introduced and tied in the right carotid, and to the cannula was attached a piece of rubber tubing, both it and the cannula being filled with a soda solution to prevent blood clotting. The rubber tube was then attached to a flexible lead tube, which was connected with a Ludwig's mercurial manometer, so that every pulsation in the carotid was communicated through the soda solution to the mercury in the manometer. A float on the mercury in the manometer carried a fountain-pen attachment, which registered the carotid pulsations with ink on the paper of the revolving, or Ludwig's kymograph. The normal height of the blood pressure was first carefully noted in each dog. This height varied from one hundred and twenty-five to one hundred and fifty millimetres, and, the standard height in each animal being thus noted, variations from this could then be readily observed.

To insure uniformity in the administration of the anæsthetic, as well as to have ready recourse to artificial respiration when needed, a preliminary tracheotomy was performed in all cases. The tracheotomy tube was tied in firmly, and to it a piece of soft-rubber tubing was attached, and the anæsthetic was administered through this tube.

In all such experiments, and notably in regard to the action of anæsthetics, a chief indication is to avoid delay as much as possible, for prolonged anæsthesia with any agent induces modifications from the first effect. In these operations it was found possible to complete all the incisions and make the connections between the different parts of the apparatus, with proper

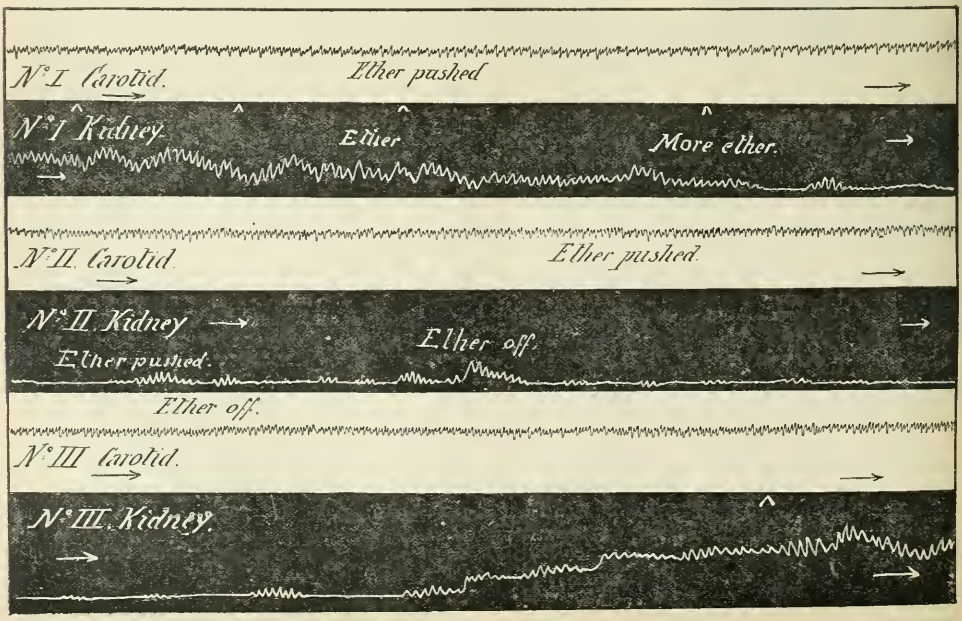


FIG. 3.—Oncometric and Carotid Tracings Following the Administration of Ether.

regulation and starting of the tracings, in twenty minutes.

Effects of Ether.—The results from the administration of ether obtained from experiments on ten dogs were remarkably uniform, and are well illustrated in the accompanying cut (Fig. 3).

Carotid tracings. The effect of ether on the general blood pressure as shown by the carotid tracings is to raise the pressure from the beginning, even under mild anæsthesia. When the ether is pushed the carotid tracings rise again slightly. When the ether is removed there is a moderate fall.

Kidney tracings. Under moderate anæsthesia there is at first a slight rise of the tracings from the base line, corresponding to the carotid tracings, but as the ether is pushed a marked contrast from the simultaneous carotid tracing is noted by a great fall in the oncometric curve, down to the base line and even below it. If the anæsthetic is thus kept up, the waves grow progressively shorter or even disappear for a few seconds. If the ether is then suspended it takes from thirty seconds to two minutes for the kidney to recover, when the tracing-line begins to rise again, to be again depressed if ether is readministered. This effect was noted over and over again, and from its uniform contrast with the corresponding carotid tracing it shows that this effect upon the kidneys is specific, and, what is more, this specific effect can be separately noted when ether is mixed with other anæsthetics.

The renal secretion under ether, determined as above described, was first an early diminution in the number of drops from the cannula in the ureter. The secretion diminished progressively as the oncometric curve dropped toward the base line, until finally, under free and continuous etherization, a complete suppression occurred. These are shown in the figure, "inverted Vs," on the upper line—three drops before ether was pushed, with only two drops in about four times the intervals afterward, and only one drop toward the end of the tracing. Albumin appeared early even under moderate anæsthesia. This increased under deep narcosis, until just before suppression it amounted to about sixty per cent. in volume.

Chloroform.—The experiments with chloroform were performed on six dogs.

Carotid tracings. As seen in Fig. 4, there is an evanescent rise, lasting only two or three seconds, when but a slight amount of chloroform is administered, soon followed by a fall of pressure. As the chloroform is pushed there is no initial rise, but the fall becomes more marked. As soon as the chloroform is suspended the pressure rises again. There can be no question that the fall is due to the depressing effect of chloroform upon the heart.

Kidney tracings. In contrast with ether, the kidney tracings closely correspond with the simultaneous carotid tracings. The kidney tracings become shorter as they approach the base line, but they do not become abolished, nor do they ever fall to the base line as with ether, but simply remain parallel to the record of the general circulation.

The renal secretion remains copious in amount, and begins to diminish only as the general circulation becomes much depressed, the urine continuing to flow nearly to the time of death.

Albumin appeared only after prolonged narcosis, and then in but small amount, though the general circulation had become dangerously lowered.

A.C.E. Mixture.—The anæsthetic known as the A.C.E. mixture is composed of alcohol, one part (by volume); chloroform, two parts; and sulphuric ether, three parts. This was tried by us on four dogs.

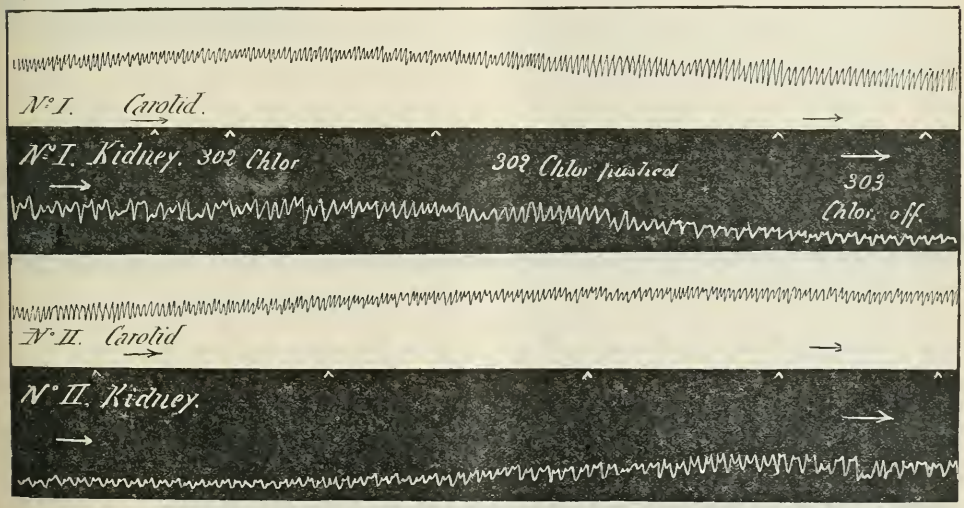


Fig. 4.—Oncometric and Carotid Tracings Following the Administration of Chloroform.

Carotid tracings. If administered by the open method, with ninety-five per cent. air, the carotid tracings are wholly similar to those of ether. If semiclosed or closed, a very pronounced chloroform effect. This is clearly shown in the carotid tracings of Fig. 5, in a dog in which it was administered by the semiclosed method and but a moderate amount used, for only a few seconds.

Kidney tracings. If this anæsthetic is administered by the open method, as above noted, ninety-five per cent. air, the kidney tracings are the same as those of chloroform. But when the semiclosed method are used, the tracings immediately become like those characteristic of ether. As there is less ether, however, in the mixture, the kidney circulation when the anæsthetic is suspended recovers sooner than when pure ether is used.

The renal secretion is more copious than with pure ether, but less than with chloroform. When the A.C.E. is pushed the secretion is diminished, but never to actual suppression. Albumin likewise appears early, though not so early as with pure ether, but in larger quantity than with chloroform. The inference, therefore, seems legitimate that with this mixture the effects

will be those of the inhalation of chloroform alone when the air is freely admitted, but that when the proportion of air inhaled is diminished by the semi-closed method we then get the specific ether effect upon the kidneys, along with an increased chloroform effect upon the general circulation.

Schleich's Mixture.—Three solutions or mixtures are used by Schleich. No. 1: Chloroform, 1½ oz.; petroleum ether, ½ oz.; sulphuric ether, 6 oz. No. 2: Chloroform, 1½ oz.; petroleum ether, ½ oz.; sulphuric ether, 5 oz. No. 3: Chloroform, 1 oz.; petroleum ether, ½ oz.; and sulphuric ether, 2⅔ oz. All these solutions were employed with four dogs, with like results, differing only in degree.

The carotid tracings in Fig. 6 show the effects of No. 3 solution, and are seen to correspond to those of the A.C.E. mixtures.

The kidney tracings follow those of ether, or rather, appear to occupy a position between those of pure ether and those of the A.C.E. mixture, being more pronouncedly like the ether effects than in the A.C.E. tracings. The recovery of the kidney circulation on the suspension of the anæsthetic took place rather sooner than from pure ether, but longer than after the A.C.E.

interference with the respiration. The ether, chloroform, A.C.E., and Schleich anæsthetics showed no variation from their previous results respectively, whether in the carotid or in the kidney tracings. Two dogs were used with such anæsthetics.

Nitrous Oxide.—This anæsthetic was administered during our experiments upon three dogs, by Mr. Hasbrouck, who has the greatest experience in the use of nitrous oxide of any one in the city. Owing to the special effect upon the respiration by this agent, the general blood pressure is shown (Fig. 7) in the carotid tracings to be rapidly and markedly raised.

These results are closely parallel to those of asphyxia, and are accompanied by a good deal of struggling, during which the excursions of the kymographic tracings are seen to be more pronounced than with any other anæsthetic. There is no depression of the heart until the respiration becomes much affected by pushing the narcosis, as was noted twice when artificial respiration had to be resorted to. When this anæsthetic was suspended the heightened blood pressure fell to normal very rapidly, and quick recovery was noted when artificial respiration was employed.

Kidney tracings. These are rather peculiar in some

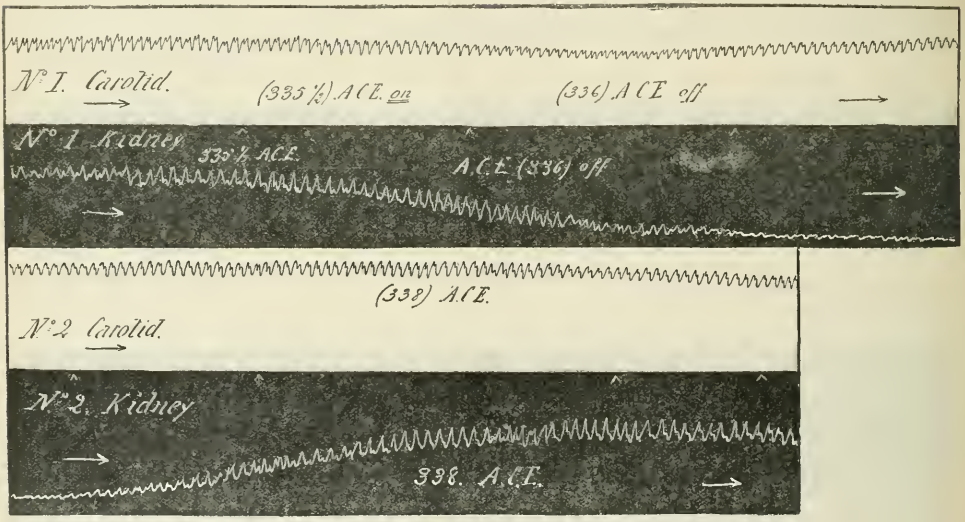


Fig. 5.—Oncometric and Carotid Tracings Following the Administration of A.C.E. Mixture.

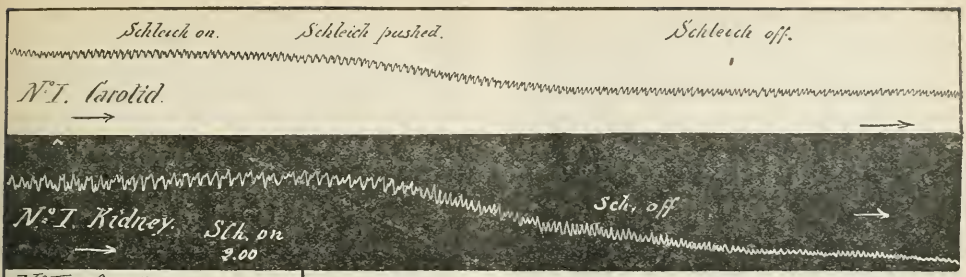
The renal secretion was diminished much more than with the A.C.E., though not quite to complete suppression. Albumin appears quite early, and with deep narcosis increases largely in amount, more than with A.C.E., but less than with pure ether.

In order to guard against error of interpretation of the oncometric tracings, as they might be in part affected by the movements of the diaphragm and of the abdominal viscera during respiration altering the position of the kidney or the proper alignment of its pedicle, it was proposed to eliminate all such muscular effects by the use of curare. For this purpose several drops of a one-per-cent. solution of curare, or one or two drops of a three-per-cent. solution, were injected into the jugular vein. Artificial respiration was then resorted to every few moments to keep up the action of the heart, but the respiratory movements were suspended while the effects of the several anæsthetics were noted. In these observations no difference was noted from the respective effects of the different anæsthetics upon non-curarized dogs, except such as were due to the general depression of the circulation by the

of their features, but are explicable as dependent upon the kidney sharing in the effects of interference with the respiration and consequent general arterial contraction, as shown in the carotid tracings. Under moderate anæsthesia the oncometric tracings at first fall, keeping close to and parallel with the base line. At this stage the oncometric respiratory curves are very pronounced, while the vertical tracings, *i.e.*, of the kidney pulse, are very short. If the anæsthetic is then pushed, the kidney waves disappear and the general tracing falls below the base line. These changes are very evanescent, and as soon as the anæsthetic is suspended the line rises again and the respiratory curves reappear, with a prompt return afterward to normal conditions.

The evidence, therefore, points to a contraction of the renal vessels corresponding in every particular with the general circulatory change, and not indicating any specific effect upon the kidneys.

Renal secretion. This is rapidly diminished, as might be expected from the fall in the kidney tracings. In complete narcosis some albumin appears, but it is



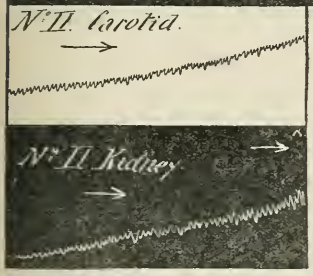


FIG. 6.—Oncometric and Carotid Tracings Following the Administration of Schleich's Solution No. 3.

moderate in amount, and soon disappears after the administration is suspended.

Conclusions.—As regards ether, it would appear that this agent produces a special contraction of the renal arterioles, with a consequent damaging effect upon the renal secretory cells, similar to those which follow clamping the renal artery. The kidney shrinks in bulk, with consequent fall of the oncometric tracing, and accompanied by diminution of secretion, marked albuminuria, and, finally, suppression. As remarked before, this condition of the kidney is not due to any change in the general arterial circulation.

These facts would seem to contraindicate the use of ether as an anæsthetic when renal disease is present, and particularly when with albuminuria there is a tendency to pulmonary œdema.

The effect of chloroform upon the kidney seems to be *nil*. The oncometric curves are nearly normal and are affected only through sharing in general circulatory changes. The secretion of urine continues up to the last moment of life, and the albuminuria is so slight that its presence at all is apparently due only to respiratory interference. Meantime the action of chloroform on the heart, as shown by the carotid tracings, is directly depressing. Ether, on the other hand, shows evidence of cardiac stimulation throughout.

The A.C.E. mixture shows the special effects both of ether on the kidneys and of chloroform on the heart, either being predominant according to the mode of the administration. If a large percentage of air be simultaneously inhaled, as is the case when chloroform alone is administered, the effect is that of chloroform cardiac depression without the effect of ether upon the kidney. If, however, the A.C.E. mixture be administered more as ether is when used alone, then a study of the carotid and kidney tracings shows clearly that we have both the cardiac depression of chloroform and the renal derangement of ether combined. This seemed to cause such powerful effects upon the breathing and upon the heart that artificial respiration had to be resorted to in every dog to which this mixture was freely administered, which was not the case with either ether or chloroform. As far as our observations go, therefore, we fail to see any advantage in this mixture of chloroform and ether, but rather the reverse.

These objections appear to be still more applicable to Schleich's anæsthetic. The cardiac depression of chloroform and the renal disturbance of ether are simultaneously developed in the tracings, similar to, but to a greater degree than with the A.C.E. mixture. Schleich claims that mixtures of different anæsthetics of different boiling, *i.e.*, maximum evaporation, points, are safer than the administration of the anæsthetics alone, on the assumption that the absorption of an anæsthetic as to quantity depends upon its boiling-point. The more volatile an anæsthetic is, the less will be absorbed into the blood in a given time.

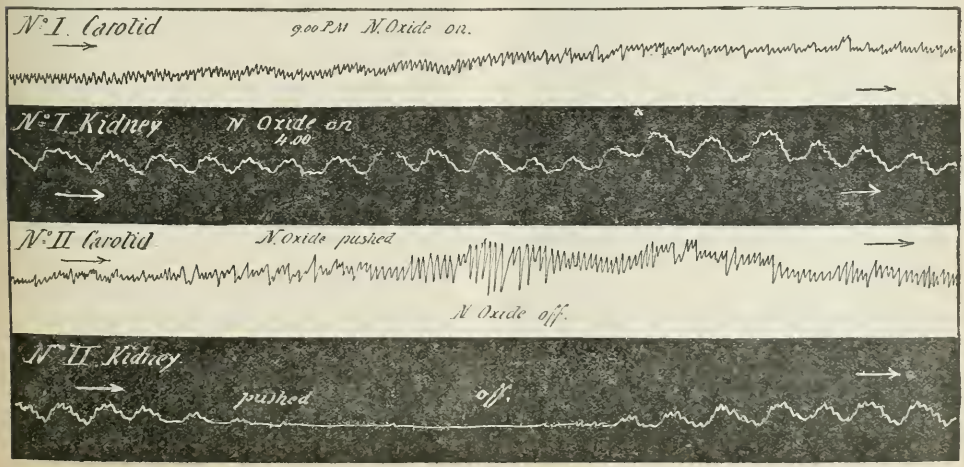


FIG. 7.—Oncometric and Carotid Tracings Following the Administration of Nitrous Oxide.

Hence ether, whose boiling-point is 93° F., will not be absorbed so rapidly as chloroform, whose boiling-point is 143° F. If, therefore, an anæsthetic could be produced whose boiling-point was the same as the normal temperature of the blood, the exact amount absorbed with each inspiration would be eliminated by each expiration. By causing the mixture to be at different degrees above this point, he claims that we can regulate at will the excess which the expiration would not remove, and thus the amount of the anæsthetic retained in the blood. His addition of petroleum ether or benzin to sulphuric ether and chloroform was further to facilitate the formation of a mixture or solution of anæsthetics which would afford a safer means of absorption.

We believe that practically this reasoning is fallacious, because it assumes that these mixtures or solutions constitute a new chemical homogeneous compound which will always be inhaled as one substance in definite chemical proportions, just as a compound salt is one substance when swallowed after solution in water; whereas the fact is that ether remains ether and chloroform stays chloroform during the inhalation, and that the proportion of either which will be absorbed will depend upon the mode of administration, a tight cone allowing an amount of chloroform to be taken which would be extremely dangerous, while the free admixture with air would so lessen the absorption of ether that its specific effects would be proportionately lessened. Meantime the adoption of benzin is not the adoption of an anæsthetic, for Dr. S. T. Meltzer, in a communication to us on his experiments upon rabbits with petroleum ether, by inhalation through mouth and nose, as well as through a tracheal cannula, says: "Petrol ether is not a narcotic. If a rabbit was put under deep anæsthesia by ether, and then ether suspended and petrol ether administered, the lid reflex soon reappeared and the rabbit woke up. The inhalation of pure petrol ether alone soon brings out a distinct tetanus and opisthotonos, to which the animal soon succumbs if the inhalation be continued. If the inhalation be discontinued at the appearance of the convulsions, the animal survives the tetanus, but this is then followed by a distinct paresis of all the extremities. If ether is given with the petrol ether, the tetanus movements are suspended, but not so the paralytic after-effects; the rabbit dies of paralysis of the respiratory muscles."

There is, moreover, a physical reason for doubting the manageability of mixed anæsthetics, due to the fact that if two agents of different maximum points of evaporation be mixed together, the more volatile of them will increase the evaporation of the other, by carrying off more of the less volatile one than if the latter were vaporized by itself. Thus more chloroform would be inhaled if mixed with ether than if it were administered separately.'

That Schleich's mixtures have been used in a number of cases without dangerous effects is no evidence that they are safe, for the same may be said of chloroform and of ether the world over. Mixed anæsthetics of any kind might be employed in hundreds of instances without unpleasant results, though actually they were more dangerous than unmixed agents, for with chloroform itself surgeons have published reports of ten thousand administrations of it without one serious accident.

CLINICAL STUDY OF INTERSTITIAL NEPHRITIS, WITH METHODS OF DIAGNOSIS.[1]

By EVERETT J. BROWN, M.D.,

DECATUR, ILL.

Bright's classical picture of chronic nephritis, so familiar to us all and so easily recognized, is about as follows: Universal dropsy with swollen face and puffed eyelids, profound anæmia, great weakness, shortness of breath, headache, diminished urine, which is loaded with albumin and tube casts, and finally the occurrence of uræmia, convulsions, and death. The diagnosis of such cases presents no difficulty, even to the medical student, but I wish to speak to-day of a form of chronic Bright's disease which is far more difficult to recognize and is of infinitely more importance to the practitioner, from the fact that it is of such common occurrence. I refer to chronic interstitial nephritis—a form of Bright's disease which often exists for five to ten years without being recognized. The subjects of it may have the appearance of perfect health, often of ruddy face and fine physique, and they are pursuing their regular occupations without interruption; they have no dropsy or puffed eyelids; they are passing an abundance of clear and what they call "healthy-looking" urine. It seems hardly necessary to examine it, they say; but when we do, what do we find? No albumin, or only a trace; acid reaction. Repeated examination shows no tube casts; the specific gravity is a little low, but it is easily accounted for by the amount of fluids ingested, or other cause. The cervical headache, the vertigo, and the indigestion are referred to errors of diet, and the patient is given blue mass and digestive remedies and told to regulate the diet, and then allowed to depart, while the slowly advancing, deadly contraction of his kidneys continues, until the end comes suddenly in the form of a uræmia or the slower but now easily recognized dropsy and heart dilatation. Many of these cases successfully pass through the hands of careless life insurance examiners, and are able to realize on their policies several years before their age of expectancy is reached.

How, then, is this form of nephritis to be early recognized, for upon early recognition depends the only

[1] Mr. J. C. Minor, Jr., a chemist of this city, has made careful researches on this point, and conclusively demonstrates this fact in the following statements:

"In my experiments Schleich's solution No. 3 was made up as follows: Chloroform, 60 c.c.; petrol ether, 30 c.c.; sulphuric ether, 160 c.c. The boiling-point of the chloroform used was 142°; of the sulphuric ether, 97°. Petrol ether was not constant, but ranged from 95° to 131°, most of it coming over between 104° and 113°.

"The chloroform was subjected in the distilling-apparatus for half an hour to a temperature ranging from 100° to 110°, and then for half an hour from 110° to 135°. Not more than 1 c.c. was vaporized at these temperatures in this time.

"Schleich's solution was then distilled and the distillate divided into three portions: *A*, boiled between 100° to 113°, gave 41 c.c.; *B*, boiled between 113° and 131°, gave 110 c.c.; *C*, boiled between 131° and 145°, gave 45 c.c.

"Fraction *A*, 41 c.c., was redistilled and gave three fractions as follows: *a*, boiling-point 100° to 110°, gave about 10 c.c.; *b*, boiling-point 110° to 118°, gave about 11 c.c.; *c*, boiling-point 118° to 136°, gave about 12 c.c.

"Fractions *b* and *C* were united and distilled in two fractions, the second of which, about 4 c.c., was almost pure chloroform, and boiled from 141° to 142°.

"Fraction *B*, 110 c.c., boiling-point between 113° and 131°, was distilled into four portions: (1) boiling-point 104° to 113°, gave 15 c.c.; (2) boiling-point 113° to 122°, gave 30 c.c.; (3) boiling-point 122° to 131°, gave 25 c.c; (4) boiling-point 131° to 143°, gave 30 c.c.

"No attempt was made further to treat the first three portions. Note on refractioning gave 18 c.c. of chloroform, boiling from 140° to 142°.

"It will be observed that the boiling-point of the greater part of the mixture was lowered, as claimed by Schleich, considerably below that of chloroform, *i.e.*, between 113° and 131°. But that any diminution thereby of the effect of chloroform is not to be expected, but rather the reverse, is evident from the fact that whereas a large amount of chloroform, as such, was found after vaporizing the portion between 113° and 131°, but a small amount was vaporized from chloroform alone under the same conditions of time and temperature."

[1] Read before the District Medical Society of Central Illinois, April 26, 1898.

hope of prolonging life? The diagnosis of interstitial nephritis is not a sentence of death by any means, for, although a very serious and often fatal disease, it is not incompatible with long life and apparent good health. One of our most noted statesmen when a candidate for the Presidency had had this form of kidney disease for many years. A large number of such persons live indefinitely and die of some intercurrent disease, and the post-mortem offers the first evidence of the diseased kidneys; in other cases the nephritis may exist for many years without symptoms up to a certain point, and then the patient becomes suddenly ill and may quickly die with uræmia; other cases gradually develop a cardiac hypertrophy, with a lowering of the specific gravity of the urine and a pulse that is easily made too tense; otherwise their health is good. They go along this way for years, and may die of some other disease. Another class of patients have attacks of spasmodic dyspnœa at occasional intervals, between which attacks they are well; later these become more and more severe, the heart compensation fails, dropsy develops, the shortness of breath continues day and night, the patient cannot lie down, and death comes to his relief. I have seen some cases with an onset exactly imitating an acute bilious attack, with vomiting and headache and constipation or slight diarrhœa; such a case I saw recently in consultation, and it is especially interesting as showing the great danger of delay in recognizing the true nature of the attack. I here give the history:

Dr. M——, aged thirty-five years, had always had a most persistent constipation; often headache. Had known that his urine contained albumin at times, but he continued to eat heartily of a full mixed diet, with plenty of butcher's meat. The present attack came on suddenly with severe headache and vomiting. It was regarded as a bilious attack and was treated with calomel and salines; no relief followed. The headache made him almost maniacal, and he rolled and tossed in bed with constant vomiting. An examination of the urine was now suggested, and it was found to contain both albumin and casts. By this time he was in a semicomatose and delirious state, with a rapid pulse, but no fever. Means for the elimination of the excess of waste products in his blood were used, consisting of cathartics and diaphoretics, with hot baths and packs. There was slight improvement, but on the fourth night he developed a temperature of 104.5° F., and a pulse of 140, with more profound stupor and delirium. It was thought that death was certain, but after reduction of temperature by cold pack and later a free catharsis with compound jalap powder, he gradually improved and was able to be up in a week.

Some cases show a most rapid development of fatal symptoms, coming on during apparently good health, or suddenly following some injury, or an intercurrent disease, or a surgical operation, especially if ether has been the anæsthetic used; in these cases cerebral symptoms predominate. There are dyspnœa, vomiting, general convulsions, coma, or a hemiplegia like that with a cerebral hemorrhage or embolism. The patient may be found on the street, in his room, or in bed, at first stupid and muttering incoherently and then completely comatose. Such a case I saw recently in a man picked up in an unconscious condition on the street. He was fifty-five years of age, and had not been very well for two or three years, although kidney trouble had never been suspected. Although he was unconscious, no paralysis was noted; he was breathing stertorously and was totally comatose. By means of a catheter a little urine was drawn and found to be albuminous and to contain casts. Physical examination of the heart showed cardiac hypertrophy without valvular disease. From the family I elicited a history of nocturnal polyuria, dyspepsia, headache, and vertigo, which left no doubt in my mind as to the cause of the fatal illness.

In cases following some injury or a surgical operation the patient becomes feeble, the heart is weak, the urine quickly becomes scanty or is suppressed, and the patient soon dies, or he may linger for a few weeks or even months in a condition of chronic uræmia resembling a mania or dementia, from which, however, he may finally recover. Such a case was the following:

Mr. C. H——, aged sixty-two years. Diagnosis, interstitial nephritis following an old stricture of the urethra. The stricture had led to atony and dilatation of the bladder and ureters with incontinence of urine. Under chloroform perineal section for division of stricture and drainage was performed. For three months the man's life hung by a thread on account of the uræmia which developed. He had stupor, delirium, and acute mania; the urine diminished to four or five ounces a day for a few days, but he finally recovered, with no recollection of about ten weeks of his illness. He is now actively engaged in the practice of his profession. The nephritis still existing is kept in abeyance by proper diet and mode of life. A recent examination of his urine gave the following result: Amount in twenty-four hours, seventy ounces; specific gravity, 1.012; acid reaction; amount of urea, four hundred and twenty-five grains; faint trace of albumin.

The great dyspnœa which occurs in paroxysms in some cases of interstitial nephritis is often mistaken for asthma and treated as such. The following case is an example of "renal asthma":

John McG——, aged fifty-five years, for two years had had frequent attacks of spasmodic dyspnœa, which occurred mostly at night and exactly imitated a bronchial asthma; the frequent attacks had caused considerable emphysema. He obtained no relief from the usual inhalations for asthma and only slight relief from hypodermics of morphine and atropine. A urinary examination revealed albumin and casts, and the heart showed hypertrophy with beginning failure of compensation. An exclusive milk diet with other treatment rendered the attacks less severe, but he finally died of dropsy and exhaustion.

With cases which are first seen in a comatose state, many mistakes are made and patients allowed to die when they would have recovered by proper treatment. Three years ago I saw in consultation a woman, aged fifty-five years, with supposed "brain fever." She had been practically comatose for two days, but could be aroused slightly by shaking and made to swallow a little nourishment. She had passed no urine since the beginning of her illness. With a catheter a little concentrated, highly albuminous urine was withdrawn, and a diagnosis of nephritis and uræmia made. Treatment by means of a hot pack, croton oil on the tongue, and hypodermics of pilocarpine caused a rapid elimination of urea, and the patient returned to consciousness after a few hours. Since then she has been practically well except for her chronic nephritis, which is held in check by proper diet.

Another common error is the mistaking of uræmia for hysteria. Such mistakes do the patient great injustice and often sacrifice her life, as the following history shows:

Mrs. B——, aged twenty years, pregnant two months, began suddenly to have "nervous spells" and then convulsions. These were treated for forty-eight hours as hysterical paroxysms, when an examination of the very scanty urine revealed the true nature of the disease. The patient died a short time after an induced abortion, which was performed by her physician in the hope of relieving her.

Many cases of interstitial nephritis are called and

treated as neurasthenia. Dercum[1] has recently called attention to this. He says: "A supposed neurasthenia may possibly be an obscure case of interstitial nephritis, in which it is necessary to make repeated search in the urine to find the proof." Professor Dujardin-Beaumetz[2] says: "How many cases of death unexplained have resulted from interstitial nephritis? How many diseases have deceived the physician as to their true nature and have been dependent exclusively on renal cirrhosis? The number is greater than you would suppose, and such mistakes, constantly committed, result from the fact that physicians have always been in the habit of referring for the diagnosis of chronic nephritis to Bright's description, and have an idea that it is necessary in order to be warranted in diagnosing this affection to have general œdema and scanty urine, which must be very albuminous. When these symptoms are not found they seek elsewhere for the cause of the disease and ascribe it by turns to other organs."

Contracted kidneys are more often found in men than in women, and the age is usually over forty years, although many cases are recorded as occurring in children. Of the sixteen cases constituting this report, eleven were in males and five in females; the youngest patient was twenty-four years and the oldest seventy-one years. Five cases occurred in the third decade, none in the fourth, five in the fifth decade, four in the sixth, and one in the seventh.

The increased amount of urine passed is usually the first symptom noticed by the patient. In six of the cases above mentioned in which frequent daily measurements of urine were made, the average daily amount for thirty-six observations was sixty-six ounces; the maximum passed in one day of twenty-four hours was one hundred and twenty-eight ounces and the minimum was forty-eight ounces. In one case, that of a woman, aged fifty-six years, in which nineteen measurements were made, the average daily excretion was sixty-four ounces; the minimum being forty-two and the maximum eighty-eight.

No disease is more insidious in its approach than is interstitial nephritis, and, as I said before, it may have existed for years, and give its first intimation in the shape of a profound uræmia. Some obscure symptom may lead us to an examination of the urine, such as arising at night to urinate, or a tense, bounding pulse, or a too strong impulse of the heart against the chest wall; or there may be a slight puffiness of the ankles, noticed only at night and evidenced only by the shoe being a little too tight. Often the patient has a feeling of unaccountable weakness or of being so often tired. The heart soon shows signs of a hypertrophy of the left ventricle; the impulse of the heart is more bounding, the apex beat is displaced lower and to the left, the percussion area is increased, but, above all, there is a sharp accentuation of the second aortic sound, plainly evident when the stethoscope is placed over the second costal cartilage to the right of the sternum. An important point in diagnosis is to distinguish the high pulse tension of Bright's disease from the hardening of arterio-sclerosis; in the former the artery is obliterated below the point of finger pressure, while in sclerosis it can still be felt in outline. With the sphygmograph a characteristic pulse tracing is given, and this means of diagnosis should be used whenever possible, for it gives evidence of high pressure which cannot be detected by the finger.

Other circulatory symptoms are dyspnœa, palpitation, reduplication of the systolic sound, and an uncomfortable pulsation in the head and other parts of the body; but with all these symptoms there is no heart murmur because there is no valvular disease, unless it be as a complication; in fact, cardiac hypertrophy without murmur usually means Bright's disease. The hypertrophy is a conservative process and may carry the patient along quite comfortably for many years; but when it finally fails we have dilatation and diminished blood pressure, and with it a diminished secretion of urine, high specific gravity, abundance of albumin and casts, cardiac dyspnœa, palpitation, dizziness, dropsy, and death from uræmia.

Dimness of vision due to albuminuric retinitis is a common symptom. It is often first recognized by the ophthalmologist, and generally means an advanced stage of the disease. Some assign two years as the limit of life after its recognition. Many cases of apoplexy show an interstitial nephritis at the autopsy. Dickinson[1] says that half the fatal cases of apoplexy are preceded by this disease.

It was not many years ago when albuminuria was synonymous with Bright's disease, and *per contra* the absence of albuminuria precluded Bright's disease. Both these conclusions we know now to be often erroneous, for on the one hand without Bright's disease we have the so-called "physiological or functional albuminuria," also the "cyclic albuminuria," and the "albuminuria of adolescence," all of which are conditions showing an intermittent or remittent albuminuria, usually in youths or young adults, especially after severe physical exercise, such as bicycle-riding or athletic sports. On the other hand, we know that in interstitial nephritis albumin is often, and in some cases constantly absent from the urine. An example of the functional variety of albuminuria recently came under my observation: A young man, aged thirty years, was spending his vacation in the East, and was indulging in much physical exercise, such as rowing, bicycle riding, etc. He met a friend there, who prevailed upon him to take out some life insurance while in New York. On examination, his urine showed a decided trace of albumin, and he was rejected. On his return home, after several days' rest, no albumin was found. Repeated examinations by myself and another physician have failed to show even a trace of albumin. Many insurance companies, however, now act upon the principle that physiological albuminuria does not exist, and that all these cases will sooner or later show an active nephritis. Millard[2] also says that physiological or normal albuminuria does not exist.

As an instance of the almost constant absence of albumin in a case of interstitial nephritis, I append the following history:

Mr. A. S. F——, aged sixty-five years, a hard-working, robust-looking farmer; no alcoholic history; began treating him two years ago. For five years he had had a most florid complexion with "bloodshot" eyes, and was often accused of drinking. He came for treatment for his "dizzy spells" and a flatulent dyspepsia. His appetite he said was too good; the bowels were constipated; his sleep was somewhat disturbed and he was compelled to arise once or twice each night to urinate. Physical examination showed great increase of arterial pressure with considerable arterio-sclerosis; his pulse was slow and very tense; hypertrophy of the left ventricle was evidenced by the displaced apex and accented second sound. The urinalysis at that time was as follows: Straw-colored, acid; specific gravity, 1.018; no albumin. For over two years repeated examinations failed to show even a trace of albumin, but the specific gravity has remained low and the daily amount of urine has ranged from sixty to eighty ounces. Recently, however, I examined a specimen passed after a brisk walk and found a good

[1] Dercum: "Neurasthenia Essentialis and Symptomatica," Jour. A. M. A., April, 1898.

[2] Dujardin-Beaumetz: "Diseases of the Kidneys," 1888.

[1] Dickinson: "A Treatise on Albuminuria," 1881.

[2] MEDICAL RECORD, October 1, 1892.

trace of albumin, and after sedimentation two hyaline casts on one slide. His heart compensation is still good and there has been no dropsy or any severe uræmic symptoms. His urine for twenty-four hours recently gave the following findings: Amount, sixty-seven ounces; pale straw-color; acid reaction; specific gravity, 1.015; albumin, faint trace; urea, 1.60 per cent. or four hundred grains in twenty-four hours.

Tests for Albumin.—It is now generally conceded that there is no single positive test for albumin. The heat and nitric-acid test, if properly conducted, is the best, but it gives a reaction with mucin, or with a nucleo-proteid formerly mistaken for mucin. Symonds[1] advises the use of Heller's nitric-acid contact test to confirm the heat and acid test. Heller's test alone is hardly reliable, as the reaction does not appear for twenty or thirty minutes. Hare[2] says that this test is too fallacious to be used. Purdy[3] modifies the heat and nitric-acid test by first raising the specific gravity of the urine by the addition of a small quantity of a saturated filtered solution of common salt, and boiling the upper inch of the mixture in a test tube after slightly acidifying with acetic acid. He claims that this test possesses all the sensitiveness of the heat and acid test and avoids the mucin reaction, and that it is especially valuable when dealing with minute traces of albumin. I use this test often in suspected cases of interstitial nephritis in which the amount of albumin is unusually small. It is especially valuable in making a differential diagnosis between interstitial nephritis and the polyuria and low specific gravity of neurasthenia and hysteria, when the estimation of the twenty-four hours' urea is impossible. In any suspected case we should not exclude nephritis because we fail to find albumin. Measure the total quantity of urine in twenty-four hours and take the specific gravity of the mixed specimen. If the total amount is above sixty ounces, and if the specific gravity is below 1.018, our suspicions are well founded and the estimation of urea for twenty-four hours should be made and careful search for casts instituted; if interstitial nephritis exists, the amount of urea will be found below four hundred and fifty grains. The difficulty of finding casts is another source of error in the diagnosis of this disease. The condition is so chronic that the casts are few, and on account of the diluted condition of the urine, unless the sediment is obtained from a large quantity of urine—say two hundred and fifty to five hundred cubic centimetres—we may find no casts. Hence the method of Haines and Skinner[4] is very valuable; it consists of a combination of the subsidence and centrifuge methods. In obtaining a sediment for microscopical examination, about two hundred and fifty cubic centimetres or more of the urine is allowed to stand in a conical percolator for ten to eighteen hours, and then the lower stratum containing the sediment is placed in the centrifuge and subjected for two or three minutes to about three thousand revolutions a minute. The sediment is thus condensed to a small deposit at the apex of one or two tubes, consisting of one to four small drops, within which are practically all the casts of the large volume of urine employed. The casts found in interstitial nephritis are of the small hyaline variety and are not always easily seen, and require a fine adjustment of the light-regulating mechanism of the microscope.

Another difficulty in diagnosing this disease is due to the fact that the urine passed in the daytime only is examined instead of the mixed product of the twenty-four hours. Haig[5] has shown that during the day hours there is in this disease an excess of uric acid in the blood, producing contracted arterioles and high blood pressure, and in spite of the ingestion of large quantities of water the urine is scanty and of a fairly high specific gravity, but the blood is dilute, and when night comes the conditions are reversed. There is lessened uricacidæmia and the relaxed arterioles produce a great diuresis with a pale urine of low specific gravity, the night secretion being often twice as large as that in the daytime. Hence in all cases of nocturnal polyuria he advises a careful examination for other evidence of contracted kidney.

Determination of Urea.—Next to the recognition of the presence of casts in the urine comes the estimation of the daily excretion of urea. It does little good to know the daily amount of albumin escaping by the urine, for in some of the gravest forms of Bright's disease, *e.g.*, interstitial nephritis, the amount is very small; not so, however, with the urea. We know that the average healthy man between twenty and forty years of age excretes about five hundred grains of urea in twenty-four hours: in women and children the amount is somewhat less. In the several forms of Bright's disease this elimination may be reduced as much as fifty or even seventy-five per cent. We then have that variable train of symptoms known as uræmia. The regular estimation of urea excreted, therefore, is a most important part of the management of every case of Bright's disease, for by it we can tell the progress of the disease, the effect of our remedies, and often can even foretell a uræmic explosion with its convulsions, coma, and death. It is necessary in estimating the amount of urea excreted in twenty-four hours to test a sample of the mixed urine for that time. There are three methods in common use: the best consists in the use of the Doremus instrument. An alkaline hypobromite solution is used, which decomposes the urea in a definite amount of urine. A scale on the instrument shows the amount of urea.

With the reduction of urea there is noticed in this disease a considerable reduction of the phosphates. Purdy regards this as a diagnostic feature of the disease, and he has devised a quick method of estimating the phosphates by means of the centrifuge. The percentage tubes are filled to the 10 c.c. mark with the urine, and then an alkaline mixture of sulphate of magnesium is added until the 15 c.c. mark is reached. The tubes are then placed in the centrifuge and revolved at the rate of one thousand revolutions a minute for three minutes, when the bulk percentage may be read off from the scale; the bulk percentage in normal urine is about eight. With the percentage tubes I have used I have not found this method very successful, as the scales in the tapering ends are not perfect, and read differently when both tubes are filled with the same fluids for testing.

Unlike the other forms of nephritis, in a large number of cases of contracted kidney no cause is discoverable for the disease. Since it occurs mostly in adults, we cannot recognize any of the exanthemata as a causative agent; neither can we in many cases find a history of exposure to wet or cold. Dr. Clifford Allbutt has attributed twenty-four out of thirty-two cases in private practice to some long-continued anxiety or great grief. Tyson[1] does not believe that this cause often acts. Haig[2] has shown by most painstaking experiments the relationship of an excess of uric acid in the body and chronic Bright's disease. He believes all cases of interstitial nephritis to be only an ultimate result of uricacidæmia. He says he has seen so many cases of increased arterial tension due to uric acid, and cases of periodical sufferers from uric-acid headache or migraine finally eventuate into

[1] Symonds: American Journal of the Medical Sciences, April, 1898.
[2] Hare: "Practical Diagnosis."
[3] Purdy: "Practical Urinalysis and Urinary Diagnosis."
[4] Haines and Skinner: Jour. A. M. A., January, 1898.
[5] Haig: "Uric Acid in the Causation of Disease."

[1] Tyson: "Practice of Medicine."
[2] Haig: *Loc. cit.*

albuminuria and morbus Brightii, that he no longer questions the relationship. All investigators have noted the association of gout and contracted kidneys, and it is probable that all cases of chronic gout sooner or later show an interstitial nephritis. Uric acid in the blood is probably the cause of both conditions; and as an excess of uric acid in the blood is due to an excessive ingestion of meat and lack of exercise, we usually find these two diseases existing in persons who live well and consume a large amount of meat and take very little exercise. Chronic lead poisoning is regarded as another cause of interstitial nephritis.

Prognosis and Treatment.—We cannot cure interstitial nephritis, but if the patient will co-operate with us by proper dieting, mode of life, etc., we can promise him that his life may be prolonged many years and often indefinitely; let him remember that he must not eat anything that comes from a butcher's shop; let his meat be confined to fish and an occasional meal of poultry, but no eggs or other nitrogenous food; restrict the quantity of sugars and starches and encourage the ingestion of fats; he should drink an abundance of milk and avoid wines, spirits, and tobacco; exercise in the open air is very desirable, and an occasional change of scene and climate is beneficial; woollen undergarments should be worn throughout the year, the weight varying with the season; the night robe should be woollen and reach to the feet; plenty of water should be taken between meals and a moderate quantity at the meal; in all cases the bowels should be carefully regulated.

Many cases need no medicine whatever, but those patients who are apparently well, but with some hypertrophy of the left ventricle with a tense pulse, and who feel dizzy at times and have headache, are much relieved by potassium iodide, which softens the pulse and relieves the contracted arterioles. In treating this disease we must remember that there are two indications to be fulfilled: first, to remove an irritant poison from the system; and second, to relax the contracted blood-vessels. For the first object we give diuretics, such as acetate of potassium and digitalis; also diaphoretics, such as the hot bath or hot pack and pilocarpine, and then free catharsis. For the second purpose, that of relaxing the contracted arteries, iodide of potassium, chloral, and nitroglycerin.

Nitroglycerin is by far the best remedy for removing the symptoms due to high tension, such as dizziness, throbbing in the head, dyspnœa, etc. For the direct effect upon the pathological condition in the kidneys, most authorities believe in the long-continued use of small doses of iodide of potassium and bichloride of mercury.

Summary.—Interstitial nephritis is a very common disease, especially after forty years of age, and is often unrecognized for years. It is practically incurable, but life may be prolonged indefinitely in many instances by proper mode of life. A diagnosis must be made from a syndrome which often does not include either albuminuria or the detection of casts, as follows: (1) Polyuria with continued low specific gravity; (2) reduction in the daily excretion of urea; (3) hypertrophy of the heart (without valvular disease) and increased pulse tension; (4) various nervous symptoms, such as occipital headache, vertigo, dyspnœa, and insomnia.

The following symptoms or conditions, when found in any case, but especially in persons over forty years of age, demand a careful examination of the urine for evidence of interstitial nephritis: (1) nocturnal urination; (2) unaccountable weakness; (3) dyspepsia of a flatulent character, or a causeless diarrhœa, violent or spasmodic vomiting, or repeated "bilious attacks"; (4) dyspnœa, asthmatic attacks, or chronic bronchitis; (5) repeated headaches, especially if postcervical, persistent unexplained neuralgias, vertigo, insomnia; (6) bounding heart action or visible pulsations in various parts of the body; (7) severe hemorrhage from the nose or stomach; (8) dimness of vision, sudden blindness, or tinnitus aurium; (9) coma, convulsions, muscular twitchings, confused intellect, apoplexy.

SOME PNEUMOGASTRIC REFLEXES OF COMMON INTEREST TO PRACTITIONER AND SPECIALIST.

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I AM well aware that in this paper I am touching upon a subject which has been worn to shreds, and even frequently exposed to ridicule by unreasonable and dogmatic individuals. That one poor, already overburdened little word "reflex" has been but too often called upon as the scapegoat for the physician who cannot otherwise account for existing signs and symptoms. To such an extent is this true that we often hear intelligent men damning the reflex and asserting that it is but a curiosity of etiology, and an unimportant one at that. Yet I am going to be foolish enough to observe that every symptom may reasonably be supposed to have a cause, whether patent or obscure; further, that the causes of many symptoms are frequently obscure; and still further, that many of the frequently obscure causes are responsible for symptoms produced by reflex nervous action and sensation. Moreover, while a reflex symptom is in no way symptomatic of its causation, still an abnormal condition of a given part can frequently be demonstrated to be the cause of symptoms more or less remote. So, too, we may have a symptom which could be caused by abnormal conditions in any one or more of a half-dozen different parts, so that the removal of a possibly causative abnormal condition of one part, without the cessation of the symptom, would not prove the absence of reflex. On the other hand, when a possible reflex cause has been located and removed, with the simultaneous disappearance of the symptom, there is but one reasonable conclusion to be drawn.

No one would be justified in removing or tampering with an organ apparently healthy, on the highly suppositious grounds of a reflex symptom; but when there is an affection of an organ which, time and again, has been demonstrated to be capable of producing the reflex symptom in question, there can be no reasonable doubt as to the indications for treatment.

No one can deny, with any show of reason, the frequent existence of reflex action and sensation in the human organism. The earnest wish in the minds of many men for the disappearance of these phenomena as phenomena is father to the thought expressed in a paragraph headline in the MEDICAL RECORD of May 21, 1898, "The Passing of the Reflex." The paragraph itself is a quotation from the pen of a neurologist, and winds up as follows: "In the mean time, under the keen scrutiny and rigid requirements of neurology, the so-called reflex as a cause of great nervous disorder is gradually being pushed into its rightful place—that is, among the relatively unimportant curiosities of etiology." Of course, the whole gist of this conclusion rests upon what is meant by "great nervous disorder." Nevertheless, the statement is misleading, for there can be no greater certainty than that "the passing of the reflex" will become a *fait accompli* only when the final passing of man has put the seal to all the ills that flesh is heir to.

It is my purpose in this paper to emphasize some of the commoner reflexes referable to the pneumogastric nerves and their connections.

A reflex is generally defined as an action due to reflected irritation, and not to volition; that is, it is an involuntary action produced instinctively by stimulation of a nerve centre. The afferent and efferent nerves of one locality are alone involved, as a rule.

There are, however, reflex sensations which cannot be considered analogous to reflex actions. By reflex sensation is meant sensation which may or may not stimulate action, and which is produced or influenced by irritation of a part more or less remote. That is to say, two or more parts having a common nerve centre or intercommunicating branches, irritation of one part may influence sensation or motion in a neuro-relative part—if I may be allowed to use the expression. Further than this, it may be asserted broadly that for an action or a sensation to be considered as a reflex, it must not be symptomatic of its cause; or, in other words, any action or sensation which is directly symptomatic of its causation is not a reflex.

A reflex sensation, then, is caused by an irritation in a given part transmitted to the nerve centre supplying that part; but tributary to the same nerve centre there is a network of nerve fibres from other parts, twining and intertwining, which must be passed through, many of them in direct communication with the message-bearing nerve. Is it to be wondered at that sometimes, even often, the message of irritation is taken up by these intimately connected fibres, and a stimulating alarm sent in as coming from the parts that they supply?

The recognition of reflexes forms part of the daily work of every general practitioner. The pain referred to the end of the penis in stone in the bladder; pain in the knee in morbus coxarius; pain diffused over the abdomen in appendicitis; pain in the shoulder and arm in cardiac disease; the vague pains of dysmenorrhœa, and others, are all under the almost daily notice of the family physician. But to the laryngologist, rhinologist, and otologist, reflex action and sensation are of especial interest and significance, for there is no field more fertile in these phenomena than the parts supplied by the pneumogastric nerve and its connections, whose terminal branches are within reach of external excitation and control in the ear, nasopharynx, pharynx, and larynx. The nasal fossæ and septum, too, are clinically deeply involved in pneumogastric reflexes, though their connection is rather more obscure. It is to be remembered, though, that their innervation is derived almost entirely from the fifth; and the pharyngeal branch of Meckel's ganglion arises close to, and sometimes together with, the Vidian, which supplies a considerable portion of the interior of the nose. Nor must we forget the connection between the fifth and tenth nerves, which will be shown farther on.

It is of paramount importance that these reflexes, or at least the most common ones, should be recognized by the general practitioner, and, if not positively diagnosed by him, their existence may at least be suspected and the specialist called in to account for signs and symptoms otherwise inexplicable. On the other hand, the dividing line between a direct and a reflex causation of a symptom is by no means easy of recognition; but in such a case the cause, whether direct or reflex, would probably be apparent, and there would be no difference in the treatment, this being directed to the cause regardless of the effects it has produced.

Macleod Yearsley, F.R.C.S., England, in an able and interesting paper in the May, 1898, *Journal of Laryngology, Rhinology, and Otology*, has emphasized the existence of "aural reflexes," pneumogastric and trigeminal. I shall refer only to the former, touching but lightly upon them, as upon the other pneumogastric reflexes, this paper being designed not for an exhaustive study, but only as a cursory exposition of conditions and effects, laying particular stress only upon the signs pointing to the existence of the commoner reflexes and the general methods for their control. Before going further, I shall call attention to a brief synopsis of the innervation accomplished by the vagus and some of its connections.

The external auditory meatus is supplied by branches of the auriculo-temporal branch of the third division of the trigeminus and by the auricular branch (Arnold's nerve) of the pneumogastric. The auriculo-temporal has branches of communication with the facial, and the branches to the external auditory meatus arise at the point of this communication; this is important, as the posterior auricular branch of the facial is joined in front of the mastoid process by a filament from the auricular branch of the pneumogastric. Thus the tenth nerve is both directly and indirectly involved in the nerve supply of the external meatus. The auricular, which is the first branch given off by the pneumogastric, is joined very near its origin by a filament from the petrous ganglion of the glosso-pharyngeal, which is the nerve of sensation to the pharynx, fauces, and tonsils. There exists, therefore, a direct as well as an indirect communication between the external auditory meatus and the pharynx.

The innervation of the middle ear is accomplished chiefly by branches from the facial and glosso-pharyngeal, both of which, it is to be remarked again, are in touch and connection with the pneumogastric.

In the pharynx a condition obtains much like that in the external auditory meatus. There is a special pharyngeal branch of the pneumogastric, and, through a communicating branch from the glosso-pharyngeal to the pneumogastric, the latter is indirectly as well as directly involved in pharyngeal innervation. And as we go farther down this pneumogastric area, we find each locality both directly and indirectly connected with its immediate neighbors, and each one ready, on slight provocation, to manifest its intimate nerve relation with every other part supplied by the great system of the tenth pair. Remembering now the extensive involvement of the pneumogastric in the external meatus, as already pointed out, and remembering that after the auricular the next branches of the vagus are, in order, the pharyngeal, superior and recurrent laryngeal, cervical and thoracic cardiac, anterior and posterior pulmonary, œsophageal, and gastric—it is not difficult to understand that sensory and motor disturbances could be and are often rapidly interchangeable among the organs suggested by this extensive nerve supply.

The first condition that I shall call attention to, and one of the commonest to be met with in the manifestations of the vagus reflex, is

Cough.—The reflex form of irritative cough may be associated with irritative excitation of the digestive organs. It is seen in varicose veins at the base of the tongue, in elongated uvula, and hypertrophied lingual or faucial tonsils. It is also seen in the pharyngitis sicca often found accompanying an atrophic rhinitis, though in this case it may be difficult to determine whether the cough is a reflex manifestation or a condition to be considered as directly symptomatic of pharyngeal disease. I have observed sometimes a persistent little dry cough in connection with adenoid hypertrophies of the nasopharynx, which disappears upon their removal. This is not a frequent condition, however, and is different from the slight cough combined with hawking and spitting often seen in adenoid hypertrophies, and caused by the dripping of the thick mucous secretion into the lower pharynx.

"Ear cough" is a common form of reflex. It is

usually of a small, dry, annoying, and persistent character. It is often caused by impacted cerumen, or foreign bodies in the external auditory meatus, and other abnormal aural conditions. The most limited experience in ear work would be sufficient for the recognition of this common condition. Yearsley says: "Such a cause for cough is not infrequently overlooked by the general practitioner, as in the following example: E. W——, aged sixty, paperhanger, complained of headache and troublesome dry cough. He was treated in the physicians' out-patient department of a general hospital for over a month, with various cough mixtures, etc. At the expiration of that time he began to notice a slight deafness, and came of his own accord to the ear department. Both ears contained plugs of hard, dry cerumen, which were removed by syringing, with the result that the cough disappeared in one day."

The treatment in ear cough, as in the other reflexes, is, of course, the removal of the cause. The MEDICAL RECORD of May 14, 1898, says that, according to Dr. P. Gastow in *Der Kinderarzt*, 1897, the common spastic night cough with vomiting and coryza in young children is usually of reflex origin. It is caused by the dripping backward into the pharynx of the mucus from a coryza posterior.

Another condition frequently met with in general practice is

Spasm of the Glottis or False Croup.—This is due in every case to reflex peripheral irritation. It may occur from the presence of irritating substances in the alimentary canal, or irritation caused by dentition. Frequently, however, it occurs from pressure on the superior or recurrent laryngeal nerve, caused by congested blood-vessels, enlarged glands or follicles, foreign bodies, or tumors. Ingals states that the attack is very likely to occur during an acute catarrhal inflammation of the larynx, and this view is borne out by other observers. As a further mark of its reflex causation, he says that with nursing babes it is frequently brought on by the entrance into the larynx of a little milk, and sometimes by dandling the child in the arms.

Spasm of the glottis may also be caused by irritation of Arnold's or Jacobson's nerve in the ear, transmitted to the fourth ventricle, and thence to the laryngeal nerves.

Lubet-Barbon, Paris, as cited by Ingals, says that adenoid hypertrophy in the nasopharynx is present in nearly every case of false croup. I have observed this in several instances, and I have further remarked the frequent presence of hypertrophied faucial tonsils. It would, of course, be palpably absurd, in view of the extensive area involved in the accepted causation of false croup, to assert or claim for one moment the invariable radical cure of the croupous tendency by the removal of "adenoids" or hypertrophied faucial tonsils. But it is not going too far to say that the removal of these conditions will lessen, and often markedly, this distressing tendency; and I do not hesitate to apply this knowledge, gained by my own experience, to the favorable influencing of a prognosis.

In the rational treatment of false croup, therefore, any possible cause should be located and remedied after an acute attack, with the view of preventing subsequent spasms.

Another common condition, and one which is frequently a veritable *bête noir*, is

Hay Fever or Rose Cold.—This is an affection not only attended with, but characterized by, reflex phenomena, the more important of which are sneezing and asthmatic attacks, referable to pneumogastric susceptibility. The asthmatic attacks may occasionally be due to obstruction of the nares, but this is unusual. The true cause of the reflex disturbances is a hyperæsthesia of the nasal mucous membrane. Usually there are to be found hypertrophies, exostoses, or other intranasal tumors. No treatment of hay fever can be successful without attention being given to local conditions in the nose. This alone can hardly be said to effect a cure, since the almost invariably present neurasthenic tendency and unfavorable atmospheric conditions must be taken into consideration. Still, I have seen eminently satisfactory results follow the control of localized hyperæsthesiæ, and the removal of spurs from the septum, or polyps, even when other indications for treatment were but imperfectly carried out.

Asthma is an affection very commonly induced by pneumogastric reflex action. I am not prepared to assert that all, or nearly all, cases of spasmodic asthma are due to morbid conditions of the upper respiratory tract. But there can be absolutely no disputing the statement that a very large percentage of these cases can be shown to be directly caused by such conditions. Ecchondroses or exostoses of the nasal septum, hypertrophied turbinated bodies, polyps, and other intranasal morbid conditions are frequently solely responsible for asthmatic attacks, and should be removed.

Of particular importance in this connection are adenoid enlargements in the nasopharynx, either a simple hypertrophy or a bursa-like formation (Tornwaldt's bursa), usually communicating with the pharynx by a sinus, and which may or may not contain a clear, fluid, viscid substance. I have had the most brilliant results in cases of spasmodic asthma by the simple removal of these conditions from the nasopharynx. Headache of a more or less severe type often, though by no means invariably, accompanies the asthmatic attacks, and is probably more often seen in connection with Tornwaldt's bursa, containing the fluid above referred to, than in simple adenoid hypertrophy.

Other tumors in the nasopharynx may cause similar symptoms, I take it. Irritating particles in the atmosphere lodging or striking upon the mucous membrane of the upper air passages may cause a reflex asthmatic attack.

Headache is one of the commonest of the vagus reflexes. It may be brought about by morbid conditions, chiefly in the ear, nose, and nasopharynx. Tornwaldt has reported several cases of nasopharyngeal catarrh with headache as a prominent symptom, which was relieved in each case by treatment directed to the nasopharynx. Bosworth says: "We must accept this interesting contribution to clinical medicine as confirming the teaching first made prominent by Hack, that in every case of cephalalgia a thorough inspection of the respiratory tract should be made in order to detect any possible source of irritation or diseased action in that region. Whereas the relief of this distressing symptom is one of the most creditable of our successes in throat practice, there is no special symptom in any given case of headache which warrants us in the positive assertion that it is dependent on disease of the air passages, and yet this distressing disease is relieved in a large proportion of cases by treatment directed to this region." This is important knowledge to the general practitioner.

Not long since a young lady, aged about twenty-eight, was referred to me by her family physician, a man of very wide experience and large practice. She had been suffering with persistent headache for months, and all treatment seemed useless. Her physician sent her to me with a request to examine her eyes for any refractive error that might be present. The eyes were absolutely normal, and from the nature of the case I determined to examine the nose and nasopharynx. She had told me that she was constantly annoyed by phlegm in her throat. I found a hypertrophy of the right inferior turbinated body and a chronic nasopharyngitis. I reported this to her physician, and in the absence of other causes ventured the opinion that

the headache was due to the conditions in the nose and nasopharynx. He smiled significantly and said he did not think so, but that I had better do what I could for the young lady. I did what I could, and she reported rapid improvement. I have not heard from her in some time, and so I presume the good effect has been lasting.

Another pointed case was that of a man, aged fifty-five, who was suffering from tinnitus aurium and headache. Posterior rhinoscopic examination revealed the presence of a small, round, hollow ulcer, about the size of a No. 4 shot, situated on the anterior cartilaginous rim of the left Eustachian orifice, and facing toward the posterior wall of the pharynx. I touched the ulcer with a thirty grains to the ounce silver-nitrate solution, obtaining almost immediate relief from the symptoms. This was a simple affection, yet a peculiar one, and I can find no account of any similar condition in any of the text-books.

Reflex headache may also be caused by impacted cerumen, foreign bodies, and other abnormal aural conditions.

Cardiac Reflexes are often met with where there is irritation over a portion of the pneumogastric area. A striking instance of this is as follows:

A young woman, aged twenty-four, was referred to me a few weeks ago, with the statement by her physician that she was in perfect health as far as his examinations could determine. Nevertheless, she was attacked almost daily with faintness, even to syncope, and much precordial distress. I removed a hypertrophy from the vault of the pharynx, with the result of marked improvement of the symptoms.

Faintness due to cardiac reflex is often caused by syringing out the external ear, by catheterization and inflation of the middle ear, and even by the introduction of a speculum into the external meatus. I have seen a big, healthy-looking man swoon away on the application of the curette to an aural polyp.

The Gastric Reflex is familiar to every one—tickling of the throat causing vomiting. Cases of nausea and vomiting from aural irritation have been recorded, and Mr. Yearsley has cited an interesting case, in his paper on aural reflexes, in which the gastric and cardiac reflexes were combined.

Epilepsy is said to be caused in not a few instances by abnormal conditions in the upper air passages. The well-known Marshall Hall considered the immediate cause of epilepsy to be spasm of the glottis combined with reflex spasm of the cervical muscles, resulting in venous engorgement and coma. Accepting this theory as true only in some cases, it can be readily understood that there could be an intimate relation between abnormal conditions of the upper respiratory tract and the causation of epilepsy. Personally I have never seen a positive illustration of this, yet from the number of authentic cases on record it would seem to be the duty of the attending physician to ascertain, and remedy if necessary, the existing conditions in the upper air passages of every epileptic.

Vertigo, Aphonia, Spasms of Pharynx and Œsophagus, and other pneumogastric reflexes have been observed, but are not so common; hence I shall not dwell upon them.

There are a large number of important nasal reflexes, other than pneumogastric; too many even to be mentioned in this paper. Bosworth devotes a chapter to them in his book on "Diseases of the Nose and Throat." Aside from this instance, I know of no text-book treating directly of reflexes. Other authors give only passing mention to some of the commoner ones, usually without remark or emphasis; yet it is plain to the simplest mind that they play an important part in practical, up-to-date, every-day medicine.

I have dealt only with the most common of the reflexes occurring in the regions supplied by the vagus and the ones which recommend themselves to the joint interest of the general practitioner and the specialist. I say joint interest, for it is generally necessary that the family physician should first recognize the existence of these conditions, preparatory to their falling into the hands of the specialist. There are, of course, many other and common reflexes which I have not mentioned, particularly of the eye, ear, and nose. Even to enumerate them would require entirely too much space at this time. Those that I have emphasized I particularly recommend to the hearty consideration and more general recognition of the medical faculty, not alone for the good of mankind, but for personal glory, for it often happens that more fame is to be gained by successful treatment of a persistent headache or an annoying cough than by the satisfactory conduct of a case of chronic Bright's disease or typhoid fever.

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LIGATURE OF THE LEFT SUBCLAVIAN IN THIRD PART FOR AXILLARY ANEURISM—RECOVERY—LIGATURE OF THE INNOMINATE FOR INNOMINATE ANEURISM—ALSO LEFT SUBCLAVIAN IN ITS FIRST PART FOR ANEURISM OF THIRD PART—RECOVERY.[1]

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It is not my intention here to read a paper on the history of aneurism. I would not have the temerity to do that before a body of men who, like myself, have already had the privilege of listening to a most able and exhaustive paper on this subject by our most learned friend and confrère, Dr. Edmond Souchon, to whose paper I am indebted for some of the most valuable technique employed in my operations. My paper is drawn from a clinical aspect; is nothing more than the report of three cases of aneurism of the neck which I have operated on, with a few deviating steps from the hard-beaten path which I have dared to venture.

I will first report a case of ligature of the left subclavian in its third part for axillary aneurism. About three years since, there entered a patient in our hospital named Cas. A——, an American, forty-three years of age, complaining of a pulsating tumor, about the size of a hen's egg, under the left arm. He gave the history of having been shot in the back by his son with a shotgun loaded with No. 4 shot, while engaged in a difficulty with his wife. Five cicatrices marked the entrance of as many shot—two near the spine, one in the base of the neck, one in the scapula above its spine, and the other near the shoulder-joint. His wound was inflicted three months prior to his entrance in the hospital, and the suffering which the aneurism caused was very great. The function of the arm being entirely destroyed, I ligated the left subclavian in its third part. The wound healed kindly and the patient made an uneventful recovery. No pulse was perceptible in the left wrist for fifteen days. However, the temperature in the arm was at all times good and the pain and swelling rapidly subsided. The patient was discharged in good condition four weeks after the operation. I chanced to see him and his wife seven months later, when he informed me that he was entirely well and a much better man for his experience.

Ligature of the Innominate.—Caroline H——, a negress, aged forty-two years, was received in the

[1] Read before the Louisiana State Medical Society.

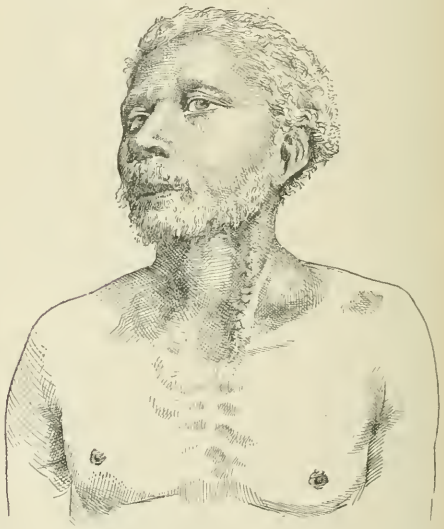
Shreveport Charity Hospital with a pulsating tumor, about the size of a large marble, behind the inner third of the clavicle. She complained of difficulty in breathing and a dull aching pain in that region. She gave no history of traumatism, nephritis, syphilis, or any of the acute infectious diseases; there was no redness or tenderness about the parts. These local symptoms together with the very audible bruit left no room for a mistake in the diagnosis of idiopathic aneurism, which was supposed to be of the common carotid near its origin. Her expression was languid, pulse only 60, and her general physical condition not good. My incision was begun on the sternum, two inches below its crest, and carried across the sterno-clavicular articulation parallel to but one-half an inch external to the inner border of the sterno-mastoid muscle, the entire incision measuring seven and one-fourth inches. The sternal attachment of the sterno-mastoid muscle was now divided close to the sternum, care being taken of the anterior jugular vein. The cervical fascia was exposed and divided in the line of the superficial wound. The common carotid was next exposed and traced to its origin. It was now that I discovered that I was contending with an aneurism of the innominate at its bifurcation and not of the common carotid, as I had supposed. The innominate was followed down to within a quarter of an inch of the aorta. The artery was cleaned and special care taken to avoid wounding the innominate vein, the vagus, and pleura. My needle, carrying No. 8 braided silk, was passed from within out and drawn sufficiently tight to control the circulation without severing the coats of the artery.

The wound healed primarily and the patient did well for four days, but she then began to show signs of coma, and died of cerebral anæmia on the ninth day. There was never discovered a pulse either in the right arm or in the temple, and it was interesting to note the difference in temperature of the corresponding sides during the first two days. The first forty-eight hours her pulse was 40 a minute and very feeble, but soon began to increase in volume and reached 68. By this time, however, her strength was too nearly expended for the reaction to sustain her. Had this latter condition existed from the first, I believe that a sufficient collateral circulation would have set up, the brain would have had its required amount of blood, and my patient would have recovered. Autopsy of the brain revealed a little softening and a slightly atrophied condition of the right side. I dissected the innominate artery and found my ligature encysted without the slightest irritation. Of one hundred and fifteen cases collected by Dr. Souchon in five there were cerebral symptoms; all were fatal.

Ligature of the Left Subclavian in its First Part for Aneurism of Third (Recovery).—Statistics do not offer much encouragement to one undertaking the radical cure of aneurism, by ligature either of the innominate or of the subclavian in its first part. Ligature of the innominate is much easier and not nearly so dangerous as that of the first part of the left subclavian, since the former is not so deeply situated nor so closely allied to vital structures. Ligature of the innominate has been undertaken in all twenty-one times, with one recovery. The right subclavian has been ligated in its first part fifteen times, with a similar result; the left subclavian has been ligated in its first part only twice, once by Dr. J. Kerney Rogers, of New York, whose patient died of secondary hemorrhage on the thirteenth day. The second case is my own, which I am now about to report.[1]

[1] It is true, however, that Dr. Halsted recently successfully ligated this vessel for the extirpation of a tumor. It was not ligated in continuity and the operation was altogether a different procedure with a different aim in view.

The operation for a long time was unanimously considered impracticable, and, until the day of Kerney Rogers, baffled the courage, ingenuity, and skill of the best operators as to some means of executing it, the situation of the artery being so deep and its relation with the most vital structures so intimate. Wyeth considers the operation of ligation of the first part of the left subclavian as the most formidable in the domain of operative surgery. Sir A. Cooper failed in an attempt to secure the vessel, and is said to have wounded the thoracic duct. Jacobson, in his "Surgery," writes: "It seems most doubtful whether the improvement in modern surgery will ever render this a successful operation; however, as it affords good practice on the dead subject, it will be given." Erichson considers the operation as bad in principle and most unfortunate in practice, and that it should be banished from surgical practice. Bryant says ligature of the subclavian in its first part on the left is scarcely practicable, and Mulley says the operation is quite out of the question. Treves believes that no artery could be less favorably placed for the application of a ligature, and in like



unencouraging manner treat all authorities writing on this subject. Yet in the face of these words of warning emanating from the brightest stars of the surgical world, when confronted with a malady so universally fatal we are prompted to summon courage and skill and attempt what has heretofore seemed an impossibility.

A negro by the name of James Hubbard, aged fifty-six years, was admitted to the Shreveport Charity Hospital with an aneurism, about the size of an orange, involving the third part of the left subclavian. The corresponding shoulder and arm were very œdematous and supported by the right hand. He complained of a constant great weight and aching of the parts; that he never had one moment of relief. He stated that about April 1st, while chopping a piece of timber overhead with a heavy axe, suddenly his arm gave way and the axe dropped by his side. After he had rubbed his arm for a moment its usefulness was restored and he proceeded with his work. Shortly after this a small pulsating tumor was noticed in the supraclavicular fossa, which obtained the size of an orange a month later (March 7th), when I operated in the presence of Drs. D. H. Billieu, Randall Hunt, and F. S. Furman, assisted by Dr. R. H. Gray and the hospital internes,

J. W. McGehee, D. J. Woolsworth, and J. D. McAnn. My incision was begun on the sternum, two inches below its crest, and carried across the sterno-clavicular articulation parallel to but one-half an inch external to the inner border of the sterno-mastoid muscle, the entire incision measuring seven and one-fourth inches. I then divided the sternal attachment of the sterno-cleido-mastoid muscle, and penetrated the deep fascia by blunt dissecting with flat curved scissors. I was now brought in contact with the internal jugular vein and actually denuded the carotid artery of its sheath two inches in an attempt to go between it and the vein, but at last was compelled to abandon this route and proceed by the tracheal side to the inner edge of the scalenus anticus muscle, half an inch above the first rib. My finger placed at the bottom of the wound first recognized the dorsal vertebra, then the artery, which was dissected clean, and an aneurism needle, carrying No. 8 braided silk, passed beneath it from the inner side. The pulse in the left arm was now taken note of and found to be of the same character as when the operation was begun, but when the ligature was tightened it ceased entirely. I was careful to see that no twist was in my ligature, that the side and not the edge lay in contact with the vessel, and that it was drawn only sufficiently to control entirely its circulation. A second ligature in like manner was placed about one-sixteenth of an inch above. The broad base of my first incision rapidly formed itself into a cone with a very narrow apex, which made ligature of this deep-seated artery extremely difficult. During the operation I found it necessary to use a long-bladed smooth retractor in order that it might be applied deeply in the wound and press away the jugular vein and aneurismal tumor, which was almost in contact with the trachea.

The divided segment of the sterno-mastoid muscle was brought together with catgut and the wound closed with catgut and dressed with iodoform collodion. Primary union subsequently followed under one dressing. It was not necessary to ligate a single bleeding point. My patient made an uneventful recovery, and is making himself generally useful about the hospital on this, the ninth week after operation.[1] The accompanying cut, from a photograph taken five weeks subsequent to operation, will show my line of incision; also the aneurismal tumor reduced two-thirds in size. You will observe that I have made my incision in a straight line and not angular, contrary to the advice of all text-books. The greatest danger of the preaseptic period was sepsis and secondary hemorrhage, the frequency of which drove many of the most skilled operators to abandon the operation; but with the advent of asepsis, the rapid healing of wounds, and the improved ligature, these dangers have vanished. I am sure straight incision and the preservation of muscle continuity favor primary union and therefore lessen the chances for septic infection, and offer a great advantage over the division of several muscles and an angular incision, as formerly prescribed. There is also an advantage in making the incision a little to the outer side of the inner border of the sterno-mastoid muscle, since by so doing we overcome the resistance of the skin in retracting outwardly and thus afford a wider field for operating. As Dr. Souchon in his deductions on aneurisms remarked, strict asepsis is the sheet anchor, and for that reason I do not take any undue credit to myself, but believe my success was because the day had come when the operation was to be performed by some surgeon. The reason why J. Kerney Rogers did not succeed was because he operated about fifty years too soon. While animal ligatures are rapidly growing in my favor, I must confess that on these occasions I was prejudiced in favor of silk.

[1] The œdema of his arm, shoulder, and hand has entirely disappeared, normal function being about restored, but no radial pulse is yet perceptible in the left arm.

OLIGOPHOSPHATURIA — A WELL-DEFINED AND IMPORTANT SYMPTOM IN DISEASE.

By GEORGE FREDERICK LAIDLAW, M.D.,
NEW YORK.

When Dr. Richard Bright entered upon the series of observations that has culminated in the worldwide recognition of the kidney lesions that bear his name, there was associated with him a man as enthusiastic in research and as accurate in his workmanship as was Bright himself. This man was Bostock. Bright studied the lesions in the kidney and established the general features of his proposition of the dependence of dropsy and albuminuria upon these renal changes. Bostock made chemical analyses of the urine and of the blood of the same cases, and supplied facts concerning the deranged urinary separation, without which much of Bright's proposition would have remained pure conjecture. All studies in the anatomy of renal disease which have been made since that time are based on the work of Bright. Our knowledge of the chemical properties of the blood and the urine in Bright's disease is based on the work of Bostock.

Bostock discovered that the urine of the patients under consideration was deficient in solids: he noted the deficiency both in urea and in the mineral salts. In the blood he found a substance resembling urea, and also an excess of the same salts that were deficient in the urine, and thus laid the foundation of our knowledge of uræmia. The presence of urea in the blood of nephritic cases was confirmed by Wilson in 1833,[1] and by Christison in 1839.[2] In this manner the substance urea took the lead in interest and apparent importance, to the neglect of its fellow urinary constituents, the inorganic salts. A review of the publications of the past twenty years shows that this attitude is still maintained by many competent authorities.

However, in our recent urological literature there are signs of an awakening. The inorganic salt is growing in importance, and the quantity of urea excreted is becoming less and less an element of certainty in prognosis. The growth of the idea has been slow. There was, first, in 1827, Bostock's observation[3] that in the newly discovered kidney disease the inorganic salts of the urine were present in much smaller quantity than in health. Next came Dickinson, in 1868,[4] with his careful quantitative analyses, revealing the fact that in chronic kidney disease there is a difference in the excretion of the different salts. In "granular degeneration" or interstitial nephritis, in amyloid kidney, and to a less extent in tubal or diffuse nephritis, he found that the excretion of phosphates in the urine during twenty-four hours was markedly deficient, the sulphates being less affected, and the chlorides usually appearing in normal quantity until late in the disease. There is another long interval until, in 1881, Fleischer[5] published his studies on the urine of nephritis. In speaking of chronic interstitial nephritis, he says: "The amount of urea excreted compared with that of the control person was sometimes very considerable; in other cases there was scarcely any decrease. . . . The excretion of chlorine was the same as in healthy persons. . . . Both absolute and relative excretion of sulphuric acid in one

[1] "On Fits and Sudden Death in Connection with Disease of the Kidney."
[2] "On Granular Degeneration of the Kidneys and its Connection with Dropsy, Inflammations, and Other Diseases."
[3] "Reports of Medical Cases."
[4] "On the Pathology and Treatment of Albuminuria."
[5] Deutsches Archiv für klinische Medicin, 1881, p. 129.

case was lower; in another markedly less than in healthy persons. . . . The phosphoric acid excreted (in the form of phosphates) was in all cases, relatively and absolutely, decreased," as compared with a healthy person of the same sex and weight, and kept on the same diet. Fleischer discusses the reason for this peculiar inability of the chronically diseased kidney to excrete the phosphates, while the chlorides and sulphates pass freely into the urine: but he arrives at no profitable conclusion thereon.

In 1884, Purdy[1] is able to state that "he regards the diminution of phosphoric-acid excretion (in the form of phosphates) by the kidneys almost as constant a feature of the urine in Bright's disease and allied lesions of the kidneys as the presence of albumin in the urine." Again, speaking of chronic interstitial nephritis: "More or less reduction is to be noted of the quantity of all the urinary solids, the chlorides suffering the least reduction and the phosphates the most. With regard to the phosphates in particular, the diminution in the quantity of phosphates in the urine may be regarded almost as constant a feature of this disease as the presence of albumin."

Clifford Mitchell has confirmed this statement.[2]

I can not only confirm the statement of these observers, but will go a step further, and say that a deficient excretion of phosphates in the urine is the only constant urinary symptom of chronic nephritis with interstitial changes; it is more constant than albuminuria, more constant than low specific gravity or increased quantity of urine.

Bright himself, in 1836,[3] Christison in 1839,[4] Rayer in 1839,[5] and all observers since have noted the variability of albumin in the urine of the "granular kidney" or chronic interstitial nephritis. It is recognized by all that in this disease albumin may be very scanty, or may even disappear for long periods. Cases are recorded by Fleischer and Rosenstein, to which I can add six from my own observations, in which the excretion of urea, chlorides, and sulphates was practically normal; but neither I nor any other urologist has been able to record a case of chronic interstitial nephritis with a normal excretion of phosphates.

It appears, then, that in chronic interstitial nephritis and in waxy kidney there is a constant urinary symptom, namely, a diminished daily excretion of the salts of phosphoric acid. For convenience, in my clinical records and urological studies, I have called this symptom "oligophosphaturia," a self-explanatory term, analogous to "oliguria" and "oligocythæmia."

Constant urinary symptoms of chronic interstitial nephritis are not so numerous that we can afford to neglect any of them. It remains to consider how far this symptom, oligophosphaturia, is pathognomonic of chronic nephritis. Deficient daily excretion of phosphoric acid is not confined to nephritis; it is found in gout (Purdy) and chronic lead poisoning (Gaucher), some forms of anæmia (Deeke and Simon), in many acute fevers (Purdy and Simon), including the febrile stage of intermittent fever (Simon), during the intermission (Purdy), during pregnancy (Purdy), in acute yellow atrophy of the liver (Frerichs and Fleischer), and in cirrhosis of the liver (Hegar).

Note that most of these conditions are in some way related to deficient renal activity. Gout and lead poisoning frequently terminate in renal cirrhosis; anæmia tends to insufficient nutrition of the renal tissue, degeneration, and inefficiency; and the acute fevers, with their scanty, heavy urines and frequent albuminuria, point plainly to inadequate renal action. In my experience, the oligophosphaturia of pregnancy is a frequent but not an invariable occurrence. It is related distinctly to a greater or less degree of renal competence. The relation of oligophosphaturia to hepatic disease deserves more extended discussion than is possible in this article.

In a further communication, I hope to discuss the relation of this deficient excretion of phosphates to the "prealbuminuric stage of Bright's disease," described by Mahomed,[1] and the "diathèse Brightique" of Dieulafoy, and incidentally to demonstrate the value of the symptom in the early diagnosis of chronic nephritis.

The object of the present paper is simply to demonstrate to my fellow urologists the increasing importance that is being attached to the persistent deficiency of phosphates in the urine; to suggest a descriptive name, oligophosphaturia; and to urge the more frequent quantitative estimation of these salts by accurate analysis as an important element in every examination of urine. The estimation is easily and quickly made by the uranium-nitrate titration that is described in all standard text-books.

[1] "Practical Urinalysis and Urinary Diagnosis."
[2] Oral communication to the writer in 1893.
[3] Guy's Hospital Reports.
[4] "On Granular Degeneration of the Kidneys."
[5] "Traité des Maladies des Reins."

Progress of Medical Science.

The Treatment of Pott's Disease.—Dr. Périer (*Journal de Médecine de Paris*, No. 5, 1897) outlines the following treatment: 1. Upon the first manifestation of the disease the child should be put to bed, on a horsehair mattress, and kept in the horizontal posture. 2. It should, without change in posture, be kept as much as possible in the sunshine, either on land or water. 3. In winter the child receives before breakfast one-half to one tablespoonful of cod-liver oil, occasionally the syrup of tannic iodide. 4. Before each of the two chief meals the patient receives, during the first two weeks, from one to four drops of Fowler's solution; during the two succeeding weeks, a teaspoonful to a tablespoonful of the syrup of the iodide of iron. 5. Occasionally, instead of the above-mentioned drugs, the following mixture is given in one-half to one dessertspoonful doses:

℞ Sodii phosphat.,
Potassii phosphat. ..... āā 5
Syr. gentianæ 100
Vini Malagæ 500

6. The skin functions are to be improved and kept active by means of baths, massage, etc. 7. The diet is very important. Young children should receive meat, eggs, meat powders, and the like; if the digestion is good, and in older children, vegetables of all sorts should be given.

The Blood in General Paresis.—Dr. S. E. Jelliffe presents, in the *State Hospitals Bulletin*, vol. ii., Nos. 3, 4, 1897, the results of a study of the blood in twenty cases of general paresis. His results would seem to show that in this form of mental disease the blood-forming organs are certainly not primarily affected, and that they play but little part in the etiology or the course of the disease. The most striking and constant blood change consisted in a uniformly lowered hæmoglobin content, which would vary from fifty-two to ninety per cent. This was about the only constant factor observed. Many observers have noted in this disease a decrease in the number of red cells, but in these observations no such diminution was observed. The general conclusions expressed would seem to indicate that in general paresis there are no constant blood changes, that from a review of his own cases and those recorded in the literature of the subject there would seem to be a deficient formation in the lymphocytes, and that on a general average there is an increase in the large mononuclear leucocytes.

[1] "Medico-Chirurgical Transactions," 1874.

MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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OPEN-AIR TREATMENT OF PHTHISIS.

THE opinions now held in regard to the treatment of tuberculosis are very different from those prevailing a generation or even a few years ago. Drugs were then generally regarded as the most formidable weapons with which to fight the disease, and the healing virtues of fresh air were almost totally ignored. However, as the study of bacteriology advanced, so also did the old-time views on the cause and treatment of consumption undergo a change, and Koch's discovery, that tuberculosis was produced by a microbe and was consequently contagious, gave the death blow to the existing remedial methods. On this side of the Atlantic the great benefit to be derived from pure air and suitable diet by those suffering from consumption has for a considerable time been fully recognized, and the treatment has been placed on a practical footing by the establishment of properly equipped sanatoria in various parts of the country. Some of the European countries, notably Germany, have followed our lead, while England has been the last to adopt the system, and, in fact, as yet has given it only a tentative trial. That in the United Kingdom the open-air treatment will be more widely followed in the future seems assured, as the movement to that effect is being warmly supported by many of the foremost English physicians. *The Practitioner* for June is devoted to a study of tuberculosis, and contains articles dealing with the disease from various points of view; but the writers of which are, one and all, agreed that climate, hygiene, and diet are the most powerful remedial agents. In the case of the wealthy these desiderata are naturally easily obtained, and the question of sanatoria affects this class to a comparatively slight extent; but for the poor or for those with but moderate means a sanatorium is almost a necessity. Until 1892 America was the only country which provided sanatoria for her poor, an example which has been since followed by Germany, Switzerland, France, Russia, Norway, and other countries. The results of treatment at these different sanatoria brings out one point in particular, namely, that the general methods of treatment are of greater importance than is the climate. Although an atmosphere free from moisture and with an abundance of sunshine, like that of Egypt, is the ideal one for a consumptive, yet most excellent results have been obtained from the open-air treatment in climates lacking these advantages. Dr. Léon Petit says: "In all the sanatoria, whatever their geographical position, the curative results obtained are nearly the same, provided that the hygienic method is applied there in all its scientific rigor. Here the climate may help the cure; . . . there it may hinder it. But it only exerts a secondary influence on the results of the treatment."

From the mass of evidence adduced since the introduction of sanatoria, it would appear that the methods of treatment pursued in those establishments have been most successful, and go far to prove that these methods are the only rational ones. As Professor von Leyden recently said: "The possibility of treatment outside a sanatorium with equally good results cannot be denied, but it requires much more prolonged rest and much more time on the part of the physician, and has by no means so certain a result. In any case I regard it as a great advantage if the patient can spend once or twice a period of several weeks or months in a good sanatorium."

THE SPECIALIST AND THE GENERAL PRACTITIONER.

AN old and familiar saying has it that no question is settled until it is settled rightly. Consequently if old questions keep coming up, it must be because they are still unsettled and the conditions of which they treat are still in an unsatisfactory condition. A forceful contribution to the discussion on the relations between the specialist and the general practitioner has been made in a recent number of the *Colorado Medical Journal* by Dr. Melville Black, of Denver. His thesis is that the general physician should receive a fee for referring cases to a specialist. We understand that his professional work is confined to a special line, and his views are presumably the result of his own experience. His main argument is thus stated:

"The general practitioner is called upon to render every kind of medical and surgical service. If he sees fit to send certain cases to a specialist, he displays a magnanimity unparalleled in other fields of labor. We will admit that in many instances his training and equipment are inadequate in some of the departments now presided over by specialists. The advancement of medicine and surgery has made it difficult for any one man to keep abreast of the entire field. He frequently recognizes that his knowledge in some one department is deficient, and being honest, he confesses his ignorance and sends the patient to a specialist. There are many instances where the practitioner has found it advisable to administer to his patient for several days before it is possible to refer him to a specialist. Again, in his anxiety for the welfare of his patient he may make several visits in the endeavor to cause the latter to consult the specialist, or may lose valuable time in going with him to the specialist. In any event he expends a certain amount of his time for which the patient will not compensate him. The patient and his family have long looked

upon him as their friend and medical adviser. They never think of paying him for aught except actual professional services. They would not consider such services professional, and he would gain their displeasure if he were to present his bill for the same. In case he has treated the patient for a few days, he would better erase any and all such charges for professional services from his books, because the patient considers that he has received no benefit from this treatment; that his physician did not understand his case or he would not have sent him to some one else. Therefore if this bill is presented no attention is paid to it, and if payment is pressed, the next time a physician is needed some one else is called in. Now who is to compensate this physician? There is but one answer—the specialist. If the specialist does not pay him for the time he has expended, no one else does. The specialist can easily learn from the patient the extent of the services rendered by his physician. The latter should then be compensated accordingly."

In those cases in which the opinion of the practitioner is asked as to the matter of consulting a specialist and one is recommended, no fee accrues, for the practitioner has rendered no definite medical service. His opinion has simply been asked as an adviser. He has not been compelled to spend his time on the case.

Dr. Black aptly says that many an obscure practitioner gains standing and even prominence through the specialist. Specialists to whom he refers cases make it a point to speak well of him whenever the opportunity is afforded. This is the only honorable way in which the specialist can return many favors and acts of kindness shown him by the general practitioner. On the other hand, many a specialist can either damn a practitioner with faint praise, or by some remark or even by some mannerism convey to the patient the fact that his treatment previously received at the hands of the practitioner has been far from right. That this is often done, no one who has had much experience with specialists will doubt. The trouble arises from the fact that the two medical men cannot always look at a given case from a common point of view. Here lies one evident danger of specialism—that of seeing a case only from the individual standpoint. "The specialist," says Dr. Holmes, "has only one fang with which to seize and hold his prey, but that is a sharp and cruel canine."

A practical difficulty in the arrangement of the scheme proposed is to find a basis on which an equable settlement could be made. Dr. Black does not recommend that physicians should be paid a stipulated percentage of all fees received from cases referred by them. Such an arrangement might lead to greater evils than those it aims to avoid.

In our view, much of the difficulty existing between the different classes of the profession at the present time is due to the fact that every man who reads the papers thinks that he knows at least half as much as the doctors. Between the various domestic remedies mentioned on the "only woman's page" of modern journalism, the semimedical lectures delivered in so many places, etc., the public has become demoralized, and the specialist has been placed in a position which he, if he be a right-minded man, is the last to claim. It would certainly do much to lessen the friction between him and his brother if there could be some well-understood principle of relative compensation which would be of universal application. In general, it may be said that most practitioners are on good terms with most specialists. Personal friendships do much to lessen the friction between those who are in a sense rivals, and it is a pity that those elements of character which underlie personal friendship cannot be broadly extended to all the relations of those who practise the healing art.

A DIPHTHERIA-ANTITOXIN DISCUSSION.

It is a strange fact that there still are some who reject *in toto* the antitoxin treatment of diphtheria. It is easy to understand that some might be dissatisfied with certain phases of the use of antitoxin and should seek modifications in its preparation and administration; but statistical evidence is so overwhelmingly in favor of the efficacy of this form of treatment that it is difficult to understand how it can be swept aside as inconclusive. In the *Berliner klinische Wochenschrift*, No. 27, 1898, Baginsky has taken the trouble to answer an objector to antitoxin treatment, in the person of Kassowitz, who had given his views at a meeting of a medical society in Vienna some time earlier in this year. He says that he cannot see how a fair mind could fail to be impressed by the reduction in mortality in any disease from about fifty per cent. to about ten per cent., and, having such figures presented, could fail to inquire into the cause of such a reduction. If such a change in mortality were simultaneous with the introduction of a new and radically different form of treatment, and if the same result were found in several series of cases and by various observers, a non-partisan judge could give only one decision, and that in favor of the new method of treatment. Many such series of cases from unimpeachable sources have been reported, and must be accepted as competent evidence.

Diphtheria is a disease of varied manifestations, and it affects different human organisms with different degrees of intensity. The specific organism varies also in the virulence of its action, and that action may be further modified by the simultaneous presence of other infective organisms. We know that the complications on the part of the heart, kidneys, and nerves are variable and uncertain both in their occurrence and in their course, and it would be unreasonable to expect identical results in all cases from any remedy. We cannot expect antitoxin to repair organic damage to the heart or kidneys, but we can expect it to prevent further damage to these organs, and this it certainly does, if clinical evidence is worth anything. If the remedy is not used soon enough, the damage to these organs may be so great as to be incompatible with life; but death under such circumstances should not discredit the antitoxin. Baginsky emphasizes again the fact that antitoxin from different sources varies greatly in its constitution and strength, and he rightly says that we must be sure of the quality of our thera-

peutic agent, that we must begin treatment early and consequently must make an early diagnosis, and that we must not neglect accessory means of treatment both general and local. It is true that several cases have been reported in which death has resulted very soon after the administration of antitoxin, but if such deaths are really due to something in the antitoxin, they only direct our attention more strongly to the necessity of care in the preparation and use of this agent. It is probable that the victims in these cases died from some cause depending upon changes in the nervous ganglia or in the kidneys, brought about by the action of the diphtheritic poison, and that the use of the antitoxin just before the onset of the unfavorable symptoms had only a temporal relation in respect of these symptoms.

YELLOW FEVER KEPT IN CHECK.

With the beginning of September we are reminded that this much-dreaded summer is nearly gone and the feared epidemic of yellow fever in the Southern States has not yet appeared. There have been sporadic cases at several places in the States bordering on the Gulf, but there has been no serious outbreak anywhere. The latest reports of cases of the disease have come from Key West and Galveston. The State boards of health in Texas, Louisiana, Mississippi, Alabama, and Florida have declared a quarantine against Key West, and some of them against Galveston as well. Encouraging news has, however, been received from both these places. At Key West no new cases have developed within the last three or four days, and it is believed that no fever exists there now. No new cases are reported at Galveston, and the quarantine established against the city has been raised, but it is continued against Fort Point, where the troops are quartered. To both the State boards of health and the Marine Hospital service we owe the fact that no epidemic has followed these sporadic outbreaks. Surgeon-General Wyman has shown that the Marine Hospital service is a most efficient sanitary organization, and one to whose keeping the health of the country may safely be intrusted.

Hospital Corps for Manila.—The following is the constitution of the hospital corps which has been assigned by General Miller to Manila: Major W. O. Owen will be chief surgeon and chief medical officer of the transport *Scandia*, which will carry the men from San Francisco. The others who have been selected are Lieut. Henry Page, assistant surgeon; Drs. Taylor Malaby, Ernest K. Johnstone, and Henry Phelan, assistant surgeons; Robert F. Gerahty, Frank K. Lar, Shelby G. Cox, hospital stewards; S. H. Cappelan, Frederick Gibke, D. S. Hutchins, E. E. Paterson, O. Rynning, Eugene Wood, acting hospital stewards; and one hundred and thirty-nine privates of the hospital corps. Several Red Cross nurses will also be taken. Colonel Stackpole, of the New York volunteers, will be in command of the *Scandia* when she sails, but the hospital corps will be under the command of Major Owen.

News of the Week.

Unappreciative of Medical Treatment.—The editor of the *Kansas Medical Journal* says that military surgeons get the same kind of treatment from their patients as the practitioners at home. In a letter recently published from one of the Kansas volunteer regiments, complaint was made that the sick did not receive proper attention and that for certain ailments they received two pieces of chalk, and the writer suggests that surgeons hereafter give to such complainants a taste of the crude drugs, and reserve tablets for those who appreciate the advances in therapeutics.

The Work of the Red Cross.—In a letter to the *Philadelphia Medical Journal* from Camp Cuba Libre in Florida, Maj. J. F. Clarke, of the army medical service, bears willing testimony to the invaluable services of the Red Cross Society at that place. "No one," he says, "should write from the front without giving great credit to the Red Cross Society for the great work it is doing. Without the aid of this society it would have been difficult to care for the sick in this hospital. Each day the Red Cross gives us fifty gallons of milk, two thousand pounds of ice, thirty dozens of eggs. Besides this it has built for us storehouses, floored our tents, given us hundreds of nightshirts, pajamas, pillows, sheets, buckets, bedpans, and dozens of other articles necessary for the care of the sick. In military channels the stream of supplies flows slowly and with many stops and much formality, but Dr. Kent, who represents the Red Cross here, gives freely and without delay. He has no regulation that prescribes how many bedpans one division must use, but gives all that are needed. This week, with the people of Jacksonville furnishing the motor power, he is going to put electric fans in all the tents."

Ice Cream and Typhoid Fever.—Coseley, some few miles from Birmingham, England, is at present going through an unpleasant experience of an epidemic of typhoid fever. Investigation has been made as to what this may be attributed to, and in at least five cases, *The Lancet* says, it has been traced to the consumption of ice cream. This is sufficient to show that the indulgences of an early age are not free from risks and that the opportunity for the gratification of such tastes requires to be attended with precaution in the manufacture of this much-sought-for dainty. Whether the authorities will be found equal to the occasion remains to be seen, though it is manifest that some intervention is strictly called for.

The Sanitation of Santiago.—The good effect of American methods is already evident at Santiago, where the number of deaths has fallen from an average of one hundred and three to one of thirty-seven a day since the occupation of the city by our troops. A board of inspectors has made a thorough examination of every house in the city, the streets have been cleaned, and the inhabitants are being slowly educated up to the point of looking upon filth as something undesirable and inconvenient. The yellow fever has been stamped out, at least temporarily.

A Curious Statute.—One of the sections of the law creating the Florida State board of health reads as follows: "Any person or persons who shall falsely or maliciously disseminate or spread rumors concerning the existence of any infectious or contagious disease shall be guilty of a misdemeanor, and, upon conviction thereof, shall be punished by a fine of not less than $100, or more than $1,000, or by imprisonment in the county jail for not less than three or more than six months." This is certainly an excellent way to make the outside world suspicious of the health of Florida.

The American Public Health Association will hold its annual meeting at Ottawa on September 27, 28, 29, and 30, 1898.

The Plague in Bombay is again prevailing extensively. During the week ending August 27th there were twenty-three hundred deaths from the disease in the Bombay presidency. The epidemic is spreading, and there has been a fresh outbreak in the State of Hyderabad. An interesting point regarding it is its increasing virulence—from 55.5 per cent. of fatal cases at the beginning to 89.8 per cent. a few weeks later.

The Marine Hospital Service in Hawaii.—Dr. W. D. Carmichael, at present in charge of the Cleveland Marine Hospital, has been appointed superintendent of the Marine Hospital service of the Hawaiian Islands. He will be stationed at Honolulu.

Illness of the Queen of Denmark.—A report from Copenhagen states that the Queen of Denmark is very seriously ill of kidney disease. She is suffering greatly from general anasarca.

A Woman Army Surgeon.—Dr. Anita Newcomb McGee has been appointed acting assistant surgeon in the United States army, and was regularly sworn in on August 29th. She has the rank and pay of a second lieutenant. Dr. McGee is a graduate of the medical department of Columbian University, Washington, in the class of 1892. Since the beginning of the war she has been in charge of the selection of the female nurses for the army.

Sickness in Porto Rico.—It is reported that fully ten per cent. of the troops in Porto Rico are suffering from malaria or typhoid fever, and all soldiers who can be spared from garrison duty will be sent back to the Northern States as soon as possible.

Spanish Opposition to the Red Cross.—A ship which sailed a few days ago from Santiago for Havana with a cargo of Red Cross supplies intended for the relief of the suffering of that city, reached Havana on Monday, and because Miss Clara Barton, who was in charge, had failed to provide a manifest of the cargo, the customs officers imposed a fine of $500 and forbade the landing of the supplies except on payment of heavy duties. Being no longer able, as at Caney, to shoot surgeons and others wearing the emblem of the Red Cross, the Spaniards in Cuba resort to these and other petty but exasperating actions expressive of their dislike for all who are inspired with humane motives.

Examination for Admission to the Marine Hospital Service.—A board of officers will be convened at Washington, Wednesday, November 9, 1898, for the purpose of examining candidates for admission to the grade of assistant surgeon in the United States Marine Hospital service. It is desired that applications for this examination be made before November 1st. Candidates must be between twenty-one and thirty years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to character. The following is the usual order of the examination: 1, physical; 2, written; 3, oral; 4, clinical. In addition to the physical examination candidates are required to certify that they believe themselves free from any ailment which would disqualify for service in any climate. The examinations are chiefly in writing, and begin with a short autobiography by the candidate. The remainder of the written exercise consists in examination on the various branches of medicine, surgery, and hygiene. The oral examination includes subjects of preliminary education, history, literature, and natural sciences. The clinical examination is conducted at a hospital, and, when practicable, candidates are required to perform surgical operations on the cadaver. Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur. Upon appointment the young officers are, as a rule, first assigned to duty at one of the large marine hospitals at Boston, New York, New Orleans, Chicago, or San Francisco. After five years' service assistant surgeons are entitled to examination for promotions to the grade of passed assistant surgeon. Promotion to the grade of surgeon is made according to seniority, and after due examination as vacancies occur in that grade. Assistant surgeons receive $1,600, passed assistant surgeons $2,000, and surgeons $2,500 a year. When quarters are not provided, commutation at the rate of $30, $40, or $50 a month, according to grade, is allowed. All grades above that of assistant surgeon receive longevity pay, ten per centum in addition to the regular salary for every five years' service, up to forty per centum after twenty years' service. The tenure of office is permanent. Officers travelling under orders are allowed actual expenses. Further information may be obtained by addressing the supervising surgeon-general, United States Marine Hospital Service, Washington, D. C.

Recruits Wanted for the Hospital Corps.—There has recently been a great falling off in the number of applicants for positions in the hospital corps of the army, the impression being that since the cessation of hostilities there is no need for them. This, however, is a mistake. The demand is as great now as before. When the volunteers in the hospital service are discharged, the corps will not be more than half what is required. With a standing army of one hundred thousand men, a total of four thousand men for the hospital corps will be necessary. The recruits must be between eighteen and thirty-five years of age.

Sinking of a Hospital Ship.—The hospital ship *Olivette*, which was lying near the quarantine station at Fernandina, Fla., sank on Wednesday morning. Aboard of her were a hospital corps of thirty-five and a crew of forty-five persons, all of whom escaped without injury, and practically without clothes.

American Association of Obstetricians and Gynæcologists.—This association will hold its eleventh annual meeting in the banquet hall of the Monongahela House at Pittsburg, Pa., Tuesday, Wednesday, and Thursday, September 20, 21, and 22, 1898. The association will meet in executive session on Tuesday, September 20th, at 9:30 A.M., for the election of new fellows. The open session for the reading of papers will begin at ten o'clock. Recess for luncheon at 1 P.M. Afternoon session at three o'clock; recess at 5:30 P.M.; evening session at eight o'clock. The morning session will begin Wednesday at ten o'clock for the reading of scientific papers. Recess at one o'clock. Afternoon session at three o'clock. Adjournment at six o'clock. At 6:30 P.M., Wednesday, the executive session will convene for the election of officers, and for such other business as may come before it under the rules. The morning session will begin Thursday at 9:30 o'clock to continue until 1 P.M., when recess will be taken for luncheon. The afternoon session will be called at three o'clock and at five o'clock the closing ceremonies will be held. A full attendance is specially requested at the final session. At 8 P.M., Wednesday, immediately after the executive session, the annual dinner will be served at the Monongahela House. Thirty-two papers have been promised, and their titles are published in the preliminary programme recently issued. One of the sessions, or as much thereof as may be necessary, will be devoted to the presentation of pathological specimens and their histories, with discussion pertaining to the same. It is especially requested that photographs of these specimens be filed with the histories, from which engravings will be made for the transactions. Dr. Charles A. L. Reed, of Cincinnati, is the president, and Dr. William Warren Potter, of Buffalo, the secretary.

Foreigners at the Meeting of the British Medical Association.—There were sixty-four foreign guests and visitors registered at the Edinburgh meeting of the British Medical Association. Of this number fourteen were from the United States, five of them being from New York City.

The Library of the Late Dr. R. C. M. Page, of this city, has been presented by Mrs. Page to the University of Virginia. The library contains between six hundred and seven hundred volumes.

Prof. Rudolph Virchow has been made an associate of the Paris Academy of Sciences. He has been for many years a corresponding member.

The Prince of Wales' Hospital Fund.—The new stamps of the Prince of Wales' hospital fund will be issued during this month. The stamps, which bear a face value of 1s., 2s. 6d., 5s., and 10s. respectively, are each of different design and color.

The Mississippi Valley Medical Association.—The following is the preliminary programme for the meeting of this association at Nashville, October 11 to 14, 1898: B. Sherwood-Dunn, Boston, Mass., "Why I have Abandoned the General Practice of Vaginal Hysterectomy;" J. A. Stucky, Lexington, Ky., "Tonsillitis or Quinsy, Causes and Treatment;" H. W. Whitaker, Columbus, Ohio, "Pichi;" A. Ravogli, Cincinnati, Ohio, "A Few Practical Points in the Treatment of Posterior Urethritis;" Frank Parsons Norbury, Jacksonville, Ill., "The Neuro Hypothesis of Rheumatoid Arthritis;" A. M. Osness, Dayton, Ohio, "Diphtheria and its Logical Treatment;" F. E. Kelly, La Moille, Ill., "Varicocele:" F. F. Bryan, Georgetown, Ky., "A Plea for Pelvic Peritonitis and Cellulitis;" John M. Batten, Pittsburg, Pa., "Syphilis;" George W. Johnson, Dunning, Ill., "Gonangiectomy and Orchidectomy for Hypertrophied Prostate in Old Men;" George F. Keiper, Lafayette, Ind., "Wounds of the Lacrymal Apparatus, Report of Operation for Restoration of Canaliculi Obliterated by Traumatism:" Shelby C. Carson, Greensboro, Ala., "A Consideration of the Limit to Operative Gynæcology;" W. H. Humiston, Cleveland, Ohio, "The Relations of the Gynæcologist and the Neurologist;" W. Gaston McFadden, Shelbyville, Ind., "Intermingling and Changing of Type in Diseases;" William F. Barclay, Pittsburg, Pa., "Mercury and its Action:" J. Rilus Eastman, Indianapolis, Ind., "The Diagnosis of Gonorrhœa in Women;" S. E. Milliken, Dallas, Tex., "Subperiosteal Removal of Caries from the Pelvic Basin, with the Report of Cases;" Thomas Charles Martin, Cleveland, Ohio, "Complete Inspection of the Rectum by Means of Newer Mechanical Appliances;" George D. Kahlo, Indianapolis, Ind., "Hydrotherapy in Stomach Diseases;" Alex. C. Wiener, Chicago, Ill., "Surgical Treatment of Infantile Paralysis;" James M. M. Parrot, Kingston, N. C., "Suprapubic Cystotomy *versus* Perineal Section;" R. C. Pratt, McKenzie, Tenn., "Report of Cases in Obstetrics with Complications;" John L. Jelks, Memphis, Tenn., "The Relationship between the Genito-Urinary Tract and Rectum, with Special Reference to the Female;" T. Virgil Hubbard, Atlanta, Ga., "How Should We Treat Typhoid Fever?" W. W. Taylor, Memphis, Tenn., "A Clinical Contribution to Ectopic Gestation;" M. Goltman, Memphis, Tenn., "Interesting Surgical Cases;" I. N. Love, St. Louis, Mo., "The Bicycle from the Medical Standpoint;" Jos. Price, Philadelphia, Pa., "Surgical Treatment of Pus in the Pelvis;" Andrew Timberman, Columbus, Ohio, "Operations on the Mastoid, When and How Performed:" R. A. Bate, Louisville, Ky., "Arthritic Diathesis:" Charles W. Aitken, Flemmingsburg, Ky., "Diagnostic and Therapeutic Uses of Tuberculin;" G. W. Halley, Kansas City, Mo., "Some Pathological Conditions of the Ovaries and Adnexa Causing Pain."

Free Treatment of Deformed Children.—The Minnesota legislature appropriated last year a sum of $10,000 to provide for the treatment in hospital of all crippled and deformed children whose parents are too poor to pay for proper medical care at home.

Typhoid Fever at Camp Wikoff.—There are grave fears of an epidemic of typhoid fever in Camp Wikoff, at Montauk Point. There are many cases there now and it is believed that the water supply will surely become infected. Dr. Senn, who was sent there on his return from Porto Rico, is reported as saying that the camp will be a pest hole in a month or six weeks unless the troops are sent away. He said that the sanitary provisions throughout the camp and in the general hospital are inadequate to prevent the spread of typhoid fever, and that the soil at Montauk Point is of such a nature that nothing can prevent the contamination of the wells. In his opinion the establishment of the camp was a grave mistake. For similar reasons he had advised against the selection of the Chickamauga camp location, and he maintained that the soundness of his position had been proven by the event. Major Brown, the executive head of the general hospital, disputes Dr. Senn's statement of the conditions and his conclusions. He says that the sanitary arrangements at the hospital are such that the water cannot become infected with typhoid bacilli. The soiled clothes of the patients are disinfected before they are washed, and every possible precaution has been taken. Dr. Brown is quoted as saying that Montauk Point is a most suitable place for the camp. Surgeon-General Sternberg inspected the site before it was selected, and we believe that the events will justify his approval of the place and that Dr. Senn will prove to have been in this instance a false prophet.

Obituary Notes.—Dr. Ubald Laurier, brother of Sir Wilfrid Laurier, of Canada, died at Athabaskaville, Quebec, August 26th. He was well known in the United States, having practised for years in Chicago.—Dr. John L. Griffin, founder of East Los Angeles, Cal., and one of the pathfinders who took part as a government surgeon in the conquest of California, died recently. He was a graduate in medicine of the University of Pennsylvania in the class of 1837.—Major George McCreery, surgeon in the United States army, died on board the transport *Catania* at sea. He was born in New York, and was a graduate of Bellevue Hospital Medical College in 1877. He was appointed an assistant surgeon, February 17, 1880, and was promoted to the rank of captain, February 17, 1885. He attained the rank of major at the beginning of the present war. The body was buried at sea.—Dr. Owen J. Ward, of this city, died on August 17th, at the age of fifty-eight. He was graduated from the medical department of the University of the City of New York in 1865, and afterward served as house surgeon at St. Vincent's Hospital. He was visiting surgeon to Gouverneur Hospital.

The American Climatological Association held its fifteenth annual meeting at Maplewood, N. H., on Wednesday and Thursday of this week, under the presidency of Dr. E. O. Otis, of Boston. The subject of the president's address was "Avenbrugger and Laennec, the Discoverers of Auscultation and Percussion."

The Tuberculosis Congress.—The fourth congress for the study of tuberculosis was held in Paris, July 27th to August 3d, under the presidency of Professor Nocard, of Alfort. Many foreigners were present by invitation, among them Maragliano, Perroncito, Denys, Weichselbaum, and Bang. Eight or ten of the speakers related their experiences with Koch's tuberculin R, and were practically unanimous in condemning it, the sole point on which there was any disagreement being whether it did harm or not. Dr. Benoit, of Paris, was the only speaker at the congress who thought the discussion on the merits and demerits of tuberculin R should not be closed too hastily. The president, in his address, expressed a very positive opinion that tuberculosis is spread only by contagion, and that heredity is a negligible factor. Dr. Hirschfelder, of San Francisco, read a paper descriptive of oxytuberculin.

The Army and the Red Cross.—Surgeon-General Sternberg has published a statement regarding the attitude of the army medical department toward the Red Cross Society. In it he says: "It has been repeatedly charged in the newspapers that I am hostile to this organization and have refused to accept its assistance in the care of our sick and wounded soldiers, and that as a result of this refusal there has been unnecessary suffering. These charges are without foundation, except in so far as I have objected to the sending of female nurses with troops in the field engaged in active operations. We have a Red Cross hospital corps in the army of enlisted men, whose duty it is to render first aid to the wounded upon the field of battle and to care for the sick in our division field hospitals, and I have been of the opinion that female nurses would be an incumbrance to troops during active operations; but so soon as serious sicknesses developed in our camps and it became necessary to treat typhoid fever cases in our field hospitals, I gladly accepted the services of trained female nurses for the division field hospital, and in our general hospitals we have employed them from the first. The general testimony from the surgeons in charge of these hospitals has been that their services have been of great value. Very many of these trained nurses have been obtained through the kind assistance of the Red Cross Society for Maintenance of Trained Nurses, Auxiliary No. 3, and I desire to express my high appreciation of the valuable services rendered to the medical deparment of the army by this organiation."

Hospital on Fire Island.—The State of New York has offered to the war department the buildings on Fire Island for hospital purposes, and it is stated that about six hundred soldiers will be sent there as soon as the necessary changes can be made. The hotel and cottages belong to the State, and are leased with the proviso that they must be vacated at short notice when needed for health purposes. The men to be sent there will be from various States, no effort being made to reserve the island for the special accommodation of New York troops.

Reviews and Notices.

A Manual of Surgery for Students and Practitioners. By William Rose, M.B., B.Sc. Lond., F.R.C.S., Professor of Clinical Surgery in King's College, London, and Senior Surgeon to King's College Hospital, etc.; and Albert Carless, M.S. Lond., F.R.C.S., Senior Assistant Surgeon to King's College Hospital, and Teacher of Operative Surgery in King's College, London, etc. New York: William Wood and Company. 1898.

There is a decided dearth of concise text-books on surgery, both in this country and in Great Britain, suitable for the use of the ordinary student and adapted to the requirements of the general practitioner. Of excellent works on surgery there is no lack, but they are either too lengthy or too compressed. The work before us does not err in these respects; it is sufficiently comprehensive to meet the needs of a student preparing for the examinations in the United States and Great Britain—with the exception of those of the London University—and at the same time will serve as a valuable reference book for the man in general practice.

The first chapter, devoted to inflammation, deals with this difficult subject in a clear manner, and the importance of micro-organisms as a cause in the development of this disease is given the attention which it deserves. The chapter on suppuration and abscess is also good, the description and treatment of fistula being a model of the faculty of expressing one's meaning in a few sentences. The question of sepsis and infection is accorded a large space in the book and the latest views on the subject are plainly set forth. In the treatment of wounds the authors express opinions which will probably not meet with the approval of the majority of medical men in this country, for, while acknowledging that the aseptic method has been employed with much success, they avow themselves as strong upholders of the antiseptic mode of treatment. No exception, however, will be taken to their equally strongly expressed views as to the advisability of early massage in the treatment of fracture near joints; if this common-sense practice were more frequently followed, the stiffness so often complained of after injuries of this nature would be much less common. The chapter on abdominal surgery is very well written and is in line with the most modern surgical experience. Testimony is afforded in regard to the value of the Roentgen rays for the detection of penetrating foreign bodies of a metallic nature or of splinters of glass or stone, and the cryptoscope is well described. Owing to the need for compression and the consequent lack of space, historical and bibliographical references have to a large extent been omitted, while for the same reason diseases of special regions, such as the eye, ear, and female genital organs have been also practically excluded, except in so far as they encroach on the domains of general surgery. The proofs of the chapter on anæsthesia were revised by Dr. Silk, a sufficiently convincing evidence of the correctness of the views expressed therein. The book throughout is well printed and profusely illustrated, and should meet with a favorable reception. It should be mentioned that the less important diseases and conditions are printed in smaller type in order to economize space.

Wounds in War. The Mechanism of their Production and their Treatment. By Surg.-Col. W. F. Stevenson (Army Medical Staff), A.B., M.B., M.Ch., Dublin University; Professor of Military Surgery, Army Medical School, Netley. New York: William Wood and Company. 1898.

As Professor Stevenson truly remarks in the preface to the above work, probably no branch of surgery has undergone more important changes, in consequence of the teachings of Lister and of Pasteur, than that of gunshot wounds. Surgery in the field, which was more or less the practice at the time of the civil and the Crimean wars, is distinctly prohibited by the requirements of modern treatment. Probing for bullets is a thing of the past; in fact, the modern bullets, with their envelopes of steel or cupro-nickel, render the Nélaton probe useless, as they do not stain the porcelain tip as did the old leaden bullets. Hospitalism is also almost unknown. Thanks to the improvement made in the structure and management of the buildings devoted to the treatment of wounded soldiers, to the efficient ambulance service, and especially to the adoption of Lister's teaching, limbs which but a few years ago would have been promptly amputated are now saved as a matter of course. Penetrating gunshot wounds of the skull, chest, and abdomen, which in the majority of cases were looked upon as fatal, are now treated with fair chances of success. The progress in the science and art of surgery made during the past twenty-five years has been phenomenal, and has created an urgent need of a systematic and up-to-date English treatise on military surgery. The works of Longmore, Guthrie, McCormac, and Macleod were excellent in their day, but in view of the changed conditions of modern warfare have outlived their usefulness. The same must be said of G. A. Otis' monumental "Surgical History of the War of the Rebellion." Professor Stevenson is well equipped for the task of compiling a work dealing with the wounds in war under the altered conditions, as besides being an instructor at the Army Hospital at Netley, he has himself had a wide experience in actual warfare. The first chapter details at length the construction of modern weapons and missiles, compares the curves of their trajectories, and the dynamics of the flight of their bullets. The characteristics of the injuries produced is fully entered into, and the conclusion arrived at is that with the ordinary small-calibre rifle bullets the injuries are much less severe than those caused by the old Snyder and Martini-Henry rifles; and it is pointed out that medical officers—who served in the Waziristan and Chitral expeditions of 1895, where Lee-Metford rifles were first used in warfare, state that the English small bore cannot be depended on to stop a man in his charge. In the chapter on the treatment of wounds in war, special stress is laid on the necessity of "first field dressing" and the danger of interfering with wounds at "the front" is strongly insisted upon. As a striking illustration of the rapid progress which is being made in the science of military surgery, it may be noticed that, although Professor Stevenson's book was published in 1897, the use of the Roentgen rays is not referred to. It is since the publication of the work—in the Afridi campaign in India, at the battle of Atbara in the Soudan, and in our recent fight before Santiago—that the practical value of this means of locating bullets was clearly demonstrated. With regard to the treatment of injuries to joints and bones, attention is drawn to the growing tendency of the army surgeon of the day to the pursuance of conservative methods. That part of the treatise referring to penetrating wounds of the skull, chest, and abdomen is excellently written, and exhibits in a conclusive manner the marvellous revolution effected in military surgery through the agency of aseptic teaching. The surgery of the face, ear, and eye is omitted, as scarcely coming within the scope of a work of this size. The last chapter in the book, on the Geneva Convention and the duties of the Red Cross Society, is, considering the prejudice that appears to exist among surgeons, both in our army and the British army, against that body, in a high degree interesting. Professor Stevenson must be congratulated on having produced the best work on army surgery under modern conditions that has as yet been published.

Manual of Physical Diagnosis. For the Use of Students and Physicians. By James Tyson, M.D., Professor of Clinical Medicine in the University of Pennsylvania, and Physician to the University Hospital; Physician to the Philadelphia Hospital. Third Edition. Philadelphia: P. Blakiston, Son & Co. 1898.

This new edition of Dr. Tyson's well-known manual is an improvement over the preceding, in that new matter has been added to bring the book thoroughly up to date, additional illustrations have been introduced, and some of the sections have been revised. The young physician and the advanced student of medicine will find in this little book an all-sufficient guide to the diagnosis of most organic diseases, with the important exception that there is no section on urinalysis, this subject having been treated by the same author in another work.

Medical Diagnosis. A Manual of Clinical Methods. By J. J. Graham Brown, M.D., F.R.C.P.E., F.R.S. Ed., Assistant Physician to the Royal Infirmary, Edinburgh; Lecturer on the Principles and Practice of Medicine in the School of Medicine of the Royal Colleges, Edinburgh. Fourth Edition. Philadelphia: P. Blakiston, Son & Co. 1898.

Although this is called the fourth edition, so long a time has elapsed since the third edition was exhausted that it may be regarded as practically a new work. So rapid are the advances in certain methods of diagnosis, especially as regards

examination of the blood, urine, and stomach contents, that a work of this kind is in need of constant revision in order to maintain its position as a trustworthy guide, and to such revision Dr. Brown has manifestly submitted his book, for the latest methods, at least such of them as have been proved by the touchstone of practical experience, are here described briefly but sufficiently. After a somewhat careful examination of the manual we are confident that no young man who trusts himself to its guidance can go far astray.

A System of Medicine. By Many Writers. Edited by Thomas Clifford Allbutt, M.A., M.D., LL.D., F.R.C.P., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of Cambridge, Fellow of Gonville and Caius College. Vol. VI. New York: The Macmillan Company. 1898.

The sixth volume of Dr. Allbutt's excellent "System" is devoted to diseases of the respiratory and circulatory systems, with the exception of diseases of the arteries, a consideration of which has been deferred to the next volume. The editor has himself written four of the articles, and several of the other contributions are from the pens of well-known English authorities. The subjects are such as will interest every practitioner of medicine, for the diseases are among those most frequently encountered in a general practice, and most of them are handled in an instructive and pleasing way.

The Blood. How to Examine and Diagnose its Diseases. By Alfred C. Coles, M.D., B.Sc. of Public Health, Edinburgh, etc. With Six Colored Plates. London: J. and A. Churchill. 1898.

This is a useful guide to the diagnosis and pathology of morbid changes in the blood, either primary (so-called) or secondary to general diseases. After a preliminary chapter on methods of examination and general morphology of the blood, the author takes up the primary anæmias, including chlorosis, pernicious anæmia, leucocythæmia, and Hodgkin's disease. Under the heading of secondary or symptomatic anæmia Dr. Coles treats of the condition of the blood in malignant disease, malaria, the acute and chronic infectious diseases and dyscrasiæ, and various general diseases, such as myxœdema, gout, and diabetes.

Exiled for Lèse Majesté. By James T. Whittaker. Cincinnati: Curts & Jennings. 1898.

This book was, as the author tells us, composed in fulfilment of a promise to his family to write a story for their entertainment during the Christmas holidays. The story is a slight one, with just enough love-making to keep up the reader's interest while he is imbibing a vast amount of knowledge on all conceivable subjects with which the cultured man or woman must be more or less familiar. Dr. Whittaker betrays the physician in several places where his characters touch in their *causeries* upon medical subjects; yet this is perhaps not strictly true, for he equally betrays the literary man, the bookworm, the astronomer, the geologist, and the political economist. The book is replete, indeed, with most useful information, and we cannot now recall one since "Sandford and Merton" which the young could read with greater intellectual profit. And the older ones may also find entertainment and instruction in its pages.

Tropical Diseases. A Manual of the Diseases of Warm Climates. By Patrick Manson, M.D., LL.D. Aberd., F.R.C.P. Illustrated by 88 Wood Engravings and 2 Colored Plates. New York: William Wood and Company. 1898.

Only a few years ago it was a common reproach to British medicine that, despite the immense tropical possessions of Great Britain, there was scarcely anything of value on the pathology of the tropics written by physicians educated in the United Kingdom, Fayrer having been almost alone in the cultivation of this prolific field. Now, however, there has been an awakening, and with the establishment of a journal of tropical diseases, the founding of a school in London for the teaching of tropical pathology, and the creation of a section of tropical diseases in the British Medical Association, we may look for great advances in this branch of medicine. And no small contribution to this advance is the work of Dr. Manson, whose industry and acumen have already raised him to the highest rank among the investigators in this line. The work appears at a most opportune time for American physicians, many of whom, especially the young ones, will doubtless be led to cast in their lot with our brethren dwelling in our just-acquired tropical possessions. Dr. Manson speaks as one with authority, and rightly, if a personal experience with nearly every disease of which he treats can confer such a right. We welcome this excellent work, which may confidently be recommended as a safe guide to a theoretical knowlege of the obscure diseases with which it deals.

Clinical Department.

HYPEROSTEOMA OF THE DURA; INFRADURAL FIBROMA; JACKSONIAN EPILEPSY; APOPLEXY; DEATH; NECROPSY.[1]

By HENRY WALDO COE, M.D.,
PORTLAND, ORE.,
AND
E. D. JOHNSON, M.D.,
PORTLAND, ORE.

While osseous tumors are usually found in connection with the normal bone, the case here reported is another evidence that such is not always the case. A new bone formation, if spread out, is denominated by Ziegler as a hyperostosis; if confined to a limited area, as an osteophyte; and if of considerable size, as an exostosis. Tumors of the dura are rare, usually small, and are scattered over or through the membrane, being disconnected osteomata. The present case may be fairly classed as a hyperosteoma of the dura, there being an osteoma of large size.

A case such as this excites inquiry concerning the etiology and the pathology of such growths. Certain writers have claimed and sought to establish the theory that these tumors are prone to occur in those who inherit or develop large bony frames. In the present case the man was of rather a large size, but nothing abnormal in his osseous system was noted outside of the cranial cavity. Gowers tells us that in pachymeningitis externa, when pus has not been formed, there remains a thickening of the outer layer of the dura mater, firmly connecting it with the skull, and into this tissue osteophytic growths may extend from the skull.

Fig. 1.

There is no history of a pachymeningitis, nor does the specimen which is shown in the illustrations indi-

[1] Read before the Oregon State Medical Society, June 2, 1898.

cate that there has ever been an inflammation of the dura. The bony deposit is not, as in the osteophytic examples, found in separate nodular growths, corresponding to areas of adhesive inflammation; the bony deposit is quite general over the hemisphere, the secondary deposits being immaterial in size and to be accounted for by the peculiarity of situations in which they are found. No special adhesions were noted in the post-mortem examination, and the dura was opened with as great freedom as though the peculiar condition found had not existed, there being no evidence of any meningeal inflammation present or past.

Calcification is not an uncommon process of degeneration. An aggravated case of this, wherein a large portion of the apex of the heart had prior to death calcified, was presented before the Portland Medical Society by Dr. Charles H. Wheeler a few weeks ago. The micro-photographs reproduced herewith demon-

Fig. 2.—Longitudinal Section.

Fig. 3.—Transverse Section.

strate that this deposit is not an interstitial calcification, but real bone structure, probably developed from the cellular embryonic tissue existing between the two layers of the dura, this development having been instituted in fœtal life. In such a case, as pointed out by Ziegler, there must have appeared in such development between the formative cells a homogeneous or fibrillated dense basement substance, which gave a resting-place for calcareous salts, the osteoid trabeculæ being an early element in the construction of this particular dura.

Within the dura and closely attached to the inner layer of that membrane, may be seen a small tumor. It is clearly a fibroma. In size it is about two by one and a half inches, and a half inch in thickness.

A feature of interest in the larger bony specimen is the depressions showing where Pacchionian bodies had nested in the new bone formation, giving the whole an appearance of the interior of a normal skull cap.

The history of the case is as follows:

H. J. B——, aged forty-three years, was admitted to the Oregon State Insane Asylum, January, 1894. The commitment papers stated that he had had epilepsy when a child and again when he was fourteen years old, from which he appeared to have recovered; he had no more attacks until he was thirty-three years old, since which time they had grown frequent and severe, causing mental weakness and partial paralysis of the right side. No description of the character of the attacks was given. When admitted he was quite strong and well nourished, and could give a fairly good account of himself, though he was unreliable in his statements, partly from loss of memory. The epileptic attacks were distinctly Jacksonian, the spasm involving the hand and face first, then extending to the whole right side of the body. They were of irregular occurrence, frequently being absent for several weeks, while other times they would occur as often as one every minute for several consecutive days. The seizures varied in intensity from a slight tremor to a tonic convulsion, and the patient usually retained consciousness. Motion on the right side of the body was considerably impaired when he was admitted; it improved gradually for a time, but was never completely restored. In May, 1897, he was suddenly stricken with complete paralysis of the right side, evidently from cerebral effusion, but after a few weeks the paralysis gradually improved until he was able to walk with a cane, although the arm improved but very little. The convulsions were almost entirely absent for several months after the paralysis developed. About two months before he died slight spasms in the right hand and forearm began to occur, which gradually increased, becoming very frequent, almost continuous, and tonic in character, and two days before he died involving the whole right side.

Upon post-mortem examination the head had a normal appearance and was symmetrical in shape. Nothing abnormal about the body was discovered, except within the cranium. The calvarium was of average normal thickness, and, as before stated, there were no inflammatory adhesions between the skull and dura. There was no fluid in the subdural or arachnoid spaces. Upon the removal of the skull cap almost the entire left hemisphere was found to be covered by a bony sheet within the layers of the dura. A smaller portion of ossification was found over the central region of the right side. Within the bony tumor and closely adhering to the inner coat of the dura was found the tumor before referred to. This growth lay over the motor tract of the left side of the brain. The lateral ventricles were distended with serum and blood clots, death being the result of this hemorrhage.

TWO CASES OF CARCINOMA SUCCESSFULLY TREATED BY THE ELECTRO-MERCURIC METHOD.[1]

By G. BETTON MASSEY, M.D.,

PHILADELPHIA.

Mrs. B——, aged sixty-three, had the right breast removed for carcinoma of a malignant type in January, 1897. Ten months later she came under my notice with seven carcinomatous nodules which had developed in the course of a lymphatic vessel, which extended from the scar of the operation upward toward the clavicle. These growths were of the size of hazelnuts, were in the subdermic tissues, and were rapidly increasing in size.

On the 11th of December, 1897, she was placed under ether with the assistance of her physician, Dr. Ida E. Richardson, and of Dr. Willard Thompson, and the cataphoric method was applied by means of three small gold electrodes amalgamated with mercury, the electrodes being so inserted as to include all seven of the growths in their field of influence. Before the current was turned on an excess of metallic mercury was injected through the electrodes, in order that an abundance of this metal would be in the proper situation for cataphoric dissemination throughout the growths. The current was now turned on without shock, the active electrodes being positive and a large pad on the back negative. Before the full current employed—five hundred milliamperes—had been turned on, there was evidence of change at the point of insertion of the instruments, and by the expiration of fifteen minutes all of the growths had

[1] Read before the Philadelphia County Medical Society, May 11, 1898.

been softened and an area beyond them infiltrated and changed to a grayish color. The operation was complete at the end of fifteen minutes, when the current was turned off and the patient put to bed.

Considerable pain followed the application in this case, lasting four hours, but it ceased at the end of this time and the patient was thereafter comfortable.

The spot was dressed with a dry powder and remained in an aseptic condition until the débris came away, some two weeks later, after which it healed by granulation. No further treatment was required, and the patient is now well, with no evidence of unsound tissue anywhere. The axilla remained uninfected in this case, both at the time of the removal of the breast and when she came under my notice.

The second case to be reported this evening was an instance of carcinoma of the sublingual salivary gland on the left side of the tongue in a woman, fifty-six years of age, who had noticed the lump for six months, during which time it had grown rapidly. For two months it had caused her excruciating pain, day and night, and she had been latterly quite unable to take nourishment. On examination the lump was found to be of the size of a horse chestnut, with an ulceration occupying its centre, which emitted a horrible odor, so strong indeed as to affect the air of the whole house when she was admitted to the private hospital.

On the 28th of December last she was etherized, and the electro-mercuric method applied with the assistance of Dr. S. J. Gittelson. A large gold electrode, well insulated to near the tip, was thrust into the centre of the growth and four hundred milliamperes were turned on, an abundance of mercury being injected about the tip of the instrument. As the current was not very strong, the application was prolonged to thirty minutes. The indurated base and surroundings of the tumor seemed softened by this time.

During the passage of the current it was noticed that the odor had ceased, and it never returned, though grayish shreds remained in the situation of the growth until thrown off by nature about two weeks later. The intense pain from which this patient suffered was also found to have ceased by the next day, and it never recurred. A slight additional application was made to a portion of the growth that had escaped the original treatment, about three weeks later. The bared area gradually healed by granulation, and I have the pleasure of exhibiting the patient to-night in a state of perfect health.

The diagnosis of the first case was corroborated by a microscopic examination when the breast was removed. In the case of the patient exhibited this was accidentally omitted, as the small piece removed by me for this purpose was mislaid by the microscopist and lost during an attack of illness. The clinical features of this case were nevertheless so pronounced as to leave no doubt of its malignant character.

MATERNAL IMPRESSIONS.

By EDWARD D. ELRIGHT, M.D.,

MARION, KAN.

I HAVE in my practice a case of maternal impression, so marked that I wish briefly to report it. In visiting a house in my capacity as physician I noticed a little girl, about six years of age, with a remarkable-shaped head and a blepharo-phimosis of the right eye. The forehead was very prominent, running to a sharp point a little to the left of the centre. The entire right side of the head was but poorly developed, being not nearly so full as the left side. I operated on the eye, enlarging the palpebral opening. I still had left a ptosis. I then removed a strip of the lid and found entire absence of muscular tissue. The ball was turned decidedly upward. With regard to the cause, which is the interesting part, I learned the following: The mother when about two months pregnant saw her husband, who is a butcher, killing a cow. He had hit it on the head with an axe, crushing in the right side and causing the upturned eye to protrude. She hurried away, but the sight made a deep impression on her. Cause and effect seem to be certainly connected in this case.

ENLARGED PROSTATE AND SPINA BIFIDA IN THE NEGRO.

By T. M. McINTOSH, M.D.,

THOMASVILLE, GA.

DR. W. L. RODMAN, in a paper read at the meeting of the Kentucky State Medical Society, "Influence of Age, Sex, and Race, in Surgical Diseases," speaks of the great rarity of enlarged prostate and spina bifida in the negro race. The following cases may therefore be of some interest. I was called ten miles south of this place to see a negro man, about sixty-five years old, who had had retention of urine, a high fever, and repeated chills for two days. In unsuccessful attempts to introduce a catheter before I saw him, an injury had been inflicted upon the urethra. I employed an ordinary gum-elastic catheter with stylet, No. 10 English scale, properly curved, and with a finger in the rectum it was easy to pass the instrument into the bladder and draw the urine.

A negro woman, living seven miles east, was delivered of a dead child, with a spina bifida as large as the child's head. In the suburbs of the town I saw recently a negro child, a few days old, with a spina bifida as large as a cocoanut. The child died in a few days.

SOME HINTS ON THE MANAGEMENT OF SIMPLE SPASMODIC CROUP.

By JOHN H. BILLINGS, M.D.,

NEW YORK.

THE importance of examining the nasopharynx in so-called cases of spasmodic croup occurring in children can hardly be overestimated.

It was my fortune to have under observation the past winter six cases of the ordinary spasmodic croup, coming on at night, yielding, however, to the ordinary simple remedies. On examination of the nasopharynx the following day, three cases presented enlarged tonsils and nasopharyngeal adenoids, three the nasopharyngeal adenoids simply.

These six cases were treated surgically—that is, the tonsils were excised and the adenoids removed; and, although this took place early in the winter, no attacks were experienced again in any of the six patients, these children being called "croupy" and suffering since birth from frequent attacks during cold weather.

In all cases of this character it seems that an examination of the fauces might lead to the exciting cause, in the great majority the obstruction to proper nasal breathing rendering the child catarrhal and croupy, and predisposed to attacks of this nature.

It might here be well to call attention to the importance of keeping the room quiet and the child's attendants calm and collected, the exhibition of excitement and fear on their part causing the little patients to struggle and the attacks of stridor to be greatly intensified. I have often been able to carry the croupy child through the night without the least difficulty, by simply having the room quiet and the attendants cheerful, carefully avoiding any expression of fear in words or manner.

121 EAST FORTIETH STREET.

Society Reports.

THE BRITISH MEDICAL ASSOCIATION.

Sixty-Sixth Annual Meeting, Held in Edinburgh, July 26, 27, 28, and 29, 1898.

(Special Report to the MEDICAL RECORD.)

(*Concluded from page 321.*)

SECTION ON SURGERY.

Second Day—Thursday, July 28th.

The Origin, Effects, and Treatment of Septic Infection of the Urinary Tract.—DR. DAVID NEWMAN, of Glasgow, opened a discussion on this subject. He proposed to confine his attention principally to changes taking place in the kidneys, leaving other speakers to deal with the rest of the tract. In the first place, there were certain conditions, not necessarily septic, but often leading to suppuration. He would, however, limit his remarks to truly septic conditions. He would classify these as follows: Purulent embolic nephritis, a descending sepsis without pre-existing disease of the tract; purulent interstitial nephritis, ascending by the lymphatics; acute septic nephritis without suppuration, ascending by the lymphatics to the cortex; suppurative pyelitis affecting the mucous membrane of the pelvis without distention; the same without secondary infection. The mucous membranes of various parts of the body have the power of protecting it against micro-organisms and of destroying them; the bladder is no exception in this respect. Simple retention of urine did not cause sepsis. The artificial introduction of organisms would not cause it unless the mucosa were damaged or there were retention. The kidney was protected by its situation and by the peculiar arrangement of its lymphatic supply, which had hardly any communication with the lymphatics of neighboring parts. It was isolated, too, by its fibrous capsule, and was situated outside the peritoneum. The interrupted valve-like action of the ureter prevented spread of sepsis as long as it was not dilated, and the frequent emptying of the bladder also helped to protect it. If any of these conditions were interfered with, sepsis might occur. The commonest cause was a central or local nervous lesion. The modes of attack were the following: (1) Infarctions causing purulent embolic nephritis; (2) by the lymphatics; (3) by the excretory duct; (4) by continuity with other organs; (5) by wound. Under the first head came endocarditis, erysipelas, osteomyelitis, etc. These usually gave rise to wedge-shaped emboli and numerous abscesses, which might rupture into the pelvis of the kidney or cause secondary infection of the local blood supply. If the submucosa of the ureter were injected, the fluid would travel up to the cortex of the kidney and travel down into the pelvis. The whole structure of the kidney was surrounded by lymphatics, which also were continuous with those of the submucosa of the bladder. Acute sepsis and suppression of urine might occur directly after operation, especially in those who had large white kidney. Death occurred in a short time, before suppuration could develop, but in these cases micro-organisms were found in swarms everywhere. In cortical abscess infection took place along the lumen of the excretory ducts. Here were found chronic nephritis, dilatation of the ureters, and direct infection reaching to the uriniferous tubules and extending to the lymphatics, and so spreading farther. In chronic hydronephrosis infection might occur by migration of organisms from the alimentary tract. A similar process occurred in cystitis. All instruments were ordinarily septic, and even after sterilization the instrument might become septic before it reached the bladder. Even after the introduction of microbes a good deal might be done to mitigate their effects and destroy them.

DR. THORKILD ROVSING, of Copenhagen, referred to his book on this subject. The results and opinions there detailed he had arrived at from personal treatment and the bacteriological examination of about two hundred cases. A great number of microbes might cause diseases of the urinary tract, but there were two chief groups—those which decomposed urea and those which were known under the name of coli bacilli. He had shown that infection might descend from the kidney, and, much more frequently than was supposed, it was conveyed through the blood. Sterilization of instruments did not prevent cystitis, because the normal urethrea swarmed with microbes. Infection through the blood had its source generally in the intestines and through the kidneys. Guyon and his school taught that almost all infectious diseases of the urinary tract were due to bacterium coli, while the urea-decomposing microbes were of secondary importance. In bacteriuria or epithelial cystitis the urine contained no abnormality except bacteria, and it was turbid and sometimes had a peculiar odor. There was no frequency of micturition and the cystoscope showed the mucous membrane to be normal. With the urea-decomposing non-pyogenic microbes (staphylococci, diplococcci, rod bacteria) there was ammoniacal turbid urine with pus-like deposit. Micturition was frequent and painful; the cystoscope showed the mucous membrane red and swollen. This he had described as catarrhal cystitis. Pyogenic microbes caused a suppurative cystitis, if they for a time only were able to render the urine ammoniacal. For the production of pyelitis when the bladder was healthy coli bacteria were responsible; when it also was affected, we had almost always to do with urea-decomposing pyogenic microbes. The following experiments, Dr. Rovsing said, were instructive: Tie one of the ureters of two rabbits and inject coli bacteria into one and staphylococcus aureus or proteus Hauser into the other above the ligatures. The second rabbit will be dead in a day or two with diffuse suppurative nephritis. The other will be alive. If the rabbit is killed after two, three, or even eight or nine days, the urine will swarm with coli bacilli but there will be no suppuration of the kidney. The greatest number of urinary infections per urethram were caused by surgical interference; therefore prevention of infection by this means was important. Vaseline should not be used as a lubricant. He had found a bladder half full of vaseline. Sterilized olive oil or glycerin should be used. Oil was the best. It was, however, most necessary to kill the microbes introduced by instrumentation. The only preparation to be relied on was a two-per-cent. solution of nitrate of silver, of which forty or fifty cubic centimetres should be introduced and retained three or four minutes, after which the bladder should be washed out with sterilized water.

MR. MANSELL MOULLIN thought that the septic origin of urinary troubles was overlooked through the habit of treating these organs as not subject to the same general laws as the rest of the body. Urine was provided to be aseptic in health. The bladder was particularly liable to attack by micro-organisms through the blood or neighboring organs. Experiments had shown that organisms injected into the rectum might appear in the bladder, and the frequency of cystitis after rectal operations was well known. Similarly the colon might infect the kidney. Pyelitis occurred in pregnancy, due to the pressure of the uterus on the ureter, but this disappeared when the pressure was removed. Doubtless the most common mode of infection was by the lumen of the tract.

Infection was easy in women, owing to the shortness of the urethra and its proximity to the vulva. Infection was easily got rid of also for the first reason. In one method of infection the blood or lymphatics were primarily affected, in the other the urine. Bacteriuria without cystitis passed gradually into cystitis when the vitality of the bladder wall was lowered. Organisms would account for all the extraordinary symptoms in urinary sepsis, except those due to shock. At the beginning of catheter life, when there were cystitis and residual urine, death sometimes occurred, and was put down to exhaustion or to typhoid symptoms, but really it was due to sepsis. The way to prevent this was to empty the bladder thoroughly and not to let the organisms get in. Personally the speaker had found bacillus coli present in most cases. The virulence of this organism varied enormously; some were almost innocent, while others were very pathogenic. He could not agree with Dr. Rovsing as to the innocence of bacterium coli. If it could cause pyelitis, as he admitted, why should it not cause cystitis? Bacterium coli was often found in almost pure culture, and he thought in such cases it was fair to infer that it was the cause.

Dr. Melchior, of Copenhagen, said that in bacteriuria the urine was acid, with a bad smell, and contained crystals of uric acid and oxalates and leucocytes. He gave statistics of his cases. The bacterium coli was the most frequent organism in cases of cystitis; it was found in half, and was introduced from without by instruments. In five cases of spontaneous cystitis he found it in pure culture. The urine was acid and there was no pyelitis. All the five cases occurred in women; he had never known such in men. It was due to the anatomical arrangement of the parts. The bacillus coli was found on the vulva and even in the healthy female urethra. Even with urea-decomposing microbes the urine might remain acid in cystitis. He narrated an interesting case of disappearance of the coli bacillus and appearance of others, with change of character of the cystitis. The different suppurative conditions, such as cystitis, urethritis, and pyelitis, were not separate entities, but ran into one another. Diseases of the intestinal tract affected the bladder and urinary tract. He held that pyelitis with cystitis, caused by the bacterium coli, was a descending affection, the cystitis being secondary; this was contrary to what Rovsing taught. Bacterium coli then was the commonest cause of these diseases, and with it the urine was acid. It might also be acid when the urea-decomposing microbes were predominant.

Mr. Bruce Clark emphasized the etiological importance of abrasions of the mucosa and of retention of urine; it was proved that injection of microbes might be harmless when neither of these conditions was present. This was shown by catheterization, which, although continually performed without any antiseptic precautions, did not generally cause infection. He agreed with Rovsing that cases of streptococcus and staphlyococcus were commoner than was generally thought. It often occurred that a case first showed staphylococci and then bacterium coli. He believed that, as Klein suggested, the latter was the hardier bacillus and drove out the first. Here possibly was an explanation of some of the conflicting statements of different observers. Streptococci might invade the submucous tissues of the bladder and render it incapable of expansion, as in erysipelas of the skin, etc. If streptococci were found in the urine in cystitis, he thought that operation was indicated in order to keep the bladder quite empty, so as to get at its walls and treat them directly. Any method of disinfection of catheters must be simple, because patients must use it themselves.

Mr. Battle related a case of perineal section for urethral calculus with purulent pyelitis and greatly enlarged kidneys. After lateral cystotomy and drainage the patient recovered entirely and the kidneys returned to normal size: a very rare result.

Dr. Nicoll said that the common mode of infection was per urethram. He had undertaken a series of observations with the help of bacteriologists. He was not yet prepared to state results, but they had made clear that there were many sources of fallacy and the subject was a most difficult one, and as yet they had arrived at no fixed conclusions. Cultures must be made on acid, alkaline, and neutral media in all cases before a verdict could be given in testing the sterility of the urethra. There was no known method by which the gonococcus could be distinguished from other cocci. Microphotographs had to be taken of all slides, because the earlier specimens stained by Gram's method might be found decolorized when wanted later for comparison. He was quite prepared to find that further investigation upset the conclusions provisionally come to.

Dr. MacEwan, of Dundee, said that the practice of passing the catheter on females without exposure was to be condemned severely. It was impossible to keep an instrument sterile when used thus. Infection from within was difficult to deal with, but purges and internal antispetics were useful before operations. Catheter fever was due to sepsis. Organisms were absorbed by the abraded urethra on the first act of micturition after use of an instrument. As antiseptics, methylene blue, and salol by the mouth, and boric acid, nitrate of silver, and perchloride of mercury locally were the best. A suprapubic opening was the best for inspection and drainage of the bladder.

Dr. Kocher, of Berne, said that in several cases of peritonitis he had found nearly pure cultures of coli bacilli. If this bacillus killed others in cultures it might do so in the body, and it might even be benign and its presence in an abscess, for instance, a good sign. If Rovsing's views were all true, it might be beneficial to inject coli bacilli in cases of cystitis from other organisms.

Dr. Newman, in reply, said that he was in some doubt as to the importance of the coli bacillus. No doubt it varied in virulence. There were great contradictions in practice. He had a patient who had been using a bougie, improvised out of eighteen inches of telegraph wire, for years without much harm, yet a single application of Holt's dilator killed him in forty-eight hours. It exposed, no doubt, a large absorbing surface.

Thyroidectomy in Graves' Disease.—Dr. Stokes, of Dublin, read a paper on this subject. A case which he reported was that of a man of thirty-two years, which began after a fright. There were typical symptoms of Graves' disease. Von Graefe's sign, however, was not well marked. There was no osteomalacia. There was some temporary improvement under ergot and thyroid extract. Thyroidectomy was performed successfully despite somewhat alarming attacks of dyspnœa. The patient entirely recovered. Three views were held of its etiology: (1) that affection of the heart was the primary cause; (2) that it was caused by disturbances in the central nervous system; (3) that it was caused by absorption of toxins secreted by the thyroid. This last had most adherents. Thymus-gland treatment was useless. The results of thyroidectomy pointed to this gland being the cause of symptoms. Seventy-four patients were cured, forty-five were improved, and only three were not benefited. Shock appeared to be the starting-point in many cases. (1) Enlargement of the gland was the first symptom in some; (2) palpitation and exophthal-

mos in others. There were a complete and an incomplete form. We should distinguish in treatment between cases beginning with tachycardia and those beginning with enlargement. No treatment but operation was curative. Total extirpation was not always necessary.

The President referred to the alarming symptoms which appeared under anæsthesia in such cases.

Dr. Kocher said that the result of these operations was most gratifying, but not in all cases, because perhaps for fear of myxœdema not enough was removed. He excised one lobe and one-half or two-thirds of the other, and tied three out of four arteries. Chloroform was most dangerous in such cases. He gave no general anæsthetic but operated with cocaine, and if the patient would not consent to this, he refused to operate at all, except in children. It could easily be done with cocaine, and patients were astonished at the slight pain they suffered. Perhaps, although the gland accounted for many of the symptoms, it did not account for all. The central nervous system might be the cause. But he was perfectly sure that surgery could cure a good many of these cases.

Cleft Palate.—Mr. Edmund Owen reported a case of cleft palate. The child should be got into a good state of health. Adenoids or large tonsils should be removed previously. He used Smith's gag with spikes instead of roughened plates, and kept the head hanging back. Incisions laterally should be very free indeed. If a case went wrong from infection by staphylococci, one must wait and do a secodnary operation when the edges were granulating.

Electrolysis of Inoperable Malignant Tumors.—Dr. Melchior, of Copenhagen, read a paper with this title. He had had good results in some cases, the tumor disappearing, with no return after two years. He applied a current of five hundred milliamperes for five minutes. Both electrodes were introduced into the tumor, avoiding large blood-vessels. It had a far-reaching effect beyond the actual tumor and necrosis took place in the new growth only. The current seemed to possess a valuable quality of discrimination. It affected sound tissue by causing reaction with some pain and development of fibrous tissue, which helped to choke cancerous cells. Others besides himself had made observations under the microscope of the discriminating effect of the current. He had applied as much as six hundred and eighty milliamperes without bad effect. The method was not dangerous unless such a current were passed through the brain substance. The development of fibrous tissue might have bad results, but the patients were in a desperate condition and should be told that the method was uncertain and dangerous.

Chloroform Anæsthesia in India.—Dr. Arthur Neve, of Cashmere, read a paper on "Chloroform in India—A Plea for More Utilization of Clinical Facts." He had addressed inquiries to many practitioners in India. In five principal hospitals there were 15,800 administrations with two deaths in the past year. In a longer period there had been 78,400 administrations with only three deaths. Surgeons responsible for over 100,000 administrations had not had a single death. The patients were of many races—Europeans, Mongols, Pathans, Dravidians, and Aryans. The diet varied greatly. The operating-threatres were very freely ventilated. Anæsthesia was produced more easily in warm than in cold weather. Sir Benjamin Richardson had stated that cold and especially moisture were prejudicial or even dangerous. To this Clover agreed. It was worthy of note that the two deaths in India last year occurred at two very moist places. Dosage was not secured by Junker's or the modified Junker's inhaler. He poured measured quantities on a towel. Last year in Cashmere thirty pounds were used in seven hundred administrations, an average of five and one-half drachms in each case. Laurie averaged seven drachms. On the average two and one-half drachms were used in twenty minutes; about half of this was inhaled and still the strength of the vapor was probably one per cent. The evidence in favor of occasional fatal neuroparalysis was, he thought, overwhelming. He thought we should assimilate the conditions of administration in this country to those in India, in order to attain corresponding safety. The section decided to ask the association to memorialize the government of India to publish a yearly report of the statistics of administration of chloroform in India.

Catheterization of the Ureters.—Dr. David Newman read a paper on the value of this procedure. He was sorry to say that in those cases in which it most was wanted, catheterization of the ureters was not feasible. There was danger of spreading infection from the bladder to the kidney. It was valuable in deciding the condition of the kidneys before deciding to operate. He would use this means only in cases in which it was absolutely necessary and as a last resource. He could not admit that washing out the pelvis of the kidney through a minute catheter was of any use. It must be incised and drained.

Dr. Leopold Casper showed his instrument for catheterization of the ureters. In the use of it infection was possible, but practically there was no danger. He had used it for practice and diagnosis five hundred times and had never known infection to follow. The urine washed back into the bladder any organism introduced into the ureter, but yet precautions should be very thorough. He would use it only when necessary for diagnostic or therapeutic purposes. It was of value in cases of tumor when there was doubt whether the urinary apparatus was affected or not. In one case echinococcus of the liver was diagnosed, but the general practitioner suspected kidney disease because the tumor varied in size. His instrument proved it to be a case of pyelo-nephritis. Diagnosis in some cases could be arrived at by the cystoscope, but not so early or so surely. Its main usefulness was in determining the condition of the supposed healthy kidney when an operation on the other one was proposed. Urine could be obtained for analysis.

Spina Bifida.—Mr. Yelverton Pearson reported a case of spina bifida treated by open operation. The tumor was in the loin. The patient had lordosis, contraction of ham strings, and nocturnal incontinence of urine. The operator made a lateral longitudinal incision, the patient lying on one side, removed an elliptical portion of the skin and sac, turned up flaps of dura mater, and attempted to form periosteal flaps. He undermined the skin at each side and made free incisions through the aponeurosis, so as to enable the latter to be sutured on the midline. Result good. There was temporary palsy. This and the incontinence passed away. The knees were treated with splints. The child had generally much improved.

Third Day—Friday, July 29th.

Hemorrhage of the Kidney.—Dr. Thorkild Rovsing, of Copenhagen, read a paper on "Mysterious Hemorrhage from a Single Kidney and its Cure by Nephrotomy." *Hæmaturia sine materia*, essential or genuine hæmaturia, was much talked of early in this century. Rayer devoted a chapter to it. Later surgeons, operating for hæmaturia and finding no cause, began to discuss the subject anew. Klemperer had called it hæmaturia from a healthy kidney and supposed it due to a neurosis. The speaker believed that those cases reported were most doubtful. He had had four cases under his care, of which he read full notes.

In two the kidney was displaced, and the urine infected with bacterium coli. Free exploration of the kidney was followed by complete cure. In both cases the kidney was replaced and fixed in its normal position. He believed the hæmaturia was due to displacement and torsion, giving rise to venous stasis, although possibly the coli bacteria had something to do with it, as he had described several cases of bacteriuria beginning with a single hæmaturia.

In another case the kidney was severely pressed between the liver and the ribs by the stays, and in its upper part its substance was too friable to hold a suture.

In the remaining case he could find no cause for the bleeding, but it was not certain that it was not from a vessel in the pelvis of the kidney or in the ureter. Nephrotomy appeared to cure the condition, as in the other cases. This should always be resorted to in these cases.

The President remarked that mysterious forms of hæmaturia were rapidly disappearing under improved methods of diagnosis.

Neurectomy in the Treatment of Spasmodic Wryneck.—Dr. R. H. Parry reported a case of spasmodic torticollis treated by neurotomy of the cervical plexus. A workman, aged thirty-seven, seen in 1895. Three years before that he had received a severe blow on the neck. This was followed by pain and soon his mate noticed his head jerking. Five months after the injury he had to leave off work because his head was so far drawn toward the left shoulder that he could not look at his work. Neurotomy of the right spinal accessory did no good. The platysma and sterno-mastoid on the right side and the left occipital muscles were in constant clonic spasm during the day; there was no jerking during sleep, but the head then remained turned to the left. There was no structural shortening of the muscles.

Stretching under an anæsthetic, massage, etc., were tried in vain. An operation was therefore undertaken. An incision was made along the posterior border of the left sterno-mastoid. The great occipital nerve was found and divided, as was the posterior division of the first nerve; those of the third and fourth were difficult to find, but were at length divided. The occipital artery and vein were ligatured. The wound was packed with gauze; it healed well and the result was excellent. The patient was presented to the section and showed few signs of so severe an operation. There was no spasm.

In two other cases the speaker had divided the spinal accessory nerve. In these cases, if this and massage failed, portions of the posterior branches of the cervical nerves should be excised.

Dr. Kocher, of Berne, had seen a good many cases, and had often seen a return after neurotomy. Therefore he had divided the muscles on both sides and effected a cure when neurotomy had failed.

Removal of the Gasserian Ganglion for Neuralgia.—Mr. Jonathan Hutchinson, Jr., reported a case of removal of the Gasserian ganglion for trigeminal neuralgia. The patient had suffered since 1882, with intervals of remission after various operations, such as stretching, neurotomy, and removal of Meckel's ganglion. Each time the neuralgia had returned, and the patient had finally become a morphinomaniac. The speaker performed Hartley and Krause's operation, lifting up the temporo-sphenoidal lobe of the brain to reach the foramen spinosum. A good deal of difficulty arose from oozing and the depth (two inches) from the surface; oozing increased so much that the final stage of the operation was postponed for one week. The ganglion was then removed in one piece, but the ophthalmic division was accidentally left behind. Recovery was uneventful. There was no return of the pain and the patient had gone to work again. There was only slight occasional twitching. There was complete anæsthesia in the region supplied by the fifth nerve. The only inconvenience arose occasionally when food got down between the tongue and the gum. All the teeth had been removed before. The sense of taste for bitter, salt, and sweet, etc., was lost. There was atrophy of the masseter and temporal muscles on the operated side. The opening in the bone had nearly closed up. No microscopic abnormality was found in the ganglion removed, except an excess of fibrous tissue.

There were two methods of getting at the ganglion: one from below, the pterygoid route, and the temporal or extradural route. The latter was the better. It needed a shorter incision and a comparatively small division of muscles. It was less disfiguring. It was safer. There was no risk of injuring the arachnoid or of interfering with the Eustachian tube. The pterygoid operation was much more dangerous and difficult.

If the Eustachian tubes were opened there was danger of sepsis; the dura mater and the internal carotid artery were also in danger. Moreover, the ganglion could not possibly be freely exposed and removed by this method. In his last case Victor Horsley was occupied for one and one-half hours, owing to adhesions. He now said that it was unnecessary to divide the middle meningeal artery, which could be drawn aside with hooks. This was a real improvement. Testimony was unanimous that when the ganglion was efficiently dealt with there was no return of neuralgia. The question of situation of the cause of the pain was most important. The object of this paper was to urge the adoption of this method, which, although difficult, was the best, and held out promise of relief in these distressing cases. In future he believed that the operation would be performed earlier, before the sufferings of the patients and the remedies used had undermined their health. Ligature of the carotid will no longer be considered in the treatment of neuralgia. No damage to the eye need ensue, if irritating antiseptics were not applied to the conjunctiva and cornea.

Mr. Mayo Robson said he had experienced the difficulties of the pterygoid route. He had operated in three cases, but believed he had not completely removed the ganglion in any of them. He thought this route would be abandoned in favor of the temporal one. By division and stretching of the inferior division of the nerve the ganglion itself was stretched, and so the other divisions were affected, and thus relief of pain, which might otherwise be permanent, was procured.

Nature and Treatment of Sciatica.—Dr. William Bruce read a paper on this subject. He said that the nature of sciatica was really unknown. Adhesions between the nerve and its sheath were said to be the cause, but sometimes after diagnosis of neuritis no adhesions were found post mortem. Exposure to cold and overexertion, especially the latter, were the most certain causes. He had notes of two cases seen in the last ten years, and was convinced that the pain was really due to hip-joint trouble. He had never found tenderness on pressure over the nerve, but often found it over the capsule of the hip. There were marked diminution of movement, especially of eversion, and wasting of the glutei. Other joints were often affected in the same patients. One hundred and ten cases had occurred in males, and one hundred and eight in females, in the latter generally about the climacteric period.

None of the drugs was very efficacious. Rest and recumbency and treatment of the uric-acid diathesis did most good, and spirit of turpentine exerted undoubted curative influence. All patients recovered in time. It was a surgical disease.

Dr. Crawford Renton read a paper on the "Surgical Treatment of Sciatica." In the case of a patient aged thirty-two, the nerve was stretched with partial improvement. There was pain when the patient walked, but little or none when at rest. Dr. Renton cut down on and examined the sciatic and internal and external popliteal nerves, and found large adhesions between the sciatic and its sheath and some on the popliteal. He removed these adhesions freely and the patient was cured. In seven other cases there were the same history, same operation, and same result. He wished strongly to urge that the nerve should be carefully examined for adhesions due to perineuritis, in which disease there was little or no pain when the limb was at rest. This was diagnostic between neuritis and perineuritis.

The President said that he wished sciatica were so simple a matter as Dr. Bruce said. He thought that nerve stretching was more successful, and that adhesions were less common than Dr. Renton believed.

Secondary Operations for the Relief of Musculo-Spiral Paralysis.—Dr. Robert Kennedy reported four cases of musculo-spiral paralysis with restoration of function after secondary operation. His first case was one of fracture of the humerus. He liberated the nerve from the callus and sensation returned in twenty-four hours. In a second, a similar case, there was gradual improvement. In the third case, also of fracture, sensation was not absent. He operated eleven months after the accident, but no improvement in motor power followed. The fourth case was one of rupture of the nerve. No radial nerve could be found. There was gradual return of complete power. He held that the return of conductivity dated from the restoration of sensation, the delay in the return of muscular power being due to changes in the muscles which it needed time to repair. If a year elapsed recovery of motor power was not likely. Asepsis was essential in these operations.

Mr. Mayo Robson remarked that he had grafted the tibial into the median, and a rabbit's spinal cord into the median of man paralyzed for far longer than one year, with success. No matter how long palsy had lasted, there was good hope of cure by suture or grafting. Physiologists and surgeons differed as to the possibility of return of sensation in twenty-four hours after suture. Although it might not be explained how it occurred, he was confident of the accuracy of his observations showing that it undoubtedly did occur.

Congenital Dislocation of the Hip.—Dr. Doyen, of Paris, showed his instrument for producing a new acetabulum, a tubular four-bladed drill, and a powerful screw apparatus for replacing the head of the femur in operations for congenital dislocation of the hip. He also showed a simple and useful iron frame to which patients were secured after this operation. It was of value whenever it was required to apply a plaster jacket round the trunk or limbs. For a description of the instruments he used in intracranial surgery he referred to Dr. Marcotte's thesis and his own book, "Technique Chirurgicale." He used a much greater electric power for his instruments than had been previously done, and saws of various sizes. Localization of any given convolution was still inaccurate; therefore his method by which he lifted up a flap consisting of a large part of the side of the skull was useful. The whole motor area could be exposed. In Jacksonian epilepsy, by Professor Reynolds' advice, he removed, after electrical explorations, the cortical motor centres of the extensors of fingers and wrist. A small glioma that no visual or tactile sensation had made them suspect was found in the centre of the piece removed. He had had very satisfactory results in cases of idiocy.

Coxa Vara.—Mr. Muirhead Little then read a paper with this title. After referring to Ernst Müller's original paper and to the nature of the deformity in this, an adolescent case, he said that afterward Lauerstein accidentally discovered in a rachitic child, post mortem, a deformity of the neck of the femur that he considered as the early stage of such cases as Müller's. These two cases were typical of two forms of the disease, that due undoubtedly to rickets in children, and that in adolescents following any disease that softened the bone. The drawings which he handed round showed how little the bone was deformed in the first class of cases, and how almost unrecognizable it was in the other. Mistakes in diagnosis were very frequent in coxa vara. Unless a skiagraph showed obvious diminution of the angle between the shaft and neck of the femur the diagnosis should only be provisional. He showed skiagraphs of cases diagnosed as coxa vara which were really congenital dislocations. Arthritis had been mistaken for coxa vara, and *vice versa*. The common curved rachitic femur, convex outward, had been taken for coxa vara.

Weight extension was the best treatment when the bones were soft. After they had hardened subtrochanteric osteotomy was the best. It was remarkable that so many cases had been recorded in Germany and hardly one in this country.

Mr. Noble Smith referred to a case of a girl of thirteen under his care, in whom *x*-rays showed very marked coxa vara. He proposed intertrochanteric osteotomy.

This closed the proceedings of the section.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

PARLIAMENT AND VACCINATION—PROTECTION OPTIONAL—OTHER AGITATIONS—HYDROPHOBIA OR MUZZLING—INSTITUTE OF PREVENTIVE MEDICINE AND ANTI-VIVISECTIONISTS—ROYAL ARMY MEDICAL CORPS—HOSPITAL SUNDAY FUND—SUCCESS OF MR. BALFOUR AT GUYS'—DEATHS OF TWO SURGEON-GENERALS.

London, August 12, 1898.

The government has, to the disgust of many of its followers, completely succumbed to the fear of losing the votes of a few fanatics. Consequently vaccination is no longer compulsory. This surrender to the faddists on the part of the strongest ministry of the century is the more disgraceful, inasmuch as the house of lords provided a way of escape. As I reported last week, the upper house excised the conscience clause. The bill, therefore, was brought back to the commons, the amendments of the lords disagreed with at the instigation of the government, and the bill returned to them. On Monday the government whips had secured the attendance of a larger number of peers and thereby converted their minority of two into a majority of ten. In carrying the point the government has lost caste in the country, and alienated some of its own supporters.

It is plain to ordinary people that vaccination is not a question of conscience at all. Agitators may protest against coercion in sanitary matters, as they do; but coercion is of the essence of government. Let us have a conscience clause to relieve us from paying taxes when we object, and we should soon see the measure of conscience.

If a strong government yields, against its own expressed convictions, to the clamor of a few faddists,

can we wonder that in other things the country is beginning to protest that it has no backbone?

Vaccination is now optional for the next five years, and people are talking of the experiment. They forget that the effects will extend long after the five years. The children who are not vaccinated will grow up and be scattered through the population, affording a ready soil on which small-pox will flourish whenever a stray case may be introduced.

How the voluntary system will work is foreshadowed in recent events. Last Monday there were seventy-two cases of neglect to vaccinate before the magistrates at Matlock, but they were almost all adjourned, in consequence of the parliamentary proceedings. Again, at Spalding, a return of the vaccinations during the last six months shows the act to be a dead letter, as the guardians have abandoned prosecutions. Less than four per cent. of the children born have been vaccinated. No doubt many will be a little later, but there are hundreds of unprotected children in the union, and so it is in other unions.

Among the many papers which condemn the government for its action as to vaccination I may mention the *Daily Graphic*, which has issued a series of articles upon what vaccination has done. Commenting on the epidemic of Gloucester, the *Graphic* says: "The figures stand out as they stood out at Sheffield, with sufficient clearness to convince any man whose mind is not warped by the passion for faddism, or by the fear of faddist constituents." Such lessons as these may instruct weak-kneed politicians.

The appeal made to the mothers as to the temporary inconvenience is as insincere as are other appeals to human selfishness, of which we see too many examples. One is the continual whine kept up about muzzling the dogs. Just now the newspapers are getting up a cry to take dogs for a holiday where muzzling is unknown, and various resorts are proclaiming their freedom from the restraint. One may well doubt whether this tenderness for the dogs' discomfort is not assumed as a veil for selfishness. It is so much trouble to the owner to look after his dog. To avoid it he is willing to risk hydrophobia in his neighbors. He objects to stamping out the disease by anything that gives him temporary annoyance, and oh, selfish hypocrisy! to conceal his motives declares there is no danger. If only some of these selfish men and women could see a case of hydrophobia, and then incur some risk to their own bodies, we should hear no more protests against muzzling.

There is another agitation going on, which is somewhat related to the last named. The antivivisectionists had a meeting in Chelsea to protest against a license being granted to the Institute of Preventive Medicine. A good deal of nonsense was talked, and not a little unparliamentary language employed. "Cursed atrocities" was a favorite phrase, and medical theories were denounced as the "gospel of salvation by filth." Canon Wilberforce inculcated the doctrine of the immortality of animals as well as of men, founding on it a declaration that we are intrusted with the welfare of our dumb brethren. The dispute has passed on to the local newspapers, and Dr. D. Vinrace has written in defence of vivisection as it is now practised by skilled men under legal precautions against abuse. He challenges his opponents to show that it is less justifiable to inflict pain for the purpose of alleviating human suffering than it is to do so in order to provide food for our bodies, or still more for the purposes of sport. Of course all this has been said before, but the antivivisectionists continue to misrepresent the facts, and heap abuse on all who do not agree with them.

Surgeon-Major Gardner has written to the *Morning Post* to inform intending aspirants for the Royal Medical Corps "that if they resign on the gratuity of £1,800 at fifteen years' service they will still be liable to be called upon to serve." Combatants are not liable to recall. It would certainly be awkward for a retired medical officer to be recalled, if he had gone into civil practice.

The hospital Sunday fund has a falling off of about £5,000 this year. Various explanations are offered by its supporters, the favorite one being the competition of the Prince of Wales' fund. Sir Sydney Waterlow adopts this notion, but Sir H. Burdett ridicules it. Neither of them seems to perceive that discontent with the decisions and the treatment meted out to deputations has much to do with it. Sir S. Waterlow's prejudices against specialists render his manner of receiving them objectionable, and the secretary of the fund, taking his cue from the chairman, can be most offensive.

Mr. Balfour's speech at Guy's was a remarkable success, for one of the audience has presented $6,000 to be used for the endowment of medical research, advocated in Mr. Balfour's address.

The death is announced of Surg.-Gen. John Murray, at the age of eighty-eight. He was in due course an inspector-general of hospitals in the northwest provinces of India. He retired in 1871. He was an authority on cholera, and initiated the plan of moving troops from barracks to camp as a means of meeting epidemics.

Surg.-Gen. J. F. Beatson, C.I.E., died on the 29th ult., aged eighty-one. He retired in 1880 after thirty-five years of service in India.

HEALTH BOARD AS A PART OF THE ARMY MEDICAL CORPS, DISTINCT FROM THE HOSPITAL SERVICE.

To the Editor of the Medical Record.

Sir: The outbreak and the continued spread of yellow fever, typhoid fever, and dysentery in the camps about Santiago after the cessation of fighting, when the conditions ought to be controllable; the outbreak, in epidemic form, of typhoid and dysentery in the camps of instruction at home, at camps Thomas and Alger and at Tampa and Fernandina, raise the question whether the time has not come for a radical change in the medical organization of the army, and for the formation of a sanitary or health board distinct from the hospital service.

In civic bodies it has long been recognized that the essential prerequisite for effective prevention of disease is a thorough expert knowledge of preventive medicine; it has been found necessary to separate in practice this department of medicine from the practical treatment of disease. In most large cities and towns boards of health have been established, and to these has been given the power to make sanitary regulations and to enforce them.

The successful prevention of disease requires expert knowledge not ordinarily possessed by the practising surgeon, experience in its application, and power to compel observance of systematic methods.

It is difficult to understand the apparent lack of thought given to this question, when we consider the ease with which an epidemic disease may destroy the usefulness of an army. Apparently military men give untiring attention to increasing the effectiveness of the army organization, and, in action, to preventing any useless sacrifice of lives, only to allow this organization to be undermined, and more lives uselessly sacrificed by preventable causes, than could possibly result from the fire of the enemy. We have just seen a fine army at Santiago practically destroyed, so far as

effective fighting is concerned, after the victory was won and the soldiers were returned to camp.

We have seen it necessary to remove the entire army to this country to save it from destruction. The diseases which brought this about were, according to the published army reports, malaria, typhoid fever, dysentery, and, in a lesser degree, yellow fever. It is not in the power of any one at this distance to say whether these diseases could have been prevented, under the conditions prevailing. But it is hard to understand how typhoid and dysentery, at least, could have got beyond control in well-ordered camps.

At any rate, there is no excuse for the prevalence in epidemic form, or in a conspicuous amount, of preventable diseases like typhoid fever and dysentery in camps of instruction, and if such diseases prevail it means inefficiency on the part of the authorities. It is even debatable whether yellow fever should not be classed equally with these diseases as preventable, if it is found to spread in a camp as an epidemic. It is certainly an open question whether any given epidemic may not have been due to conditions which might have been foreseen, and for which some one is responsible.

Camps of instruction, like those at Montauk and Chickamauga, ought to be ideal places for sanitation, and for controlling what are known as preventable diseases. The site can be selected after a thorough study of the ground. The qualities of water supply and the soil can be completely known. The neighboring water supplies, such as the wells in adjoining farms and springs from which the soldiers are liable to drink, can also be known and examined. With the absolute military authority possessed by the commanding general, and plenty of men at his disposal, it is perfectly easy to station guards over dangerous water supplies. Contagious diseases can be isolated in the open air, regiments separated from one another, and all intercourse forbidden by armed guards; the food supply can be absolutely controlled.

Further, and by no means the least advantage possessed, the opportunities for tracing the outbreak of an epidemic, if such should occur, are such as are rarely present in civic communities. With military officers and surgeons galore; colonels, captains, sergeants, corporals, it should be easy to trace nearly every case to its source.

What more can any sanitarian ask for, and what wouldn't a civilian board of health give for such power and such enormous resources? The health authorities of a city must take the conditions as they find them—the water supply, the drainage, the habits of life of the individual; but the military authority of a camp has it in his power to control all. In the field, where nearly everything must be sacrificed to the exigencies of winning the battle, and for which everything should be sacrificed, even the wounded and the hospital service, it may be questionable whether much can be done in the way of effective sanitation.

But it is in the camps, and to these I am now referring, that, by the confessions of the Washington authorities, typhoid fever exists to an extent for which there ought to be no excuse.

Surgeon-General Sternberg himself, in one of his circulars says: "The extensive prevalence of typhoid fever in camps of instruction indicates that the sanitary recommendations made in this circular have not been carried out. If medical officers have failed to make the proper recommendations as indicated, the responsibility rests with them. If the recommendations have been made, and not acted upon by those having authority in the various camps, the responsibility is not with the medical department; but these recommendations should be repeated and commanding officers be urged to move their camps at frequent intervals and to maintain a strict sanitary police."

The cause of the condition of affairs is not difficult to find. It lies in the continuation of a system long since abandoned in civil life. The army organization expects that the army surgeon shall be sanitarian, as well as surgeon and physician, and it relies on a multiplicity of regimental officers, each representing semi-independent authority, so far as sanitary matters are concerned, for originating and enforcing measures for protection. The average physician has a limited knowledge of expert sanitation, and practically no experience in dealing with the problems of the suppression of disease. The difference of opinion among medical men in such matters—I do not mean expert sanitarians—is as diverse as were the colors of Joseph's coat.

The answer which is sure to be made to this is that "general recommendations" issued from headquarters, which it is expected that subordinate division and regimental officers shall carry out, are not satisfactory. Therein lies not the whole, but an active factor in the present ineffectiveness. It is expected that these orders will be carried out; commanding officers are to be "urged," says Surgeon-General Sternberg. But if they are not carried out, what then? Why, as General Sternberg says, "it indicates that the sanitary recommendations made in this circular have not been carried out." But meanwhile typhoid, dysentery, and yellow fever go on claiming more victims.

The underlying cause of this condition of things exists, I believe all sanitarians would say, in the system of organization which lacks a central supervising authority competent and with power to make regulations, and to enforce them without deference to the good will and co-operation of a multitude of regimental military officers, and which intrusts the treatment of the sick for disease, the surgical operations for wounds, and the prevention of contagious diseases to one and the same body of men. The separation of these different departments has long been made in civil life, and there is no good reason why the sanitary department should not also be separated from the hospital service in the army.

A more efficient system than the present one would plainly be that which has been adopted in civil life. A sanitary board, distinct from the hospital service, and endowed, under proper limitations, with ample power not only to make regulations, but to compel their enforcement by the military department might be easily introduced in the army. There should be for each corps a sanitary department, consisting of either an expert sanitarian with staff or of a board of health officers, which should have the same relation, so far as altered circumstances permit, to the army organization that a health board bears to a city.

Such a board would have advisory functions in the selection of the site of camps of instruction, would investigate the origin and spread of contagious diseases, regulate the sale of dangerous articles of food by sutlers, select and guard the water supply, quarantine the sick, isolate commands in which some suspicious disease has broken out, and generally contrive the sanitation of camps. It would of course be subject to the authority of the commanding general and probably be a part of his staff, and perhaps issue its orders in his name.

It is not difficult to point out specific instances, even with a limited knowledge of the local conditions, in which during this war the services of such a department would have been of value. No expert sanitarian would have allowed such a site as that of Camp Alger to be selected, or would have allowed troops to be sent to any camp before there was a water supply; sutlers would not have been allowed to sell to the soldiers at Tampa and Camp Alger lemonade made from

the water of God knows what wells, with the risk of spreading typhoid.

It is safe to say that the houses in which some of our officers are said to have contracted yellow fever at Siboney, and which were later burnt by General Miles, would never have been occupied; and it is hard to believe that typhoid (probably contracted from old polluted wells in the neighborhood of the camps) would ever have become "widespread" at Tampa, Chickamauga, Fernandina, or elsewhere.

This is not a humanitarian question alone. For a civilian it is painful enough to know of the hundreds of lives ingloriously lost, after the fighting was done, and the health of thousands injured for the remainder of their lives, not by bullets, but by preventable diseases. History has shown that these diseases kill more of the troops than bullets. This is painful; but it strikes the average civilian as crass stupidity that the authorities in control should allow a command to be crippled, and its force as a fighting instrument weakened, by preventable causes. It is only fair to say that the present system of army sanitation was probably as good as could have been devised in the early periods of our army history, and perhaps represented the best sanitary system of those times. But the enormous advances made of late years in our knowledge of the causation of epidemic disease has led to the formation of separate departments in civic bodies for the distinct purpose of preventing disease, and the success in accomplishing this has amply justified this policy. It would seem now to be a question whether a progressive nation should not initiate civic bodies, and intrust to a corps of expert sanitarians, distinct from the hospital service and with ample power, the task of preserving the lives of its soldiers from the attacks of disease and the efficiency of its armies as fighting machines.

458 Beacon Street, Boston, August 17, 1898. MORTON PRINCE, M.D.

RHUS POISONING.

To the Editor of the Medical Record.

SIR: I have read Dr. Louis F. Frank's article on Rhus toxicodendron, and quite agree with him in his method of treatment. I also read the article by Dr. A. F. Hudson, in the MEDICAL RECORD of July 30, 1898. I will add that for at least fifteen years I have applied muriate of ammonium in about the same solution and in the same way, and have found it probably the most soothing application that I have ever used. I believe, however, that the action of the poison is self-limited, and that muriate of ammonium will therefore not act as a curative or a prophylactic agent.

Iowa City, Ia. J. B. KESSLER, M.D.

AN IMPROVISED SUSPENSORY BANDAGE.

To the Editor of the Medical Record.

SIR: In these earlier days of our war, when unpreparedness is of necessity a misfortune which all concerned have had unavoidably to encounter, I have been consulted by numerous officers and soldiers for advice to relieve the pendent state of the scrotum and testicles, caused by relaxation due to hot climate, perspiration, etc. In the absence of the suspensory bandage I have devised and advised the following simple resource, viz., to fold the centre line of the front shirt-tail vertically, and sew horizontally a seam about four inches long about two inches below the root of the penis when the man is standing erect, making, as it were, a shelf for the scrotum and testicles to lie upon. A round hole can be cut in front to project the penis through for urinating. Soldiers as well as others dislike the use of the suspensory or any other troublesome harness. Now here is a simple device, fulfilling readily all the requirements for pendent scrotum or varicocele, and it is all that can be practically desired for the purposes intended. I hope in this brief note I have made the idea clear to your readers.

W. H. DALY, M.D.

Major and Chief Surgeon, U.S.V., serving on General Miles' Staff, Headquarters of the Army of Porto Rico.

On Board United States Army Transport Ship "La Grande Duchesse," Approaching Porto Rico, July 6, 1898.

APOMORPHINE.

To the Editor of the Medical Record.

SIR: I have read the articles in the MEDICAL RECORD relative to the virtues of apomorphine, and wish to state that in two cases of morphine poisoning I found it perfectly useless. In each case I injected one-tenth grain, and in one case repeated the dose in a little while, but could get no result at all. My idea is that the narcotic effect of the opium deadens the vomiting-centre so much that apomorphine will not excite it. Both of these patients vomited after taking ipecac and zinc sulphate in warm water. I have every reason to think that the apomorphine was good, as it was from a first-class house. F. W. VAN DYKE, M.D.

Grant's Pass, Ore.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending August 27, 1898:

	Cases.	Deaths.
Tuberculosis	149	156
Typhoid fever	180	41
Scarlet fever	69	6
Measles	30	2
Diphtheria	96	14
Chicken-pox	8	0
Cerebro-spinal meningitis	0	7
Laryngeal diphtheria (croup)	1	2

Consumption and Marriage.—In an article in a London weekly paper on consumption and heredity, Dr. Wilson says: "I suppose in a higher era of things we may hope for disapproval of marriages between those who come of a tuberculous stock, or between any healthy and any tuberculous individuals—that is, assuming the taint to be present on one side only. The danger of unions of the latter type is that the affected partner may infect the healthy one. Affections are the last items in the category of human emotions to bear being talked to or advised by science, and I have therefore discounted any criticism of my opinions by assuming that it would only be in a higher era of things when the value and nobility of health are better appreciated, that people will refrain from unions that can only result in the propagation of disease. What applies to tuberculosis in this aspect of affairs applies to many another hereditary ailment. I often think of the sarcasm with which a philosopher from another planet might greet our practice on this, when he witnessed the intense and jealous care with which we insure the health and physical perfection of our horses, cattle, sheep, dogs, and even our pigeons, while as regards our own hereditary history we are absolutely careless. It is an old, old story this, the problem of inheritance; but despite the plain evidence that disease can be and is transmitted often to the utter undoing of a family, we proceed placidly to ignore all the teachings of science in the matter and raise races of weaklings, born only to die prematurely."

Francis Bacon's Warts Cured by Bacon.—The takinge away of Warts, by Rubbinge them with some what yt afterwards is put to wast, and consume, is a com'on exp'ment. And I doe apprehende it the rather because of mine owne exp'ience. I had from my Childhood a wart uppon one of my Fingers: Afterwardes when I was about sixteen years old, being at Paris, there grew upon both my handes a number of Warts (at ye least 100) in a Moneths space. The English Embassadours Lady, who was a woman free from sup'stition, told me, one day; she would helpe me away with them. Whereupon shee got a peice of Larde, wth ye Skin on, and rubbed ye Warts all over, wth ye fat side; and amongst ye rest yt Wart wch I had had from my Childhood; Then she nayled the Peice of Lard wth ye fat towards ye Sunne upon a Poast of her Chamber window wch was to ye south. The Successe was, that wthin five weekes space, all the Warts went quite away: And ye Wart wch I had soe longe endured for Company. But at ye rest I did little marvaile, because they came in a shorte time, and might goe away in a short time againe. But ye goinge away of yt wch had staid soe longe doth sticke with me yet. They say ye like is done by rubbinge of Warts wth a greene Elder sticke, and then buryinge the sticke to rot in mucke.—*Notes and Queries.*

An Ancient Hospital.—A very interesting discovery is announced from Baden near Zurich. The learned have been discussing for ages whether anything in the way of hospitals was known to the ancients. It is not to be said that they have been disputing, for there was not enough material hitherto to support a lively argument. One might read the whole of Greek and Roman literature carefully without noticing one passage that might be interpreted as an allusion to a hospital. The works of Hippocrates could not fail to speak of them surely if any existed, but nothing is there beyond a reference to the notes of "cases" observed in the Temple of Æsculapius. So it is generally assumed that there were no hospitals in those days; the æsclepia were simply baths where massage was given. We now learn from the London *Standard* that there has been discovered at Baden a hospital containing "fourteen rooms supplied with many kinds of medical, pharmaceutical, and surgical apparatus, probes, tubes, pincers, cauterizing instruments, and even a collection of safety pins for bandaging wounds," but these things are familiar. "There are also medicine spoons of bone and silver, measuring-vessels, jars and pots of ointment, some still containing traces of the ointment used." The latest date of the coins found appears to be in the reign of Hadrian. Probably it was a military hospital, for this was the station of the seventh and eighth legions. But the find is certainly not less interesting on that account, for the army medical service of Rome and Greece is one of the deepest mysteries of archæology. Cæsar refers only once to his regimental surgeons; is there a single distinct allusion elsewhere? We hail with puzzled gratitude the casual remark of Xenophon, that the Spartans sent their doctors to the rear when a fight impended, but we look vainly for more information from him or anybody else.

Algæ in Drinking-Water.—In a work on the algæ of the Hamburg waterworks, Herr O. Strohmeyer states that the green algæ—Cladophra, Spirogyra, Enteromorphra, Stechococcus, etc., have a very powerful effect in purifying water by the destruction of bacteria through the agency of the oxygen which they exhale. Those algæ, on the other hand, which are inclosed in a mucilaginous sheath, especially diatoms, have a very prejudicial effect on drinking-water by the filters clogging.

Antisepsis in Excelsis.—We have heard of medical men wrapping themselves up in sheets and putting towels round their heads when visiting patients suffering from infectious disease, regardless of the feelings of sensitive patients at such an apparition, but certain surgeons abroad seem anxious to imitate the myrmidons of the Inquisition, and before performing any surgical operation they don hoods or capotes with no opening except for the eyes in order to guard against the "rain of bacteria" which might follow the accidental brushing of the operator's head against that of an assistant. In mercy to the patients it is to be hoped that they do not assume this ghastly attire until the former have been fully anæsthetized. A photograph of a group of surgeons in full canonicals bending over the emaciated body of some hapless patient would, if properly placed on view in a populous thoroughfare, certainly have a *succes de curiosité.*—*The Medical Press.*

The Purity of London Water.—In a report which will shortly be presented to the London county council the water committee recommends that the council's chemist should be authorized to make for a certain period a daily microscopical examination of the water supplied by each of the metropolitan water companies. At present the examinations are made three times a week, and the committee states that as a result of such examinations made between January, 1897, and May, 1898, it has been noticed that considerable improvement has taken place in the quality of water supplied. This is stated by the chemist to be in some degree due to the increased storage room secured by some of the companies, thereby obviating the necessity of taking water from the river during storm periods, and also undoubtedly to a much greater extent to the improvement in the mode of filtration adopted by the companies. The chemist also points out that there has been an improvement in the microscopical and bacteriological character of the water in 1898, although there is yet much to be desired in that direction. On many occasions anguillulæ, rotiferæ, portions of insects, decaying vegetable matter, and dyed fibres had been found, which certainly should not be present in efficiently filtered water when drawn from the mains. He gives several instances in which during the past seventeen months the water supply when drawn from the mains of some of the companies had been unfit for drinking-purposes.—*London Times.*

Ether Tippling.—The medical officer of health for the district of Heydekrug, in Lithuanian Prussia, has recently drawn attention to the fact that ether tippling is excessively prevalent and constantly increasing. He ascribes this to the fact that the recently increased excise duties have advanced the price of spirits and practically inhibited their use among the lower classes, who are chiefly of the Slav race. It is added that the vice is an importation from Russia, it being very prevalent in some districts of the Muscovite empire. Children, it is declared, often come to school exhibiting signs of having imbibed ether before leaving home. Mothers give it to their offspring to relieve abdominal pain; and on market days the odor of the drug is perceptible everywhere in the respiratory exhalations of the peasantry of both sexes.

Dangerous Visits.—The trial of a doctor's suit was published in a Connecticut newspaper some years ago, in which a witness was called for the purpose of approving the correctness of the doctor's bill. The witness was asked by the lawyer whether the doctor did not make several visits after the patient was out of danger? "No," replied the witness, "I considered the patient in danger so long as the doctor continued his visits."—*The Sanitarian.*

Do Women Perform Illegal Operations on Themselves?—To many doctors the idea of an unskilful woman being guilty of an attempt to perform an illegal operation on herself indicates such an amount of fatuous folly as to appear almost incredible. In view, however, of the prominence which "illegal operations" are enjoying at present and the circumstances attending some of them, it becomes important to question whether or not the presence of a perforated wound into the peritoneum, through or in the vicinity of the uterus, implies a second person as operator. It is very difficult to obtain reliable evidence on such a point, but the evidence to be had leads to the belief that women not infrequently attempt to procure abortion for themselves by illegal methods. For this purpose they use such dangerous implements as bonnet pins and the like, and the ease with which they thus provoke internal hemorrhage acts as an encouragement to them to persevere in their efforts. The sensitiveness of the uterus and the upper part of the vagina is not at all great, and it is by no means unlikely that a resolute woman might endure the pain inflicted in producing a perforated wound.—*Medical Press and Circular.*

The Red Cross Society.—In view of the magnificent past record of the Red Cross Society and of the good work now being done by its members, a short sketch of its founder may be interesting. Much ignorance prevails as to the origin of the society; in fact, many persons are unaware of even the name of its initiator. The honor of the first conception of such a society belongs to J. Henri Dunant, who was born at Geneva on May 8, 1828. His family had done the State service for more than two centuries. When quite a young man he devoted himself to philanthropic work among the poor of his birthplace. Deeply impressed by Miss Florence Nightingale's work in relieving the sick and wounded during the Crimean War, he was still more vividly stirred by the sufferings of the wounded at the battle of Solferino, of which he was an eye witness, and which he described in a pamphlet entitled "Un Souvenir de Solferino." The number of wounded at this engagement reached the appalling figure of twenty-two thousand, and, the surgeons available being quite unable to attend to so great a body of men, the consequence was that most of them were compelled to remain for days on the field without medical care or nursing of any kind. M. Dunant described this terrible state of affairs in such graphic language that a thrill of horror went through the civilized world. He also demonstrated that no army medical service could be expected to stand such a strain on its resources as at Solferino, and suggested that the military medical service in all armies should be supplemented by volunteer aid societies. In furtherance of this scheme he in 1863 made a pilgrimage at his own expense through the different countries of Europe, for the purpose of enlisting the support of the sovereigns, ministers, and other great and rich persons. Finally through his efforts, in October, 1864, the historic conference was held at Geneva, from which sprung the convention and the Red Cross Society. There is a good deal of misconception with regard to the rights conferred by wearing the badge of the Red Cross. As a matter of fact the Geneva congress declined to consider the question of independent volunteer aid societies being placed under the convention, but carefully confined its privileges to the medical services of the armies engaged. Surgeon-Col. W. F. Stevenson, of the British army, in his excellent treatise on wounds in war, defines the duties of the Red Cross Society. Very clearly he says: "The notion is far too common that the Red Cross is a civil distinction, that it is a sign which may be carried by private individuals and by members of non-military societies, indicating that they are qualified to aid sick and wounded persons; and the uses to which it has been and unfortunately is being put foster this misapprehension. Civil nurses wear it; it is placed on the labels of bottles of quack medicine, and its employment is often quite apart from military medicine and surgery. All this is wrong. Persons who in this way mark themselves or their goods with the Red Cross make use of a sign to which they have no right or title, and do it in absolute ignorance of the meaning of their actions. The Red Cross is as purely a military distinctive mark as is any regimental badge worn as a part of a soldier's uniform." In a word, the Red Cross Society was intended as an adjunct to the regular-army medical establishment, and was meant always to be subject to the control of the general in command.

Language of the Eye.—Louis Robinson, in a recent number of *Blackwood*, gives the result of some of his investigations on this subject. He observed that the pupils of a fox terrier, when teased beyond endurance, became greatly dilated, and that the eye chambers reflected light in exactly the same way as that of the human being when under the dilating influence of belladonna. He discovered the same phenomena extended to cats and monkeys when enraged and meditating mischief, but that when making an attack the pupils became suddenly contracted.

The Puritans Not Teetotalers.—That our Puritan forefathers did not believe in the healthfulness of water as a beverage would seem probable from a copy of a record of the town of Beverley, Mass., on the occasion of a minister's ordination in 1785. It is as follows: "Thirty bowles of punch before they went to church, £3; 80 people eating in the morning, at 16d., £6; 10 bottles of wine before they went to meeting, £1 10s.; 68 dinners at 30d., £10 4s.; 44 bowles of punch while at dinner, £4 8s.; 28 bottles of wine, £2 14s.; 8 bowles of brandy, £1 2s.; cherry rum, £1 10s.; and 6 people drank tea, 9d."

Health Reports.—The following statistics concerning small-pox, yellow fever, plague, and cholera have been received in the office of the supervising surgeon-general of the Marine Hospital service during the week ending August 27, 1898:

		Cases.	Deaths.
Small-Pox—United States.			
Alabama, Mobile	August 3d to 17th	5	
New Mexico, Albuquerque	August 13th	15	
Small-Pox—Foreign.			
Australia, Sydney	July 9th to 16th	..	1
Belgium, Liege	July 23d to 30th	..	1
France, Nantes	July 1st to 31st	..	1
Paris	July 31st to August 6th	..	1
Honduras, Tegucigalpa	July 16th to 23d	1	
India, Calcutta	July 9th to 16th	..	1
Madras	July 9th to 16th	..	1
Russia, Odessa	July 23d to 30th	3	
St. Petersburg	July 23d to 30th	5	2
Warsaw	August 1st to 8th	..	6
Sweden, Christiania	July 23d to 30th	1	
Uruguay, Montevideo	July 8th to 16th	2	
Yellow Fever—United States.			
Florida, Tortugas Quarantine	August 18th	1	
Georgia, South Atlantic Quar.	August 21st	1*	
Louisiana, Franklin	August 23d	1	
Yellow Fever—Foreign.			
Brazil, Rio de Janeiro	July 1st to 8th	29	20
Colombia, Cartagena	July 1st to 31st	5	4
Mexico, Tampico	August 7th to 14th	3	17
Vera Cruz	August 16th	..	1
San Salvador, San Salvador	July 10th to 16th	8	2
San Salvador	July 17th to 23d	4	1
Plague.			
India, Bombay	July 12th to 26th	..	69
Calcutta	July 8th to 16th	..	12
Cholera.			
India, Bombay	July 19th to 26th	..	4
Calcutta	July 9th to 16th	..	6
Madras	July 9th	..	13
Madras	July 16th to 23d	..	16

* On revenue cutter *Woodbury*.

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Original Articles.

THE ELIMINATIVE TREATMENT OF TYPHOID FEVER—A REPLY TO A RECENT CRITICISM OF THIS METHOD.

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IN a recent paper on "Some of the Intestinal Features of Typhoid Fever,"[1] Dr. Osler refers to the eliminative plan of treatment as follows: "We have possibly been too fearful of the dangers of the use of purgatives in typhoid fever. The experience of a great many men who have adopted the eliminative method of Thistle, or who have given salines or calomel freely, shows that the mortality is not materially increased over that from the ordinary symptomatic plan. My contention, however, is that they are not indicated, as it is not likely that the typhoid bacilli multiply and develop their poison to any extent in the intestinal contents themselves."

The first sentence in the above quotation would seem to indicate a remarkable change in the mind of the distinguished author regarding the use of purgatives in typhoid fever. Hitherto their use has been denounced by him as "wrong in theory and dangerous in practice." Now, accepting the experience of a large number that the practice of giving purgatives in this disease is not dangerous, and thus having got rid of "the lion in the way," he still maintains that their use is wrong in theory. The eliminative and antiseptic method of treatment has on other occasions received some attention at the hands of Dr. Osler, but always in the way of denunciation and adverse criticism.

To this course one could not possibly have the slightest objection but for the fact that the criticism has been directed, not against the theory advanced, but against what the objector supposed to be the theory. From the consistent way in which the theory of eliminative treatment has been misstated and misunderstood by him,[2] the only inference open is that my papers on the subject in which the theory involved in this plan of treatment was set forth had unfortunately escaped his notice.

The quotation from his recent paper, given above, illustrates admirably what I have just stated. His contention that purgatives are not needed, because he considers it unlikely that the typhoid bacilli multiply and develop their poison to any extent in the intestinal contents themselves, would imply that in carrying out this plan of treatment purgatives are given with the sole purpose of clearing typhoid bacilli and the poison generated by them from the intestine.

Such is not the case, and it is manifestly a misrepresentation of the theory of eliminative treatment to convey any such idea to the mind of the reader. In all my published papers I have taken the utmost pains to combat this error and to point out that the idea of elimination by means of purgatives must not be limited or confined to the simple clearing of bacilli and toxins from the intestine, but must also embrace withdrawal of toxins from the body by way of the intestine. In short, elimination in typhoid fever must be understood in the same sense as elimination in, for example, lead poisoning.

The idea in the use of purgatives in the treatment of typhoid fever, if I may be permitted again to outline the theory, is:

I. To facilitate throughout the entire duration of the disease elimination of toxins from the body.

II. To clear out the intestine at the earliest moment, carrying away bacilli and toxins which would otherwise in all probability go to increase the existing infection and intoxication of the body.

III. To keep the intestines as free as possible from bacilli and toxic substances, thus preventing to a great measure reinforcement to the bacilli and toxins already located in Peyer's patches, the solitary glands, mesenteric glands, spleen, and other parts of the body.

IV. To maintain the bowels free from bacilli, of all kinds, and from accumulations of decomposing and toxic substances, and thus to enable the liver to exercise its poison-destroying and depurative functions to greater advantage against the poisons produced by the colonies of bacilli situated in the lymphatic structures, spleen, or elsewhere in the tissues and fluids of the body.

Modern physiology has made it clear that one of the greatest functions of the liver is to intercept and destroy or cast out of the body toxic substances found in the circulation.

The toxic substances must of course be carried to the liver either by the blood stream in the hepatic artery or by the veins of the portal system.

As a result of this poison-abstracting function of the liver, the pint or more of bile daily poured into the intestine is under ordinary circumstances in the healthy body highly toxic. Semmola and Giofiredi in their recent work on "The Physiology of the Liver and the Function of Bile," in the "Twentieth Century Practice,"[3] accept the estimate made by Bouchard, that the bile is under ordinary circumstances nine times as toxic as the urine.[5] They also draw attention to the fact that in case of bacterial invasion, such as typhoid fever, the toxicity of bile becomes immensely increased.[6]

It is therefore most reasonable to assume that by frequently and repeatedly clearing from the intestine this highly toxic bile the sum of poison in the body is lessened, for, be it remembered, if the bile poured into the intestine be not carried on out of the intestine, it to a great degree becomes reabsorbed, and thus the effort of the liver to free the body of the toxic substances is in a measure rendered nugatory.

In the case of the typhoid toxin Semmola and Giofredi quote Roger as having demonstrated that it actually is intercepted by the liver.[7]

Clearing out the intestine and maintaining it as free as possible from all forms of bacilli and toxins indirectly assists the depurative function of the liver, for the less the amount of poison carried by the portal system from the intestinal tract, the more effectually

will the liver deal with the toxins in the general circulation. This scavenger function of the liver is, however, exercised within certain limits, and if excessive quantities of poison should be carried from the intestine the function may be taxed to the full; and so the liver will be unable to deal with the toxins in the systemic circulation. Or, again, the portal blood may carry so much toxin from the intestine as completely to overwhelm the liver, so that it is able neither to guard the portal entrance nor to intercept toxins coming through the general circulation. The irritation of hepatic tissue in this way would seem to furnish an explanation of the tenderness and enlargement of the liver sometimes noticed during the course of typhoid fever.

Consideration of these facts in hepatic physiology cannot but impress one with the desirability of constantly clearing away the toxic bile and of keeping the intestine as free as possible from bacilli and toxic substances throughout the entire duration of the disease. It also shows the wisdom of employing intestinal antiseptics and of exercising care in the arrangement of the patient's food, so that the least possible residue may escape assimilation and remain in the intestine to undergo decomposition.

The antiseptic substances chosen should, however, be the least harmful, for, if poisonous substances are selected to purify the intestine, they themselves become a tax upon the liver. I have before pointed out that toxic antiseptics—*e.g.*, salol—can be used much more freely if at the same time purgatives are employed frequently.[8]

Elimination of toxins by way of the intestinal canal, although mainly through the medium of bile, occurs to a very considerable extent through the serous exudate from the intestinal wall.

None, I imagine, will question the correctness of this view. In a condition such as typhoid, where the fluids of the body hold in solution excessive quantities of toxic substances, the serous exudate into the intestine in response to purgatives must of necessity bring with it some of the toxins. Purgatives, then, facilitate elimination of poison from the body through the toxic bile, and to a lesser degree perhaps through the toxic serum.

One cannot leave the consideration of this subject without noticing the indispensable relation which the giving of large quantities of water bears to the use of purgatives in this scheme of elimination. Unless care be exercised in this matter the fluids of the body would be drained off, to the serious disadvantage of the tissues. Moreover, the toxins in the body would become more concentrated and therefore more harmful.

A moment's reflection will show the wisdom of this course during the employment of purgatives, in this way replacing the toxin-laden fluid which has been carried away.

Although the purpose of this paper is to indicate the use of purgatives in the treatment of typhoid fever, yet in the eliminative plan of treatment which I have advocated the excretory function of the kidneys was not lost sight of, and it was shown that elimination of toxins by the kidneys is facilitated by the giving of large quantities of water.

I have before also advocated the use of calomel, in connection, of course, with salines, because of its excellent diuretic action.[9] It consequently promotes elimination through both the intestines and the kidneys.

To summarize, the use of purgatives in typhoid fever and the purpose of the eliminative plan is:

1. To limit the original infection and intoxication of the system generally.

2. To carry away the toxic bile as it is poured into the intestine.

3. To promote elimination through the medium of the serous exudate into the intestine.

4. To promote excretion of toxins by the kidneys.

5. By lessening the toxæmia, to increase the resistance and aggressive action of the tissues. (I have before drawn attention to the fact that the aggressive and defensive action of the cells must be in inverse ratio to the degree of toxæmia.[10])

6. To prevent excessive accumulation of bacilli (typhoid bacilli, colon bacilli, etc.) and toxins in the intestinal glands, thus lessening the likelihood of extensive necrosis and ulceration, and the dangers incidental to that condition.

7. By maintaining the intestine as free as possible from bacilli and toxins, and frequently clearing it out to lessen the work thrown on the liver from the portal side, and thus to enable it to exercise its depurative function more fully in the interception of poisons in the general circulation.

8. To lessen the chance of death from exhaustion due to the long-continued action of large quantities of poison on the tissues.

9. To lessen the amount of poison in the body and avert the danger of death from excessive accumulation of toxin, *i.e.*, acute toxæmia.

10. To prevent the discomfort and danger arising from accumulation of gases in the intestine.

11. To prevent or control diarrhœa. Whether the diarrhœal flux be due to bacilli or irritant matter in the intestine or is the physiological result of toxic substances in the system, in either case the action of purgatives would be beneficial. In the one case the irritants, whatever their nature, are removed; in the other the systemic toxæmia is lessened.

12. By keeping toxæmia at the lowest possible point, the functions of digestion and assimilation are less interfered with and nutrition is better maintained.

Dr. Osler will have it that the advocates of the use of purgatives and antiseptics look upon typhoid fever as a disease of the intestines, while he himself would be with those who have learned within the last few years that it is an infection of the system generally. Such an assumption is entirely unwarranted. My own position has always been that typhoid fever is a disease primarily of the intestines, the bacilli first invading the tissue in the intestinal wall and afterward reaching all parts of the body. Although primarily a disease of the intestine, it quickly becomes a general infection. So great an authority as Prof. Sydney Martin adheres to that view of the question, and considers that "the arguments advanced in support of the belief that typhoid fever is a general infection with a secondary intestinal lesion, are not very satisfactory."[11]

He considers that, "from our knowledge of other intestinal infections, the view that the infection in enteric fever is primarily intestinal is the more logical."

That intestinal ulceration is not an essential or necessary feature in typhoid fever I fully believe. I advanced that view in my paper published in the MEDICAL RECORD of March 1, 1894, and pointed out that if the intestine be thoroughly cleared the process of infection is interrupted, the local infection of the gland to some degree limited, and as a result the glandular tissues are more likely successfully to resist the bacilli already located in them and to escape necrosis and ulceration.

Coming now to the contention that it is not likely that the bacilli in the intestinal contents multiply and produce their poison there to any extent, at the outset I desire to point out that the presence of specific bacilli in the intestinal contents is not essential to the theory of eliminative treatment. In their

entire absence the effect of purgatives would still be to carry out of the body the poison-laden bile and the serous exudate containing its quota of toxin. However, the objection does not appear to be well taken. There are many reasons that make it extremely likely that the specific bacilli do multiply and produce their poison in the intestinal contents themselves.

Presumptive evidence of their multiplication in the intestines is furnished by the fact that the infection is carried by the intestinal contents. The simultaneous infection of several feet of the intestinal mucosa I have before advanced as a reason for believing in a previous multiplication in the intestinal contents.[12]

There is much difference of opinion among bacteriologists concerning the identification of typhoid bacilli in the intestinal contents. The very close resemblance to the colon bacillus is the great difficulty. As bearing directly on this question, I quote the following from the recent Croonian lectures by Prof. Sydney Martin.[13] "It has been said that inasmuch as the bacillus is not constantly found in the motions and is found in the urine, that there are not many bacilli in the intestine. There is nothing whatever in this argument. We can readily see that the bacillus might not be discharged in the fæces in sufficient numbers to be easily found. Moreover, if there is a great increase in the number of bacillus coli in the intestinal tract, not only is there great difficulty in finding the typhoid bacillus in the presence of large numbers of this micro-ôrganism, but the more vigorous bacillus coli might actually beat out of the field the less vigorous typhoid bacillus."

One must also not lose sight of the fact that much of the toxæmia is, as I have before argued,[14] in all probability due to the products of associated bacilli and to decomposition in the intestine.

In the case of the bacillus coli the probability is exceedingly strong that it plays a very considerable part in the production of the symptoms seen in typhoid. In a former paper I drew attention to the fact that the damaged intestinal wall opened the way for the migration of the colon bacillus from the intestine.[15]

The recent experiment of Sydney Martin[16] would seem to have definitely settled the point. He extracted colon bacilli from the spleen of a patient with typhoid fever, and found that their virulence was much increased over that of colon bacilli from the normal intestine. He assumes, also, that the colon bacillus had been carried from the intestinal canal.

We have in this experiment an actual demonstration of the correctness of the view held by many that the bacillus coli becomes increased in virulence when associated with the typhoid bacillus. It is also confirmatory of the belief that the injury done to the intestinal wall by the specific bacillus opens the way for the colon bacilli. These facts being borne in mind, it is surely not difficult to appreciate the advantage of keeping the intestine as free as possible from bacilli of all kinds, even if one were to grant, in spite of evidence to the contrary, that the typhoid bacilli do not multiply and produce their poison to any extent in the intestinal contents themselves.

I believe, too, that in preventing decomposition and bacterial accumulation in the intestines, the liability to those bacterial invasions of the weakened body in the late stage of the disease, commonly spoken of as "terminal infections," is greatly lessened. Undoubtedly the invading bacilli in the vast majority of these cases come from the intestine.

The constant effort to facilitate elimination and keep the toxæmia at the lowest point throughout the disease of course contributes in lessening this liability, owing to the fact that nutrition is less interfered with, and consequently the tissues maintain a higher quality of resistance.

In advancing the theory of eliminative treatment in typhoid, I have always adhered to the view that much of the toxæmia and many of the symptoms were due to the associated bacteria;[17] that there was, in other words, a mixed infection, if not primarily, at all events as a later development.

Regarding the experience of those who have adopted the eliminative plan of treatment, I am not disposed to accept what Dr. Osler asserts is their verdict, namely, that the mortality is not materially increased over that of the symptomatic plan. Their experience, I believe, and I have had many communications and many opportunities for discussion, goes to show that the adoption of the eliminative plan lowers the mortality in a remarkable degree. More than that, it lessens the severity of the symptoms and the duration of the fever. Indeed, many of the symptoms wholly disappear under this form of treatment.

I might instance the record of the Toronto General Hospital, although not all the cases were treated on this plan. However, the vast majority were treated either on the eliminative plan or by means of calomel and salines or other purgatives freely and frequently given. No selection of any kind was made and there was no attempt to make a record. One of the deaths occurred on the day the patient was admitted. No cases are excluded from the list. In the four years from 1893 to 1897 there were 563 cases, with 37 deaths, 6.57 per cent. mortality.

In the paper above referred to and on a former occasion, Osler, in referring to this plan of treatment, directs attention to the fact that La Roque, of Paris, advocated the use of purgatives in the treatment of typhoid cases in 1849, and is inclined to make it appear that the plan of treatment advanced by me is simply a revival of an old treatment. While I would not for a moment detract from whatever credit is due M. La Roque, yet I altogether fail to see how the empirical giving of purgatives in utter ignorance of the nature of the disease, at a time when no distinction was made between typhus and typhoid, and when the existence of bacteria was not even guessed at, can be made to appear identical with the eliminative plan advanced by me and based on the relatively clear light which the most recent facts of physiology and bacteriology have thrown upon the pathology of typhoid fever and upon the nature of bacterial processes in the body generally.

Reference is also made to what Professor Osler somewhat contemptuously calls the "gunshot" Woodbridge tablet. Examination into this method of treatment shows it to be simply an adaptation of the eliminative and antiseptic plan. At first the use of the calomel and antiseptic tablets was unaccompanied by any theory as to their action, but gradually the theory advanced by me, setting forth the eliminative and antiseptic plan of treatment, has been utilized, until recently the title chosen by me for my first communication on the subject has been appropriated, and one reads of "the eliminative and antiseptic treatment of Woodbridge."

Why simply combining a purgative with antiseptics in the form of a tablet, after the theory and principles involved have been fully set forth, should be considered a special form of treatment, passes comprehension. One cannot easily see, either, the advantage of a scheme which makes the attending physician simply an automaton.

Surely the choice of purgatives and antiseptics and the apportioning of them may with much greater advantage be left in the hands of the physician at the patient's bedside. Having a clear conception first of what he hopes to accomplish by them, he may then

make his selection and arrange dosage from day to day, according to the requirements of the case, in a rational manner.

In conclusion I may be permitted to point out that my contention in the article in which the theory of the eliminative and antiseptic plan of treatment was first set forth, in the *Canadian Practitioner* of April, 1893, was that the profession had, to use Osler's words, been too fearful of the danger of purgatives in typhoid fever, that the danger had practically no real existence, and that the imaginary danger most effectually barred the way to treatment which appeared to be the logical outcome of the clearer ideas concerning the nature of typhoid fever and in a general way of bacterial processes.

So unorthodox a contention met with widespread opposition, as might have been expected, because it was diametrically opposed to the teaching found in every text-book on medicine. However, since that time opposition in this country has gradually disappeared, until now we have this virtual acknowledgment of the correctness of the position I then took, coming from one of its most pronounced and most powerful opponents.

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TRAUMA A CAUSE OF APPENDICITIS.

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On every hand we hear the query, "Why is there so much more appendicitis to-day than ever before?" Answers to this query are not very satisfactory. The medical profession takes credit to itself, and says, "We are much better able to make the diagnosis." But this hardly explains the half of the increase. It would take many times all the cases of peritonitis, perityphlitis, and paratyphlitis of twenty years ago to equal in number the cases of appendicitis of to-day. To find a satisfactory explanation of this increase in all its phases we must study more carefully the causes which lead to the inflammatory involvement of the appendix. In this way alone can the true solution of the question be reached.

The idea is gaining ground that the appendix is anatomically a glandular organ. Among foreign writers especially it seems to be considered somewhat analogous to the tonsils. Its disorders then would be like those of the tonsillar bodies—follicular, mucous, submucous, infectious, exudative, and ulcerative. To continue the analogy, it is doubtless a fact that, as in the tonsils, the local inflammation of the appendix is caused by micro-organisms, specific or non-specific.

It has been demonstrated that the particular cause of the inflammatory process in the appendix is the bacillus coli communis, though in a certain proportion of cases other micro-organisms, especially the staphylococcus pyogenes and streptococcus, are also found.

These germs may gain admittance to the appendix in the intestinal fluids, or more frequently with irritating fæcal matter in hard egg-shaped concretions of various sizes, introduced into the appendix from the cæcum by force of pressure. Foreign bodies (cherry stones, orange seeds, spicules of bone) are more rarely found in the lumen of the appendix, but all come from the same source (the cæcum) and in the same way, by being forced in. The irritation of the mucous membrane by these hard substances furnishes a foothold for the bacilli—staphylococci and streptococci—to multiply and perform their destructive work.

Why this condition should occur so much more frequently during recent years is not uniformly explained. We are told by some observers that the valve over the end of the appendix is defective. The existence of this valve is not universally admitted, much less its defective condition.

Some assert that the existence of intestinal catarrhal conditions in connection with the grippe is responsible for the large increase of appendicitis in the past few years. This point seems to be proved from figures quoted by Goluboff,[1] who states that in Moscow, during the spring, summer, and autumn of 1896, the number of cases increased to four or five times the average of the past ten years.

While this explanation seems the most satisfactory one that has come to my notice as far as the general increased prevalence of the disease is concerned, there is another point in this connection which demands further attention.

All who have studied the disease agree that the majority of cases are found in young adult males, a majority so large that they furnish seventy-five to eighty per cent. of all cases. About seventy-five per cent. of all patients are under thirty years of age. These figures are significant. Occurring in other diseases, surgical or medical, we have been taught to explain such prevalence by the fact of greater liability to the predisposing cause or more frequent exposure to the exciting cause. Clinical observation and experience show this theory to be well sustained. Does it apply as well to appendicitis?

The fact that some part of the contents of the bowel nearly always furnishes the exciting cause of appendicitis makes it but logical to seek the explanation why this material should be forced from the colon into the appendix. It is reasonable to suppose that muscular contraction will produce this result. But why should the cæcum undergo such contractions more often in the male than in the female? I believe there is a sufficient explanation behind all this. I believe the true cause of the greater percentage of occurrence in young men is found in their more frequent exposure to accidental injuries and strains, and to the strong contractions of the abdominal muscles necessary in their work, thus, in either case, producing great pressure on the contents of the bowels; of this compression the cæcum receives its full share, being on the right, and usually more active side of the body. This result is but natural, and is in accordance with the principle I have stated, which is well recognized in other medical and surgical subjects.

That such a cause is sometimes hard to trace is but a natural result from the time required for the production of local inflammation from the concretion, and for the development of the germs in sufficient

[1] Berliner klinische Wochenschrift, January 4, 1897.

quantity to produce an effect so great as to be recognized by symptoms. This interval will be apparent to you as you listen to the cases I will report.

In the literature of appendicitis traumatism is mentioned as an infrequent cause. I have been able to find but one case reported with this the only cause. This case was that of a boy of sixteen years, who was struck in the right iliac region by the handle of a pushcart. A distinct tumor in that region occurred; the tenderness was most acute over McBurney's point. The tip of the appendix was found gangrenous. This case was reported by Dr. W. S. Coley in the MEDICAL RECORD of February 15, 1896.

Much like this, however, is a case reported in the New York *Medical Journal* of October 24, 1896, by Dr. D. C. Moriarta, in which a pin was found in the appendix, having been there a year without producing trouble, until inflammation was lighted up by a blow.

Rutherford Morrison, in the *Edinburgh Medical Journal*, March, April, and May, 1897, concludes that a strain may apparently originate an attack, a point which he considers of medico-legal importance.

My attention was first called to traumatism as a cause of appendicitis in the autumn of 1894, when I was called to see a young man unmistakably suffering from appendicitis. Two days before, while attempting to pry up a heavy stone by bringing his weight down on an iron bar while holding it between his thighs with his hands, he lost his hold and the bar struck him a heavy blow in the right iliac region. During the two weeks following he passed through the usual phases of an attack of appendicitis, with tenderness at McBurney's point, large, plainly defined tumor in the right iliac region, etc. He recovered without operation and has had no second attack.

The second case that was plainly of such origin was that of a boy, nine years old. This case occurred in November, 1896. I saw the boy very early in the attack, but could not get from him any history of injury till my second or third visit, when he admitted that the pain first came on while he was playing and pushing a heavy two-horse dump cart by the tongue. The cart was hard to move, so he put the end of the cart tongue against his "belly," his hands farther up toward the cart, and pushed "hard." This occurred about twenty-four hours before my first visit. The abdomen was opened on the fifth day and a quantity of pus found. The appendix sloughed away. The child recovered fully.

The third instance of traumatic origin was in a young man, a carpenter. This occurred in June, 1897. In lifting boards from a pile and handing them up to a man above him on the second-floor staging, in order to expedite matters he used his groin as a fulcrum, applying the power by taking hold with his hands, two feet or so from the end in his groin, and lifting. This brought a great pressure across his bowels upward and toward his backbone. In less than forty-eight hours the symptoms of appendicitis began. The course of the disease was typical, and fair recovery was made without operation.

This patient fell under my care because his own physician was ill and unable to attend him. Some three months later a second attack occurred under the care of that physician, by whom appendectomy was promptly performed. The genuineness of the first attack was then proved in the thickening of the omentum and the adhesions of the neighboring parts. Pus was also found. His recovery was rapid and uninterrupted by any adverse symptoms.

I have reported to you those cases which have come under my own care in which traumatism as a cause was plain. Several others in this vicinity have come to my knowledge, histories of some of which I will outline.

Dr. J. A. Donovan, of Lewiston, has given me the details of a case of appendicitis occurring several years ago, in which a boy, about ten years of age, was thrown down and one of his playmates jumped on his abdomen. The immediate pain was great, but soon subsided sufficiently for him to get home. Three days later the doctor was called and found a tumor in the central pelvic region, which was opened through the rectum. Pus and two enteroliths escaped, the cavity was washed and drained, and the boy recovered.

Dr. John Sturgis, of Auburn, relates a case in a boy of eleven years, who was kicked in the abdomen by a horse on Wednesday or Thursdeay. On the following Sunday appendicitis developed. The abdomen was opened and the diagnosis confirmed. The patient afterward died of general peritonitis.

Dr. F. L. Dixon, of Lewiston, details a case in a man, twenty-seven years old, who fell through a trapdoor seven or eight feet into a cellar. He complained of injury to his right side, but was not sick enough to send for a physician. This feeling of discomfort continued for two or three weeks, when symptoms of appendicitis appeared. Dr. Dixon was called on Friday. The diagnosis was made on Saturday. Sunday night the patient suffered severe pain and became collapsed. Incision made on Monday showed the abdomen full of free pus. Two enteroliths were found in the appendix and a gangrenous portion between them. Death occurred in a few hours.

The same physician, in January, 1897, operated on a man, thirty years of age, in an advanced stage of appendicitis. Old adhesions were found, in keeping with the history of repeated attacks. The man died a short time after the operation. Though no history of violence was obtainable at that time, several months later the following facts were related by the patient's mother: In the summer of 1896, when on a small island, the patient, in jumping from one shore to another, felt a sudden sharp pain in the right iliac region, so sharp as to make him lie down. He was a long time in getting home, having to lie down often to rest. He was about the house for several days before he was able to return to his work. Between that time and his last illness he suffered from three or four attacks.

Dr. Donovan also reports a case in a boy of nine years of age, who was jumping from a height to the ground. In three or four days appendicitis developed. The appendix was removed and recovery followed.

Dr. John Sturgis reports a case in a girl, seven years old, who fell from a swing, and developed appendicitis three days after the accident. The case was treated medically and recovered.

He also reports a case in a man, twenty-two years old, who was leading a frisking and jumping horse. In trying to hold him the man strained his side. This was on Friday. On Monday afternoon severe pain began; tumefaction and the other usual signs of appendicitis followed in rapid succession. No surgical interference was allowed. Recovery seemed perfect, and the man is now in the United States navy.

The following cases are of a slightly different class and show the effects of occupation:

Dr. Donovan reports a case (seen by him in consultation) of competitive wood-sawing between two young men. The trial ended on Saturday night, and on the following Monday one of the competitors developed a well-marked case of appendicitis. The case was treated medically and the patient successfully passed through a second attack.

Dr. B. F. Sturgis, of Auburn, reports a case in a man who did a hard day's work in the hay field on Saturday, pitching and raking the hay. The next

night it was possible to make a diagnosis of appendicitis.

Dr. Sprague, of Turner, reports a case of a boy of sixteen, unused to labor, who shovelled sawdust all day. Pain began within twenty-four hours, and the usual symptoms of appendicitis followed. The abdomen was opened on the tenth day. Recovery was perfect, though the wound healed slowly. It may be interesting to note that just before this boy was operated on he told some of the physicians present that his first pain was very severe, and was felt immediately after "skipping" a stone along the surface of the water on the day of his labor with the sawdust.

The same observer reports a case in a tailor who worked hard throwing wood into a shed. Another in a man who had done a severe day's work sawing ice.

Reports of such cases can be multiplied indefinitely, but I have mentioned enough to illustrate the several classes of accidents causing appendicitis, namely, external violence, direct and indirect, sudden strains, and repeated strong contractions of the abdominal muscles.

It may not be always easy to trace the relation of the cause, traumatism or strain, to the effect, appendicitis. But from my experience I believe that such a cause exists in a far greater proportion of cases than we imagine, till we search carefully for it. The relative percentage of the occurrence of appendicitis can be logically explained, to my mind, in no other way.

This explanation brings the subject into prominence from a medico-legal standpoint. Some of these cases are plainly the direct result of external violence, and I believe accident insurance companies, or corporations and individuals responsible for the occurrence of the accident, are as plainly liable for them as for a broken limb. Other cases are more obscure. But of all the attacks of appendicitis of purely accidental origin which I have cited, there are none in which the liability would be less plain than in the case of pulmonary disease from injury to the shoulder, which forms the subject of an editorial in the *Journal of the American Medical Association* for March 19, 1898. This case has lately been on trial in one of the large cities of the union. I will quote from that editorial.

"In the case which we have referred to, a man, by occupation a grinder, and suffering from the early manifestations of 'grinder's disease,' of the lungs, was thrown with considerable violence from the platform of a street car, and struck upon his right shoulder and chest with so much force as seriously to bruise the tissues over the ribs in the axillary line. Within the course of a week or two it was noticed that the man's health had become very much impaired. Shrortly afterward evidences of pulmonary disease became manifest, and thirty-five days after the accident the man died. At the post-mortem examination no evidence of external injury was manifest, the ecchymosis resulting from the accident having been absorbed. One lung was found to be almost entirely consolidated and the other partially so. Scattered through both were a number of large deposits of fine metallic particles, derived from the emery wheels and the steel which he had been accustomed to grind.

"Suit was brought by the administratrix of his estate, it being claimed that his ill health and death within a short time of the accident was the result of the accident. It was admitted by the railroad company that the accident had occurred, and that, so far as the accident itself was concerned, it was responsible. The question which rested on the medical experts for decision was whether the pulmonary disease which eventually resulted in the man's death could be attributed to the accident, and the testimony was such that immediately after it was heard the railroad company sought a settlement, which was granted. It was testified that severe injury to the chest might very readily so impair the vitality of the lung as to cause the rapid spread of disease already existing, but very mild in character, or to render the lung peculiarly susceptible to any infection to which it might be exposed. If the consolidation of the lung, which finally resulted in the man's death, was due to a tuberculous process, then it would be very easy to understand how a violent injury to the chest wall might so disorganize the inflammatory exudations, which had been thrown out around tuberculous and metallic deposits, that they might be broken down, thereby making open the pathways for general infection. On the other hand, it was possible that the micro-organism of pneumonia, always present in the upper respiratory passages of man, might find a ready soil for its propagation.

"This testimony is indorsed by a large amount of literature which has been accumulating during the last few years, particularly since accident insurance has become popular."

A very valuable paper bearing directly on this subject of localized infectious diseases as a sequence of slight injuries, has been written by Dr. McDill, of Milwaukee, in association with Mr. Van Alstine, of the Chicago, Milwaukee, and St. Paul Railway, and published in the *Railway Surgeon* of January 11, 1898. This paper considers mainly tuberculous and pneumonic infection. The conclusion is drawn by them, "that when negligence causes this injury and the injury proximately causes diesase, both the injury and the disease are elements of damage in legal action."

It is well for us to bear in mind that small injuries may give rise to grave diseases, and also that, this fact being known to the public, "strained relations" between cause and effect will be more frequent than ever before. Careful notes of all such cases should be kept, so that if suit be brought the full history from beginning to end may be given.

We may, I think, reasonably draw these conclusions:

1. That general prevalence of catarrhal conditions of the bowels, perhaps as an accompaniment or result of the grippe, is responsible for a large part of the general increase in prevalence of appendicitis.

2. That accidental injuries, strains, and work demanding strong contraction of the abdominal muscles may be held accountable for the greater prevalence of the disease in males.

3. That such injuries and strains act by forcing material, loaded with the bacteria which produce appendicitis, from the cæcum into the vermiform appendix.

4. That in consequence of the irritation of such material or from some other cause, these germs here find a favorable soil for their multiplication and development.

5. That in common with other germ diseases a time of incubation must elapse (for the multiplication of these germs) before symptoms sufficiently marked to prove characteristic of appendicitis can appear.

6. That the disease is of growing medico-legal importance, as many cases are of traumatic origin, and may therefore give rise to proper suits for damage or valid claims against accident insurance companies.

Microcephalus.—Nothing perhaps exhibits the enthusiasm of modern surgery more than these attempts to coax an undeveloped idiotic brain to execute the functions of intelligence.—AGNEW.

ADENO-CARCINOMA OF THE NOSE, WITH REPORT OF A CASE.*

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A GREAT difference of opinion exists among writers regarding the frequency of adenoma and carcinoma of the nose. Adenoma of the nose is not mentioned in the text-books of Morell Mackenzie,[1] E. Fletcher Ingals,[2] F. De Havilland Hall,[3] Moldenhauer,[4] Carl Seiler,[5] Schech,[6] Voltolini,[7] Lennox Browne,[8] Réthi,[9] Zarniko,[10] Flatau,[11] and Scheff.[12] All of these authors consider carcinoma of the nose a rare occurrence. Seifert and Kahn[13] do not picture a case of adenoma or adeno-carcinoma of the nose. What they reproduce on plate 16 of their atlas is an adeno-carcinoma of the *ala nasi*, and not of the nasal mucous membrane. Bosworth [14] is of the opinion that unmixed adenoma does not occur in the nasal cavity, and that when glandular tissue is met with in a neoplasm, it is purely adventitious, as in adeno-sarcoma, adeno-carcinoma, adeno-fibroma, etc. He also considers carcinoma of the nose as one of the rarest conditions, although he does not accept the assertion of Cornil and Ranvier, made as late as 1869, in their "Manuel d'Histologie Pathologique," that there is no well-authenticated case of primary carcinoma of the nose.[15] Moritz Schmidt is apparently of the opinion that adenomata of the nose are rare, and he does not mention the occurrence of adeno-carcinoma.[16] However, he mentions that carcinoma in the anterior half of the nasal fossæ, according to his experience, does occur only as so-called transformation of "soft nasal polypi;" and lacking any more definite description it is not unlikely that these "soft, nasal polypi" of which he speaks, were histologically true adenomata. J. Solis-Cohen[17] mentions adenoma of the nasal cavity as unfrequent, and he says it may extend to the smallest anfractuosities of the nasal passages and adjacent sinuses. He does not consider carcinoma of the nasal passages as of common occurrence. P. McBride[18] questions whether true adenomata have occurred. Carcinoma, however, is according to him not infrequently met with. Moure[19] mentions adenoma and carcinoma of the nose, and considers both as of not common occurrence. Dreyfuss[20] considers carcinoma of the nose a very rare disease. He could up to the year 1892 collect only thirteen cases. Since then, however, a number of cases have been reported. Massei[21] mentions that according to Péan adenomata occur frequently in the nasal cavity, and that they are liable to cause death by meningitis. He does not mention adeno-carcinoma of the nose.

D. Newman describes a typical case of adeno-carcinoma of the nose, and says that two-thirds of carcinomatous tumors of the nose are epitheliomata and the remaining third adeno-carcinomata.[22]

Of late a few additional cases of adeno-carcinoma have been reported, although the histological details are in some cases missing, in others not definite enough to render the diagnosis absolutely reliable. These references may suffice to show that there is no unanimity of opinion regarding cases of this kind. The case which I had the opportunity of observing is the following:

F. P— —, aged forty-seven, farmer, was referred to me by Dr. V. T. Churchman, of Charleston, W. Va., September 16, 1895. During my temporary absence from the city he was examined by my assistant, Dr. J. H. Bindley, who made the following notes of the case: Father died of heart disease; cause of mother's death unknown. Is not aware of the occurrence of carcinoma or tuberculosis in his family. Had measles, mumps, influenza. Does not drink alcoholics; is a moderate smoker; denies venereal diseases.

About one year ago he noticed some obstruction in the left nasal cavity, which gradually increased until breathing through that side was absolutely impossible. At this time, about four months after he had commenced noticing the trouble, the doctor removed a large growth from the nose with the snare, after which breathing was again free for about one month. Then the same trouble appeared again.

He returned to his physician who removed another large portion of the growth. After this his breathing was free for about two weeks, when it became again impeded, until after another two weeks the left nasal cavity was again entirely closed. These operations had to be repeated in intervals of about one month, so that up to the present time eight operations had been performed. The operations were followed by moderate hemorrhage, but for most of the time were not very painful, and the patient suffered only from the obstruction. Has not lost weight. Appetite good.

He was referred by Dr. Bindley to my service at the City Hospital, where during my absence Dr. S. E. Allen took charge of him. The following is the condition which was noted upon his entrance into the hospital: Man of medium size; fairly well nourished; nothing abnormal to be seen about his face. Hearing in left ear diminished. The left side of the nose is entirely obstructed by a growth which extends from the vestibulum backward and fills completely the space between the choana and the Eustachian tube. Its color is grayish-red; its surface is slightly uneven, resembling somewhat a mass of cauliflower; is soft, and bleeds readily upon being touched with a probe. Its origin cannot be ascertained, but it appears to come from the middle meatus, which it completely obliterates. The septum is entirely free from any growth; no glands are enlarged.

A large piece, involving especially that portion which surrounded the orifice of the Eustachian tube, was removed by Dr. Allen with the cold wire snare. Hemorrhage rather abundant. The microscopic examination of the removed pieces showed that the growth was a typical adenoma.

On October 5th, about two and one-half weeks after this operation, the nose having become obstructed, I removed with the cold snare as much of the growth as I could. Another examination of the pieces removed confirmed the first diagnosis. Soon thereafter, the nose began to fill up again, and, it being entirely obstructed on October 22d, a thorough operation was done under chloroform anæsthesia, in which an enormous amount of the obstructing masses was removed from the nose and from the postnasal space with snares and curettes. Pieces varying in size from that of a filbert to that of a small walnut were removed. They all were friable. The hemorrhage was rather abundant. Left side of nose packed with iodoform gauze.

The patient was doing very well after the operation; no hemorrhage occurred after removal of the tampons.

On October 29th, one week after the operation, the growth was found to have returned again. The patient was now given to understand that there was no hope of removing all of the growth by intranasal procedure, and the advisability of a more radical procedure by temporary resection of the upper jaw was suggested to him. However, he refused any further operation and left the hospital.

Portions of the growth removed at this last operation were examined by Dr. Albert H. Freiberg, then microscopist of the hospital, who had the kindness to send me the following report:

"The surface of the growth is not papillary but

* Read at the annual meeting of the American Laryngological, Rhinological, and Otological Society at Pittsburg, May 11 and 12, 1898.

smooth. Lying in a well-developed stroma of young connective tissue, abounding in easily stained nuclei, is seen an enormous aggregation of tubuli of various conformation. Some of them are fairly straight, with lumina of small calibre; others convoluted in their course, and others still short with large dilated lumina, reminding one of cystic formation. Here and there is to be seen an atypical collection of epithelial cells without evident lumen.

"The tubuli are lined with a tall cylindrical epithelium, whose nucleus is large and very easily stained. I have been unable to detect anything like cilia on these epithelia. Taken altogether, the picture reminds one forcibly of the malignant adenoma of the uterus. I should call it malignant adenoma."

For the rest of the history of this case I am indebted to Dr. Churchman, of Charleston, in a neighboring village of which the patient lived. When he left Cincinnati, he was in fairly good health, but a few months thereafter he began to decline. The growth had to be removed every few weeks.

On April 25th, Dr. Churchman wrote that he had operated upon him eight or ten times since he left Cincinnati. But, whereas formerly these operations had been entirely painless, they were now so painful that he could hardly stand them. By this time his general health had become very bad. He had a sallow complexion; the septum and right side of the nose had become involved; the eyelids were œdematous. At this time he seemed to be willing to have any operation done. Meanwhile, Dr. C. had some of the masses removed on April 25th sent to the pathological laboratory of Johns Hopkins Hospital. The report was that it was a typical case of adenoma changing into an epithelioma. Dr. C. did not see the patient for one week. When he saw him again his nose was double its size and was purple; his eyes were very much swollen, protruding and bloodshot, and he was not able to swallow anything but soft and liquid food. The patient returned to his home, and Dr. C. did not see him any more. He died on June 12th, but Dr. C. did not hear of it until after he was buried, when he received the remainder of the history from the family physician. The patient grew rapidly worse; the growth broke through the walls of the nose at its bridge, from where severe hemorrhages took place; the left orbit was more and more involved, until two and one-half weeks before death the left eye was destroyed; and at the time of death the growth in the left orbit was about two and one-half inches in diameter, and bleeding all the time. There was absolutely no hearing for the last ten days or two weeks, and his mind was entirely destroyed for the last five or six days. Unfortunately Dr. C. did not hear of his death in time for a post-mortem.

We have to deal here with a case of malignant disease of the nose, the course of which, if the time of the commencement of the trouble was correctly stated by the patient, extended over a period of about two years. The only question that could arise, in my opinion, is, whether we had to deal with an adenoma that underwent carcinomatous change, or whether it was not a case in which there was present or developed later a carcinoma in addition to a benign tumor. Now, it is a fact that adenoma of the nose is looked upon by many as a benign tumor; so, for instance, by Moure,[19] but he says that the gravity of adenomata of the nose must be considered from the point that they have a manifest tendency to degenerate into carcinomata. It is true that many doubts have been raised against the probability of transformation of benign tumors into malignant ones, since Semon's collective investigation regarding the transformation of benign tumors of the larynx into malignant ones,[23] especially as a result of previous operations. Yet these investigations do not absolutely exclude the possibility of such an occurrence. Senn[24] says that he is convinced "not only that such a transformation is possible, but also that it takes place much more frequently than has heretofore been supposed." The same author says in another place:[25] "The liability of an adenoma to become transformed into a glandular carcinoma is perhaps greater than that of papilloma. In fact, according to Dr. J. Hamilton, carcinoma is preceded by an adenomatous stage. . . . The earliest evidences that such an occurrence has taken place are a more active multiplication of epithelial cells, and their migration through the basement membrane into the connective tissue outside the limits of the tumor. . . . "The transition into carcinoma is observed oftener than a resulting sarcoma." [26]

In reference to adenoma of the antrum of Highmore (and in this case there is nothing to show whether the tumor originated in the antrum or in the nose), Marshall[27] makes the statement that they "not infrequently manifest malignant tendencies, ending in adeno-carcinoma. The malignancy of this form of tumor is equal to that of the most malignant type of carcinoma." This tendency of some adenomata in mucous membranes to involve the submucosa and surrounding tissue is well known in some localities, especially in the stomach, the rectum, and, above all, in the uterus, in which latter place it is described by pathologists and gynæcologists as adenoma malignum.

Ziegler[28] says in this respect: "The clinical importance of adenomata is different according to their location, not only in regard to possible injury of vital organs, but also in reference to their behavior toward adjacent structures. . . . We can and should, therefore, differentiate an adenoma benignum from an adenoma malignum or destruens. . . . In an advanced stage of proliferation of these growths it is, indeed, the rule that part of the epithelial elements assumes the shape of dense cell conglomerations, and we are then in the habit no longer to call such a growth adenoma but an adenoma-carcinoma."

If, therefore, we are not inclined to believe that a primarily benign tumor, an adenoma, was transformed into a malignant growth, an adeno-carcinoma, we may assume that there are certain forms of adenoma which from the start are of a malignant character, to be called adenoma malignum, although histologically they cannot at an early date be differentiated from a benign innocent tumor.

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DIAGNOSIS OF ANEURISM OF THE THORACIC AORTA, ILLUSTRATED BY A CASE.

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The diagnosis of aneurism may be very easy or very difficult, and often it cannot be made at all. There is a triad of clinical symptoms, which, when present, makes the diagnosis simple and beyond any doubt. Where in the course of a vessel we find a pulsating tumor with its concomitant features—as murmurs, inequality of pulse in time and force, pressure symptoms, variable as to location, and, lastly, pain—the diagnosis of aneurism can be made almost with certainty. We have to exclude only a possible transmission of arterial pulse by way of a tumor, usually cancerous. The character of the pulsation, either expansive or vertical, settles that question at once. A second class of cases gives signs and symptoms of pressure, with or without pain, and necessitates a differential diagnosis as to the character of the tumor, aneurism or new growth. The presence of symptoms depends, as stated before, mainly upon the location of the aneurism. Those of the arteries of the extremities, and those of the ascending and usually also of the transverse thoracic aorta, since they are near to the surface, give early symptoms. Aneurism of the smaller and deep vessels, *i.e.*, of the brain, descending thoracic aorta, abdominal aorta, and its branches may long escape a definite diagnosis. A third class of cases takes an entirely latent course, with no symptoms whatever or with ill-defined ones; as, for instance, pain only of variable character; or they may not give any sign of their existence during life or up to the fatal termination by rupture. Those escape diagnosis altogether and are diagnosed only on the autopsy table. These statements hold good especially in cases of the smaller-sized aneurisms of the descending thoracic aorta. The deep-seated course of this vessel does not allow us to utilize our means of physical diagnosis before the sac reaches a size sufficient to erode vertebræ and ribs and appear on the chest wall. The adjoining tissues—pleura, lung, and œsophagus—stand encroachment by a tumor of moderate size in this region quite a long time before inflammatory reaction or too much pressure interferes with function. The absence of nerves, except the sufficiently protected intercostal nerves, gives immunity against pain and definite pressure symptoms for any length of time. It is true that positive proof of a tumor in the posterior mediastinum gives a great probability of the existence of an aneurism of the descending aorta, as specific gland enlargement or neoplasm in this region is rare (one to four). But this fact has only a relative value for diagnostic purposes. Therefore it is no wonder that the knowledge of aneurism of the descending thoracic aorta, according to Morgagni, reaches back only to Vesalius, 1557. His case presented a pulsating tumor. Aneurism was diagnosed and found at autopsy. Scarpa, in the beginning of this century, in his famous work, "Sul' Aneurisma," Pavia, 1804, describes and illustrates a case in detail, which was treated for rheumatism for a year, and terminated fatally by rupture into the subpleural tissue. The condition found at autopsy was somewhat strange. Bleeding took place into the subpleural tissue and from there through the diaphragmatic apertures into the abdominal cavity.

While through the researches of Morgagni, Scarpa, and others, the morbid anatomy of aneurism and its relation to other diseases have been fairly well explored, the diagnosis of aneurism still remains, under certain conditions, a matter of utmost difficulty; and in many cases of latent aneurism, especially of the descending thoracic aorta, it remains questionable up to the last moment. This fact is well borne out by a case which recently came under observation at the German Hospital, in the service of Dr. J. Adler.

Mr. P——, a salesman, forty-seven years old, was admitted to the German Hospital, April 17, 1898. The family history of the patient furnished no data of any importance. As a child he had measles. Sixteen years ago he acquired syphilis and suffered for some time from a specific pharyngitis. He always had been a heavy smoker and greatly addicted to alcoholic stimulants. His health was fairly good up to three months ago. At that time he complained of being easily tired and of some shortness of breath; he lost flesh gradually, on account of which he had to give up his work eight days before he entered the hospital. Two days before admission he had a severe chill and intense pain of indefinite location in his left chest. His formerly slight dyspnœa increased rapidly and he began to cough, raising some sputum, catarrhal in character. Appetite fair, bowels irregular, sleep disturbed, perspiration profuse.

The patient is rather emaciated, middle-sized man, very dyspnœic and cyanotic. The superficial veins of the face and upper extremities are dilated. The expression is anxious; the pupils are equally dilated. No œdema, no skin eruption, no luetic stigmata. Hacking cough; scarcely any expectoration. Pulse 116, full, strong, and regular, of moderate tension, equal on both sides in time and character. Radial artery neither tortuous nor atheromatous. Respiration, 30; temperature, 102° F.

Lungs. The respiratory movements on the left side are diminished, the intercostal spaces are wide and slightly bulging on inspiration. The circumference of the left chest exceeds that of the right by two centimetres. Vocal fremitus on the left side is wholly absent. Percussion in front and behind over the left lung shows absolute flatness over the right lung with hyperresonance. Over the left apex there are a few moist râles. At the level of the sixth rib, in the scapulary line, distant bronchial breathing, moist râles, and bronchophony are heard. Over the whole right lung the breathing is harsh and loud.

Heart. The right border is just inside the right mammillary line; the left border cannot be mapped out, as the heart dulness merges into lung flatness. The upper border reaches the level of the third rib, and the heart pulsation is perceptible just to the right of the sternum at the level of the right sixth costal cartilage. The mitral sounds are heard most distinctly at the right border of the sternum near its junction with the ensiform cartilage. In this region an indistinct murmur is heard, the character of which cannot be defined on account of the labored breathing. Over the aortic and pulmonary regions no murmurs are present. The second pulmonary sound is accentuated, the heart action strong and rhythmical and somewhat labored. Liver dulness in the mammillary line commences at the level of the sixth rib and reaches a line three fingers' breadth below the arch of the ribs. The stomach is dilated. The

spleen is not enlarged. The bladder reaches three fingers' breadth above the symphysis pubis.

As all the signs pointed to a large effusion into the left pleural cavity, a puncture was immediately made in the seventh intercostal space in the scapular line. After a few drachms of thick bloody liquid had been evacuated, the cannula became clogged and had to be withdrawn. A second puncture in the eighth intercostal space in the posterior axillary line furnished five hundred grams of bloody liquid. During this operation the cannula again became clogged. There was no cough or any other reaction during the puncture. The patient felt somewhat relieved. His breathing became easier, but the line of dulness was nowhere changed. Percussion over the apex seemed to give a rather higher pitch. He passed a fairly comfortable night and felt comparatively well during the following day. His pulse at 5 P.M. that day was 100; temperature, 101.8° F.; respiration, 30. At 8 P.M. an enema was given, after which the pulse rose to 120; respiration, 32. At 8:35 P.M. a chill set in, lasting ten minutes, accompanied by profuse perspiration. The face became pale and pinched, the pulse intermittent and weak. Camphor oil, ♏ xx., was given hypodermatically; but notwithstanding energetic stimulation the pulse did not recover. At 9 P.M. the pulse was no longer to be felt, and exitus lethalis occurred at 9:15 P.M.

The clinical aspect of the case led to the consideration of three possible conditions, viz.: tuberculous pleurisy, malignant neoplasm of the lung or pleura, rupture of an aneurism into the left pleural cavity. The first was ruled out by the character of the effusion, absence of tubercle bacilli in the sputum and effusion, and absence of other symptoms of tuberculosis. In favor of the second condition, at least to some extent, were the history of a gradual decline in health and the emaciation during last three months, and the peculiar cachectic look of the patient. In spite of these facts the diagnosis of malignant tumor was not accepted: first, on account of the microscopical examination of the fluid, which contained only red and white corpuscles without any other cellular elements; secondly, on account of the absence of bloody expectoration and the rapidity with which such a large effusion took place; lastly, because, with a malignant neoplasm, one naturally would expect more or less constant pain or definite pressure symptoms, both of which were absent. All these points being considered, the only rational diagnosis left was that of an aneurism of the descending thoracic aorta. This probable diagnosis was sustained by the subsequent development and the modus of the fatal determination.

Autopsy, made twelve hours after death, revealed the following conditions, as recorded in the autopsy journal of the German Hospital, April 20, 1898:

"Medium-sized male corpse; poorly nourished; dependent portions of body slightly discolored. Rigor mortis marked; no œdema; no defect of integument. Omentum majus poor in fat, dipping irregularly among and between the small intestines. No ascites. Colon transversum and descendens contracted. Stomach enormously distended and displaced downward, its lesser curvature at the level with the eighth rib. Vessels injected; areas of small capillary hemorrhages. Large curvature just below the umbilicus. Stomach contains small amount of remnants of food. Mucous membrane covered with greenish discolored, tough mucus. Liver in the mammillary line commences at the level of sixth rib and reaches a line three fingers' breadth below arch of ribs; surface rough and pale, edges sharp; on section nutmeg appearance. Spleen small and soft. Bladder distended; reaches half way up to the umbilicus and contains clear urine. Diaphragm of left side bulges far into the abdominal cavity. On cutting of the costal cartilages on the left side a gush of blood welled forth. Adhesions between pericardium and sternum, and a comparatively large amount of fat in the anterior mediastinum. The pericardium, exposed to its full extent, contains a normal amount of fluid.

Left border of heart in middle of sternum; right border just beyond right mammillary line; apex behind sternum at junction of sixth costal cartilage with sternum. Upper border at third rib. Sinus Valsalvæ silghtly dilated. Both ventricles hypertrophied. Right abo t one-sixth inch, left one inch thick; empty and strongly contracted. Valves intact, except slight thickenings on free border of mitral valve. Parts of ascending aorta and arcus aortæ extensively atheromatous. Right pleural cavity empty; strong adhesions over upper right lobe. Right lung, except for compensatory surface emphysema, normal. Left pleural cavity contains about one-half gallon of blood, clotted in the lower third and liquid in the upper two-thirds. Left lung completely compressed against spine, measuring five and one-half inches from above downward and two and one-half inches antero-posteriorly.

"All the thoracic viscera were now removed *in toto* by dissection of their attachments from the spine down to the diaphragm. The thoracic aorta was then slit open at its posterior aspect, and the following conditions were found: Below the level of the left bronchus, about opposite the fifth dorsal vertebra, is an opening into its anterior wall, a little to the left, of the size of a twenty-five-cent piece, leading into an aneurismal sac of about the size of a hen's egg. The neck of the same consists apparently of all three vascular coats. The remainder, lined by old coagula, is closely attached to left pleura and lung, to pericardium anteriorly, and to œsophagus to right and in front. This primary sac opens by a large slit-like aperture, now distended by old coagula, into the posterior mediastinum. Pericardium in front, lamina mediastinalis dextra to right, and lamina mediastinalis sinistra to left, forming as it were a secondary sac, entirely filled up with solid clots.

"From here the blood gained entrance into the left pleural cavity by an opening in its lower part, which could not be located with any exactness at the autopsy."

A close study of the specimen, together with the analysis of the clinical features of the case, shows that we had to deal with an aneurisma spurium of the descending thoracic aorta. We found atheromatous degenerations throughout the whole course of the thoracic and abdominal aorta, and on microscopical examination of the kidneys syphilitic obliterating endarteritis of the medium-sized arteries. It would appear that the first step in the formation of the aneurism was not a gradual dilatation of the coats of the vessel, but rather a complete and sharply defined perforation of the vascular wall at a place where total atheromtaous and fatty degeneration of the coats paved the way. While this process was going on, adhesions, no doubt, were already in process of formation, and led to the matting together of the adventitia with the pleura and lung. When, therefore, perforation took place, aided undoubtedly by the action of the hypertrophied heart and the effects of severe physical labor and abuse of alcoholic stimulants, the escaping blood was retained in the preformed adhesions, which took upon themselves the office of an aneurismal sac. The same factors still at work led later on to the rupture of this primary sac at some *locus minoris resistentiæ*, allowing the blood to fill the posterior mediastinum. That accident may have taken place at any time during the last three months. Dur-

ing all that time life was in jeopardy, clotting of blood and formation of new adhesions counteracting the dangerous tendency. At the time of the first chill bleeding into the open pleural cavity may have started, leading to an extensive hæmothorax, compression of the lung, and acute anæmia. A slight exertion was now sufficient to widen the tear and empty the heart chambers so completely as to lead of necessity to a fatal termination.

The difficulties of arriving at a positive diagnosis before rupture are obvious. All the cardinal symptoms of aneurism were absent. Pain was not a prominent feature in the case, up to the time of rupture, and then was indefinitely located. The location of the aneurism did not give the advantage of applying the resources of physical diagnosis. The comparatively small-sized tumor could encroach only upon the œsophagus, but dysphagia was not complained of, although in the specimen beginning compression of the lumen of the œsophagus is very evident. The positive symptoms, as observed at the time of admission or recorded in the history, pointed rather toward a new growth. Even the urgent symptoms after rupture gave positive proof only of a large effusion into the left pleural cavity and led at first not even to the assumption of internal hemorrhage, as pleurisy with a rapid effusion was not improbable. Only puncture of the pleural cavity, which furnished pure blood, led to a correct diagnosis. The abnormal position of the heart was probably influenced by the aneurism pushing from behind, but the large pleuritic exudate or a hæmothorax would account for it just as well. It is difficult to say how long the condition existed; it gave symptoms, according to our records, over a period of not more than three months. As to etiology, the modern view, that lues and alcoholism are the conditions *par excellence* leading to endarteritis and aneurism, is sustained.

THE NEURASTHENIC SYMPTOMS OF GASTRO-INTESTINAL DISEASE.[1]

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In the course of my professional work certain facts occasionally present themselves to me with unusual force. One of these has recently been the remarkably large proportion of patients who have manifested, more or less conspicuously, the so-called neurasthenic group of symptoms. Possibly this should not be a matter for surprise when we consider the close and intricate relationship existing between the nervous system and every organ and tissue of the body. In fact, the more closely this relationship is scrutinized, the less will be the surprise at the widespread distribution of this group of symptoms. Nevertheless, the fact is one of far-reaching importance, not only because of the large number of cases in which it becomes a living issue, but because of the danger of resting the diagnosis with neurasthenia without going beyond this to ultimate causes, which may be either primary or contributory in character, but which in either event will demand full recognition in the highest interest of the patient. In saying that these cases present the neurasthenic group of symptoms I do not wish to be understood to assert that they are all cases of primary neurasthenia. The well-recognized syndrome known as neurasthenia may be briefly defined as a chronic fatigue neurosis, in which the nervous system is in a condition of irritable weakness. The symptoms are such as should be expected from such a pathology, the exact clinical picture, sufficiently protean in its details, depending upon a large variety of circumstances, among which may be mentioned the personality and occupation of the patient, and the part of the nervous system which suffers the most. The sensory symptoms are usually dominant, and they find their clearest explanation when analyzed from this point of view. Here, as elsewhere, pathology is only perverted physiology; and in the fatigue sensations of health we find in milder and evanescent forms the counterpart of those presented in neurasthenia. "I am so tired that I ache," is a familiar experience and a familiar expression. And if the man who has made a consummate fool of himself by making a so-called century bicycle run—one hundred miles in one day—would give us a critical analysis of his subjective symptoms, and we should then imagine that they are permanent, or reproduced by trifling causes, as I have observed that they sometimes are, we should have a clinical picture of one form of neurasthenia. The multiform pains of neurasthenia are the intensified phenomena of a chronic condition, not perhaps absolutely parallel, but similar in a high degree to that of acute fatigue. Of course this only carries us a step farther back in our search for truth, and still leaves unanswered the question, "To what are all fatigue sensations due?"

The answer is not simple. They are undoubtedly complex in their origin. They are partly toxæmic, the severe and prolonged functional activity of the nervo-muscular apparatus resulting in an increased formation of leucomains, and the pouring into the blood of the products of retrogressive metabolism, especially the salts of potassium. Elimination is unequal to the task, and toxæmic pains and other phenomena follow the temporary accumulation. Then there are the local circulatory changes, which are of supreme importance. In both acute and chronic fatigue these play an important rôle in the production of sensory disturbances. Lastly, but really most important, come the histochemical changes of nerve and muscle cells. This is largely an unwritten chapter; but enough is known to justify a positive assumption of its importance. We may confidently assert that functional activity of a nerve cell produces transient structural changes within that cell. These changes constitute the real morbid anatomy of neurasthenia, so far as the primary condition is concerned.

Charcot divides the symptoms of neurasthenia into two groups, including in the first group those which are primary or essential, and in the second those which are secondary or incidental. In the former he places neurasthenic headache, sleep disturbances, rachialgia, and spinal hyperæsthesia, muscular weakness, disturbances of digestion, sexual and mental disturbances; and in the latter vertigo, special sense, respiratory, circulatory, and secretory disturbances, general sensory disturbance, etc.

Dercum prefers to erect two distinct groups of neurasthenia, one of which he calls neurasthenia essentialis, and the other neurasthenia symptomatica—terms which are self-explanatory. This distinction is clearly a valid one from an etiologic point of view, whether there is a corresponding pathologic distinction or not.

The cases that I have in mind in presenting this subject would be included in the second group. In many of these cases of neurasthenia symptomatica the neurasthenic symptoms are so predominant as to mask more or less completely the primary gastro-intestinal disease. I have had many such cases under observation. As illustrative of this group I will briefly report the following case:

Mrs. B——, aged twenty-five years, consulted me May 24, 1898, complaining of extreme nervousness

[1] Read before the Northern Tri-State Medical Society, at Elkhart, Ind., July 19, 1898.

and general debility, "rheumatic" pains in the shoulders of several weeks' duration. There were also severe general pains in the muscles throughout the limbs, considerable drowsiness, and headache on slight exertion or excitement; the appetite was fair and there was no distress in either stomach or bowels; there had been considerable palpitation of the heart at times. The patient had had what she called "nervous prostration" four years ago, lasting about six months, the symptoms of which were similar to those she complained of now. Urinalysis was negative throughout. Upon closely questioning the patient I found that she had occasional eructations of gas from the stomach, and thinking that the digestion might be at fault I persuaded her to let me introduce the stomach tube.

The first examination consisted in introducing the tube in the morning on a fasting stomach, no fluid or food having been taken since the previous evening. About ten cubic centimetres of a faintly opalescent fluid was obtained, of acid reaction, the acidity being equal to about fifteen degrees. Examination showed that it contained no free HCl, and no acetic or butyric acid. The acidity was due principally to lactic acid. Microscopically the fluid was found to be loaded with lymphoid and epithelial cells and bacteria.

The Ewald test breakfast was administered, showing briefly total acidity of fifty degrees, with twenty degrees of free HCl, equal to about 0.7 per cent., very faint biuret reaction, and very imperfect digestion of starch.

A diagnosis of chronic gastritis and symptomatic neurasthenia was made, and suitable treatment was instituted, with the result of relieving the patient of all symptoms in about four weeks. The patient is now apparently well, free from all neurasthenic symptoms, and able to do her own housework with ease. This case represents a type of gastric disease, in which, for some reason, the local sensory symptoms of the stomach disorder are almost entirely wanting, and the local disease is more or less completely masked by the secondary toxæmic and neurasthenic phenomena for which the patient seeks advice, and which cannot be successfully treated without removing the primary causal condition. More commonly, however, the gastric symptoms are not so latent as in this case. Intestinal symptoms are much more likely to be overlooked. For instance, a gentleman consulted me a fortnight or more ago, complaining of extreme nervousness, insomnia, marked general debility, persistent headache, and general pains. Interrogation of all the principal organs failed to reveal structural changes. The urinalysis was negative with one most important exception, viz., marked indicanuria. I suggested intestinal disease, but he protested against its possibility, declaring that his bowels moved with clock-like regularity, that the movements were normally soft, free, and of natural color, and that he was absolutely free from intestinal or abdominal symptoms. I insisted that in my experience indicanuria practically always meant intestinal disease, and he yielded to an examination. An intense colonic infection was found, mostly bacterial, in which a chromogenic bacterium, giving some of the colon contents the macroscopic appearance of blood, predominated. Daily treatment was at once instituted; the symptoms began to yield in two days, and the patient is now well on his way toward recovery.

I wish here to say a word about the diagnosis of intestinal disease. Reliable results are impossible by the slipshod methods commonly in vogue. I have had placed in one of my office rooms a closet, of the variety which retains the excrements in a shallow porcelain reservoir until defecation is completed. An adjustable electric light is so arranged that it can be placed within the basin, and the stool can be carefully inspected by good illumination. Much information is obtained in this manner. Certain portions are then selected and placed in a suitable container, labelled, and removed at once to the laboratory. I formerly used beakers, but now use jelly glasses with tin covers. They are cheaper, less fragile, and can be more lightly covered. The matter is subjected to careful microscopical study and this seldom fails to place a case in a clearer light. But this is not all. The patient is taken into a room adjoining the closet, placed upon a table on an inclined plane, a colon tube is introduced, and a quart or more of water is passed well up into the colon. The water is then allowed to flow out into a glass jar, and in many cases numerous membranous masses as large as one's finger will be found, even when none could be seen by the naked eye in the freshly voided fæces. Perhaps only a slight cloudiness of the water will be seen. In this event the water is placed, either before or after decantation, in a centrifuge, and microscopic evidence of disease is frequently found in this way. I am constrained to make this digression because of my belief that, while stomach examinations are more completely carried out, intestinal examinations are quite generally neglected, although when thoroughly and scientifically conducted they furnish the key to many otherwise inexplicable cases.

The neurasthenic symptoms commonly present in these cases will be found to vary greatly. I have no data at hand except those of personal observation; these I will attempt to summarize in a very general way, without any pretension to detailed analysis or completeness. General fatigue sensations are quite common in my experience. These are sometimes very mild in character, limited perchance to a more or less marked feeling of lassitude, with an inordinate sense of fatigue on slight exertion. In severer cases the various grades of neurasthenic pains are manifested sometimes in very aggravated forms. In some cases these pains overshadow everything else and rack the patient's nervous system day and night, with disastrous results upon both the nerves and the general nutrition. I have such a case under observation and treatment at the present time. Such pains are, perhaps, mostly due to a pure toxæmia; but the patients are usually neurasthenic, or, if not, rapidly become so.

Next to these may be mentioned the head symptoms of various kinds. These may consist of pain or pressure sensations of diverse forms, and are probably due to circulatory changes in the meninges or elsewhere. Incapacity for sustained mental effort may be manifested in varying degrees. This, like the motor weakness, may be the result of vasomotor disturbances of the cerebral cortex, histochemical changes of the cortical cells, or the direct action of toxins.

In one of my severe cases of chronic gastritis a typical migraine of years' duration, which had kept the patient in bed from one-third to one-half of her time, was completely cured in two weeks of stomach treatment. Both the patient and myself supposed that the migraine antedated the gastritis, and our surprise and gratification at its complete disappearance were mutual. More than two years have elapsed without any recurrence of either migraine or gastritis. The headaches were clearly the result of gastric auto-intoxication, and they were cured simply by stomach disinfection long before restoration of normal secretion and circulation. This case was most instructive, and has paved the way by a logical extension of its teaching to other organs and tissues—and notably through an examination of the fæces, urine, and blood

—to the solution of many another complex clinical problem.

The general sensory disturbances have also been exceedingly frequent in my experience. Paræsthesia and pruritus are the forms of sensory disturbance most commonly encountered. Formication, "pins-and-needles" sensations, with sensations of heat and cold, are, and I think in the order of enumeration, the predominant paræsthesiæ. In some cases these paræsthesiæ become of serious import. They generally occur in distinct episodes, lasting from a few days to a few weeks. Exhausting insomnia is among their effects, as the exacerbations are mostly nocturnal. One of my patients walked the streets from two to four o'clock every night for nearly a week.

Vertigo is also very troublesome in some cases. It sometimes occurs in paroxysms during the height of digestion, or when the stomach is empty. In others, it occurs whenever the patient shifts from the recumbent to the erect posture, or *vice versa*. One patient, on account of the vertigo, consumed from three to five minutes while lying down on the table in my office for colonic flushings required for a complicating colitis and severe colonic infection, and about the same length of time while rising.

Muscular weakness is exceedingly frequent as a neurasthenic symptom, independently of the weakness expressive of the general debility from inanition present in aggravated cases of gastro-intestinal disease.

And, finally, it may be stated as a general proposition that the mental state of these patients tends toward depression. Melancholia finds here a favoring condition, if not an indigenous soil.

In thus briefly pointing out the principal neurasthenic symptoms of gastro-intestinal disease I have been actuated by the belief that if the medical profession could be induced more generally to study this large class of cases in the light of comparatively recent discoveries, a real service would be rendered. The vast army of chronic invalids is growing *pari passu* with the increasing tension of modern life. In the delirious struggle of competition nervous bankruptcy is constantly happening, simply because more nerve force is expended than the dynamic powers of the organism can possibly supply. The digestive apparatus suffers like all other parts of the organism from lowered nerve function; and thus it happens that in a large contingent of the dyspeptic fraternity the gastro-enteric disease is primarily neurasthenic in character, but it rapidly becomes something vastly more than this. Is the reason far to seek? Are not secretion and motility—the principal factors in primary digestion—absolutely dependent upon nerve force? The ubiquitous and vigilant germ is ever ready to seize upon the remnants of retarded digestion, producing gases and toxins, which by chemical and mechanical irritation still further vitiate and impair secretion and motility, thus ever working in a vicious circle. The more we contemplate these questions the broader and deeper becomes their practical bearing, and the more intensely interesting, from every point of view, becomes their solution. They are foemen worthy of anybody's steel, and give an added interest and a wider beneficence to the drudgery of professional life.

107 West Main Street.

Dyspnœa.—For dyspnœa resulting from any congested condition of the lungs, try steam of ammonia with eucalyptus. Place an ounce of muriate of ammonium and two drachms of oil of eucalyptus in a quart of water, and place over an alcohol or other stove, and arrange it so that the steam will be carried to the patient.—*Toledo Medical and Surgical Reporter.*

SOME ADVANTAGEOUS POINTS IN OPERATIVE TECHNIQUE OF PELVIC SURGERY.[1]

By JENNINGS P. CRAWFORD, M.D.,

Davenport, Iowa.

In pelvic surgery we are still confronted with difficult problems, such as overcoming infection, controlling hemorrhage, lessening shock, preventing stitch abscess and subsequent hernia from imperfect union. It is my desire in this paper to present some methods which have decided advantages over others in dealing with these problems, and to describe some steps which perhaps have not been heretofore employed in connection with this division of surgery.

The first point to be discussed is controlling the hemorrhage in the removal of growths about the broad ligaments, such as hæmatomas, tubal gestations, neoplasms, and pyosalpinx with inflammatory exudates.

Before proceeding further let us notice the anatomy of the broad ligament and its vessels.

The broad ligaments are the lateral supports of the uterus. They pass from the sides of the uterus to the lateral walls of the pelvis, making a septum across the pelvis, dividing the cavity into two portions. This ligament is formed by the reflection of the anterior abdominal peritoneum downward and backward, reaching across the pelvis from side to side in front of the uterus, which constitutes the anterior layer of the broad ligament, and of the posterior abdominal peritoneum upward and backward behind the uterus, forming the posterior layer, the two joining each other at the free border of the ligaments.

In front of these ligaments or septum is the bladder; between them, centrally located, is the uterus; and behind is the rectum. The Fallopian tubes extend from the superior angles of the uterus to either side from three to four inches along the free border of the broad ligaments within its covering or peritoneum well toward the margin of the pelvis, the fimbriated or trumpet end hanging free. Also from the superior angles of the uterus the round ligaments pass obliquely outward and upward, lifting the anterior layer of the broad ligament, through the abdominal ring, and serve as anterior supports to the fundus.

The ovaries are located behind the broad ligaments near the free border, about midway to the margin of the pelvis. Each ovary is likewise covered with an investment of peritoneum, except a portion of the anterior surface which unites with the posterior wall of the broad ligament, the larger part of the organ hanging free in the abdomen.

Between the laminæ or layers of the broad ligament, which we found to be formed by the anterior and posterior abdominal peritoneum reflected backward, are located the ovarian arteries and associate veins, and the uterine arteries and accompanying veins.

The uterine arteries pass downward behind the posterior peritoneum from the anterior trunk of the internal iliac, at an acute angle with the womb and just over the ureter; coming up between the layers of the broad ligament about on a level with the cervix, and passing to the side of the uterus, they ascend in a tortuous course along this organ, distributing branches to the womb, and at about the middle of the fundus turning latterally at right angles, anastomosing with the ovarian arteries midway to the ovaries.

The spermatic or ovarian arteries arise directly from the aorta high up in the abdomen on a level with the kidneys near the renal arteries, and pass downward and obliquely outward behind the posterior peritoneum on the surface of the psoas muscle to the margin of the pelvis, where they enter the laminæ of the broad ligament. From this point they pass near the free border of the broad ligament toward the ovaries. These ova-

[1] Read before the Iowa State Medical Society, May 19, 1898.

rian arteries, as they extend near the ovaries, distribute branches forming a plexus of vessels supplying the ovaries, round ligament, and anastomose with the uterine supply, as just stated. The veins follow the course of the arteries as a rule, there being usually two veins to each artery, and are easily included in the same ligature.

It is highly important to keep in mind not only these different sources of blood supply, but to cultivate more accurate localization of vessels, so as to isolate and ligate them quickly without including half of the broad ligament, which is so often done to secure a little vessel not longer than a crow's quill and having quite constant anatomical relations.

If we wish to do expert surgery we must employ expert methods and become expert in their use; not only become familiar with the details of pelvic anatomy and its deviations, but more skilful and dexterous in the use of instruments, and raise our workmanship to the plane of art. When a hysterectomy can be made in seven or eight minutes, there is no virtue in keeping a patient on the table two hours, subject to the exhaustion and shock incident to prolonged etherization.

The increased vascularity accompanying all these growths about the broad ligament and its associate appendages is dependent upon these two sources of blood supply—the uterine by way of the superior angle of the womb outward, and the ovarian arteries from the margin of the pelvis along the free border of the broad ligament inward; and in controlling hemorrhage a knowledge of these facts is the key to the situation.

By observation the usual procedure in the removal of hæmatomas, tubal gestations, and exudates about the tube is to dig them out and stop the mouths of bleeding vessels as they are torn open.

The strategic point in the technique of these operations to my mind is the preliminary step of shutting off the blood supply before beginning the separation of the growth. This step I have not seen described for broad-ligament operations. It is accomplished by first going out near the margin of the pelvis and ligating the ovarian arteries an inch or two beyond the fimbriated extremity of the tube. A medium-sized curved needle, armed with a silk ligature, held with a strong holder, is passed through the broad ligament a good one-half inch within the free border and brought around the same and securely tied. This marginal tie cuts off the ovarian arterial supply completely before it branches within the laminæ, and the ligature is so thoroughly anchored outside of the site of the operation that it is in no danger of being dragged off by further manipulation.

The other part of this preliminary step is tying off the uterine feeders at the superior angle of the uterus. A curved needle, in like manner as before, is passed through the broad ligament about an inch below the margin, a little out from the fundus, just above the attachment of the round ligament, so as to preserve it, yet including the utero-ovarian vessels; it is then made to sweep around the cornu, and the ligature is anchored in the free border, so as to prevent its slipping. This ligature ties off the Fallopian tube and vessels, ovarian ligament, as well as utero-ovarian anastomoses within the laminæ near the fundus. The whole broad-ligament country is now high and dry, and the separation and enucleation of these juicy growths can be rapidly accomplished without hemorrhage other than slight capillary oozing.

Let me say here that I recently noticed in the removal of a tubal gestation of five months' development that, following the separation of the large placentæ, there was practically no hemorrhage, while usually the hemorrhage is frightful in such cases.

This procedure possesses special advantages in the removal of pyosalpinx or hæmatoma with thickened walls from extensive inflammatory exudate, so often found where the tissue is so soft that a hæmostat will pinch it off and a ligature cut through it or pull out with every advance step, tending greatly to prolong the operation and frequently to excessive loss of blood—both of which are elements contributing to shock and should be scrupulously guarded against.

In cases in which it is necessary to make a hysterectomy in connection with these broad-ligament exudates, instead of ligation at the superior angle of the womb, the uterine arteries are tied off separately at the side of the neck a little below the union with the fundus and the round ligament, in its course upward. This permits the removal of the fundus at its union with the neck, along with the diseased appendages, with the same freedom from hemorrhage.

This operation is entirely different from the method in common use in hysterectomy, in which the ovary is lifted up and a ligature passed into the broad ligament, including the ovarian artery and round ligament midway to the pelvic wall. In this operation the ovarian artery is ligated out at the margin of the pelvis before any branches are given off. The method is especially applicable in operations with extensive growths about the broad ligament, either with or without hysterectomy.

The next point is the closure of the abdominal wound. Notwithstanding the great variety of suture materials and the many different methods of stitching, the dangers of stitch abscess from infection, resulting in imperfect union and subsequent hernia, have by no means been entirely eliminated. The most common practice for the last few years has been the buried continuous suturing of the three layers separately. Of buried silk it may be said that when the wound heals kindly, as it usually does, it serves admirably; but in the presence of suppuration it is annoying, to say the least.

Catgut, on account of being so quickly absorbed, does not possess the elements of strength when put to the test by delayed union from stitch abscess, aggravated vomiting, or coughing, which most other suture materials do.

To my mind the correct principle in closing the abdominal wound is by the use of a suture that has great strength, that approximates the surfaces, and relieves the tension from the healing margin, and one that can be entirely removed at will.

The silkworm gut, used as a deep interrupted through-and-through suture of all the layers of the abdominal wall about three-fourths of an inch apart, is undoubtedly the best calculated to meet these requirements. This form of suture is at present in high favor with many of the advanced gynæcologists.

Some one is already saying, no doubt, that this is an old stitch that has been used for years, but I think that a moment's explanation will disabuse any one of that wrong impression. The old stitch passes through all the layers at an equal distance from the margin of the wound, without providing for the coaptation of the fascial layers, which must be relied upon for the strength of the union; consequently, the tension being on the fascial layer, its margins are separated and a gap is the result. The deep interrupted stitch is used now; the needle is passed through the skin and fatty layer a half-inch from the margin, and while an assistant pulls the fascial layer with a hæmostat in toward the centre, the needle is passed on through this layer fully one and one-fourth inches from its margin, continuing through the peritoneum at one-half inch from the margin, the same as the skin layer, and then coming up through the opposite side in like manner. When this ligature is tightened in lifting up the abdominal walls the peritoneal layer is brought together; also skin and the middle layers cannot help being in forced

apposition on account of the superabundance of tissue provided for in drawing the fasciæ out while inserting the sutures.

This stitch, while it so thoroughly provides for the apposition of the middle layers, does not assure to a certainty coaptation of corresponding tissue, as the fascial layer may slide past its opposite fellow and project against adipose instead of fascia. To overcome this tendency, I have made a modification of this stitch in my work by introducing a silkworm-gut, longitudinal, running stitch in the margins of the fascial layers before the interrupted abdominal stitches are tied and while the wound is still gaping. This stitch is taken like a basting-stitch, in and out, across from one margin to the other. It is tightened as the interrupted sutures bring the walls together by drawing on both ends as they are left protruding through the integument at each angle of the wound, something like the subcuticular stitch, only in the fasciæ. This nicely adjusts the margins of the fasciæ in perfect approximation. No tension whatever is put upon this coaptation stitch after the row of interrupted sutures is tied. It is best, however, for the ends to be shotted where they emerge through the integument, so that they may not retract, especially in a thick, fatty abdomen. This buried suture is to be removed when the others are, and this can be easily done by drawing it forward in the same direction it was inserted, providing the needle was directed constantly forward and no back stitch taken, in which event it will lock and have to remain, the same as any other buried suture, though with a little care in its introduction it is not necessary for this to occur.

To sum up the merits of this suture, it can be said that, being deep and wide, it masses together a large amount of tissue and secures the heaviest possible scar line; that, on account of the stitches being set far in from the edge, it removes all tension from the margins of the wound; that, as modified, it adjusts the fascial borders to perfect coaptation; that it can be removed when its purpose is served; and finally, being of silkworm gut, it is the least likely of all material to introduce infection, and in case of stitch abscess, being interrupted, one stitch can be removed to secure drainage without destroying the whole suture line.

But neither with this suture nor any other can we eliminate all danger of stitch abscess, for it has been proved that cultures may be made from almost all these wounds from hand infection, although usually not to the extent of causing stitch abscess or impaired union. In over one hundred abdominal sections made in our Davenport hospitals by our surgical staff in the last year, under the most careful supervision, we have had, taking pus cases and others just as they come, stitch abscess in at least ten per cent. of our cases—an experience not different from that of others.

While the name stitch abscess stamps a curse upon the suture, the fact is that the layer of fat, from one-half to two inches deep, with its low vitality, subjected to the dangers of hand infection by an hour or two of constant abuse and handling, which still further lowers its resistance to bacterial attack, is largely responsible for this unfortunate and apparently unavoidable condition in a percentage of cases. Possibly there may be something in the explanation that the air follicles are deep down in the true skin, with the sebaceous glands pouring out secretion alongside through the tissues to the surface, and also deep in the same stratum the coiled loops of the sweat glands, and that all these tubules contain bacteria. It is certainly impossible, with any of our methods of applying antiseptics, to reach germs hidden in the meshes of these buried passages. In placing a suture we pass through this network of excretory ducts with their excrementitious matter. I know of no suture material that as a foreign body is calculated to excite less noxious influence under these conditions or contribute less to bacterial activity than silkworm gut.

This suture material is open to the same danger, however, as any other in being tied too tightly, causing death of tissue by mechanical pressure, which furnishes favorable culture ground for the pus germ—no doubt a very common factor in the production of stitch abscess.

Progress of Medical Science.

Icterus of the Newborn. — Two main classes of icterus are described by Drs. Lesage and Demelin (*Revue de Médecine*, January, 1898): 1, that derived from changes of the blood (hæmatogenous icterus); 2, infectious icterus, due to germs finding their way into the bile passages. The first group (hæmatogenous icterus) begins spontaneously in the first days of life, is not malignant, and is to be diagnosed when no bile pigment is found in the blood. The yellow color of the skin is not caused, as in the second class, by a particularly marked cutaneous congestion; both writers are of the opinion that the coloration is probably due to the red-brown pigment isolated by Winter. This latter pigment is derived from the hæmoglobin, which is set free in large quantities, the liver cells not being sufficiently active to change this hæmoglobin into bile pigment. This simple icterus—which, according to the authors, is a proof that the system is trying to get rid of its plethora—is really not a disease, is physiological, and needs no therapy. Infectious icterus is either of intestinal derivation, in that the infectious agent (generally bacillus communis coli) finds its way from the intestinal canal to the bile passages and liver; or is of puerperal nature, in that the germs find their way directly into the liver from the stump of the umbilical cord. In the former there is an especial form of diarrhœa (pale green, alkaline), with mild fever; the disease may occur isolated and in epidemics. In the latter form (*i.e.*, from an infected stump) the severer cases are complicated by hæmaturia and sometimes by hemorrhages from the other internal organs. Puerperal icterus is rare at present; it formerly occurred in connection with septic infection of the stump, with symptoms of septicæmia, high fever (39°–40° C.). Another form of icterus is that due to malformation of the bile passages. A few hours after birth icterus of a very intense form occurs, the fæces are colorless and have a fetid odor, the abdomen is distended, the pulse rapid. The child becomes somnolent, and dies during the first week.

Tuberculosis of the Pharynx in Children. — Dr. Plicque (*Annales des Maladies de l'Oreille*, etc., No. 3, 1898) says that this disease is much rarer in children than in adults. The disease may be secondary (infection from the respiratory apparatus) or primary; its favorite sites are the uvula and tonsils, occasionally the epiglottis and the nasopharynx. It is to be diagnosticated from diphtheria and lupus. Pharyngeal tuberculosis often shows diphtheritic-like pseudo-membranes, which disappear rapidly when pencilled with lactic acid. The absence of Loeffler's bacillus, the eventual discovery of the tubercle bacillus; little or no fever; gray, translucent, millet-seed nodules, sometimes seen in cheesy degeneration: long duration, etc., would exclude diphtheria. In lupus the nodules are larger, the cervical adenitis is less, scars are found, and very often other portions are affected by lupus (face, nose). Dysphagia is sometimes so marked and painful that the patient must receive his nourishment by artificial means. All the cases thus far reported have ended fatally, very often after a comparatively short illness.

X-Rays in Military Surgery.—Professor Küttner, of Tübingen, who followed the last Greek war in connection with the German Red Cross Society, has made some interesting experiments with the Roentgen rays at the Constantinople Hospital. In his report just issued he says, that while the apparatus proved of service when applied with the screen it was rarely possible to take a satisfactory photograph, on account of the difficulty of bringing the patients into the proper position. The former method proved often the only way to ascertain the site of a projectile which had entered the body and remained there. This was applicable to all parts of the body except the stomach and head. A bullet in the brain, for instance, showed very indistinctly. (Last spring an arrangement of mirrors exhibited at a *soirée* of the Royal Institution, where a photograph of the brain showed in relief, enabled the operator not only to see the foreign body, but also to measure correctly the distance from the outer wall of the cranium). Professor Küttner says it is noteworthy that splinters of bullets and of bone which had penetrated into the soft parts of the body could not be distinguished from each other. Also, he says, it was proved that the opinion that deep-lying masses of pus could be located was erroneous. Injuries to the central nervous system, the spinal cord, and the peripheral nerves were solely ascertained by the aid of the Roentgen rays. It was impossible to do this before. Furthermore, it could be seen whether a bone was wholly or only partially severed—a matter of great importance as far as therapeutics is concerned. For shot wounds in the extremities he recommends that a photograph be taken. His conclusion is that the Roentgen rays are of great importance for medical aid in war, but only for fixed hospitals, such as reserve hospitals and those installed in fortresses, while for moving field hospitals their application is very limited.—*The Lancet.*

Arsenic as an Antidote to Thyroid Extract.—MM. Bedard and Mabille, of Lille (*Gazette Hebdomadaire*, May 29), have proved by experiments on dogs that arsenic is an antidote for the thyroid extract. It is known that authors say that large doses of the extract from the thyroid gland have caused serious disturbance in the action of the heart. These evidences of heart poisoning are easily obtained by feeding dogs on the thyroid gland. If, while the animals are using the thyroid, they are given arsenic at the same time, in the form of Fowler's solution, the glandular substance may be given freely without producing any cardiac disturbance. It seems, therefore, very desirable to give arsenic when treating patients with extract of the tyroid gland.—*The Lancet.*

The Treatment of Lupus by Injections of Calomel.—On July 7th, M. du Castel showed at a meeting of the Society of Dermatology two patients suffering from tuberculous lupus of the face, who had been treated during the past six months by injections of calomel after the method of Asselbergs. The good results of this treatment were very marked. M. Gaucher considered that, as a rule, cases of lupus cured by mercurial injections were errors of diagnosis. M. Brocq had seen in one case the mass of lupoid infiltration diminish under this treatment, but he did not know whether the result was permanent. In another case he had seen some amelioration, but afterward the lesions remained in stationary condition, and it became necessary to attack them with the cautery. He thought, too, that the patient was syphilitic. M. Fournier was of the opinion that an occasional case of wrong diagnosis might occur, but he considered that there was possible association between lupus and syphilis. Antisyphilitic treatment certainly brings about a considerable, if fleeting, improvement in cases of lingual epithelioma. Lupus in a syphilitic patient is probably seriously increased by the soil on which it grows, and this is probably the key to the results obtained by Asselbergs.—*The Lancet.*

Lactation Atrophy of the Uterus.—1. Modern researches tend to prove that postpuerperal involution consists chiefly in a retraction and contraction of the individual muscle fibres, whereby the whole uterus is reduced in size. 2. When involution goes to its full completion the uterus is reduced to a size smaller than that of the nonparous organ. 3. This condition of complete involution is known as postpuerperal hyperinvolution. It is principally seen in nursing women, and from this circumstance has received the cognomen lactation atrophy. 4. The so-called lactation atrophy is a normal and desirable condition. It is temporary in its duration, but very rarely under favorable circumstances may become permanent. 5. When the parturient is unable to perform the function of lactation it is the duty of the physician to endeavor to bring about hyperinvolution by other means at his disposal. An observance of this course will prevent many a woman from developing a host of gynæcologic affections which frequently result from imperfect involution.—VINEBERG, *American Journal of the Medical Sciences.*

Indications and Operative Treatment of Retrodeviations of the Uterus.—S. Pozzi divides retrodeviations into two general classes: the free and the adherent. Free retrodeviations he again subdivides into two headings: 1. Free, movable retrodeviations. They are relatively rare, and are caused by laxity of the ligaments; this retrodeviation is not constant, but is the generally occupied position of the uterus. 2. Free retrodeviations which can be made movable. This condition is found most frequently in multiparæ; the anatomical examination shows a large corpus uteri with a flexible cervix. In both of these classes of retrodeviation, the extraordinary movability of the uterus, and not its malposition, is of main importance. The uterus must be made more stable, which condition can be fulfilled only by putting the uterus in normal position. When the uterus is thus replaced, it must be fixed there, but not by means of vagino-fixation or ventro-fixation. If a metritis exists, curettage should be done; if the perineum is weak, an operation to strengthen it should be performed. As means of fixing the uterus *per se*, pessaries and abdominal binders are of importance and value. Pozzi places in a separate division the movable retrodeviations with diseases of the adnexa. Laparotomy, with eventual ignipuncture or resection of the ovaries, is here to be thought of. If both ovaries have been removed *in toto*, fixation of the uterus is not then necessary. If the adnexa of but one side have been removed, the stump can be sewed in the lower angle of the wound. If only ignipuncture or resection of the ovaries has been resorted to, then a ventro-fixation may be done, though it is by no means absolutely necessary. Fixed retrodeviations: In order to diagnose between this condition and movable retrodeviations, bimanual reduction in the knee-elbow position must be tried; if this does not succeed, the same attempt must be made under narcosis. The vagina is held open by a speculum. If the uterus is diseased, appropriate treatment must be instituted. If the adnexa are diseased, laparotomy and conservative treatment are necessary. Laparotomy is performed, not to tear the adhesions, but because of the diseased adnexa. When the uterus and adnexa are freed, the ovaries and tubes are to be examined; it is generally impossible in these cases to treat all adnexa conservatively. If at the same time the uterus is very much diseased, it should be removed with the tubes and ovaries.

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TROPICAL DISEASES.

A CELEBRATED medical man some time ago uttered the wail in Calcutta that although French, Germans, Russians, and Poles—to the list he might have added Italians—had done much in the investigations of the malarial parasite, Englishmen had done nothing. At the time when the remark was made, the complaint was perfectly true. Laveran gave us the germ. Roque and Lemoine proved the increased toxicity of the urine after the "accès" in intermittent fever. Roux and Chamberland suggested that after the "accès" the toxins secreted by Laveran's parasite conferred immunity for a certain period. Mosse was the first to notice the appearance of polyuric "aiguë non diabétique" so frequent after attacks of intermittent fever. In fact, the whole subject of malaria may be said to have belonged up to quite recent times to France.

The study of tropical diseases in this country and in Great Britain has been a neglected department of medical education. There are two sufficient reasons for this neglect in Great Britain, according to Dr. Patrick Manson, one of which is that men going in for a medical examination never think of spending any of their time over the study of diseases incidental to a hot climate, as they are well aware that they will not be asked questions bearing on the subject; and the reason that the examiners do not ask these questions is because they have not practised in tropical countries, and have had no practical knowledge of the diseases peculiar to them. In the tropics malaria is undoubtedly the most deadly disease met with, and yet the ignorance of the newly qualified medical man concerning it is stupendous. He knows nothing about the malaria germ and would not be able to recognize it if he saw it. Dr. Manson aptly sums up the situation in these words: "What would an examiner nowadays do with a student who could not recognize and demonstrate the tubercle bacillus? He would pluck him; and if I were an examiner and found that a student, intending to practise by-and-by in the tropics, could not recognize and demonstrate the malaria parasite, I would do the same." Of late years, however, both in America and in the British empire, the claims of tropical medicine have become more pressing in consequence of the investigations and discoveries made in tropical pathology. The successful result of Sanarelli's researches as to the origin of yellow fever; the investigations of Kitasato, Haffkine, and others with regard to the cause of the bubonic plague; the light recently thrown upon the secrets of malaria by many scientific workers, have given the much-needed fillip to a study of the diseases of hot climates; and the day seems to be not far distant when the systematic teaching of tropical medicine will be universal in the medical schools of America and Great Britain.

At the Edinburgh meeting of the British Medical Association a new departure was made; for the first time since that association was founded a section was set apart for the consideration and discussion of tropical diseases, and it is gratifying to have to record that the experiment proved a most unqualified success. The proceedings in this section evoked the greatest amount of interest, and it was the most largely attended of any of the sections. Many able papers were contributed, but decidedly the most important was that read by Dr. Manson, describing the researches of Surgeon-Major Ronald Ross, on the extra-corporeal life of the plasmodium malariæ and the result of his investigations with regard to the connection between the mosquito and malaria. The climax was reached when Dr. Manson announced to his auditors that he had just received a cablegram from Dr. Ross, reporting his discovery that a parasite-bearing mosquito is able to infect a healthy bird. There can be no doubt that this discovery is of the utmost value, and will probably in the near future lead to further developments. *The Lancet*, referring to the matter, says: "Thus the analogy between bird and human infection has only to be proved to establish that the mosquito is a carrier of malaria and an infecter of man. Much has yet to be done, however, before the full significance of the mosquito and malaria is worked out. Malaria, we know, multiplies without the intermediary of any vertebrata. Does it do so solely in mosquitoes? If so, we have yet to learn how it passes from mosquito to mosquito. Does it multiply in other media? If so, what are they? . . . The practical applications of the discovery are immeasurable, and the establishment of the fact, that as the bite of the snake or of the rabid dog inoculates the blood of the victims of these creatures, so the mosquito conveys malaria, would open up a new and hopeful phase as regards the prevention of disease in the tropics."

With regard to the influence of plague inoculation on other diseases, Haffkine endeavors to show not only the protective value of inoculation against the plague, but that it influences also favorably the resistance to certain other diseases. Whether this be so or not has yet to be proved, but at all events it is certain that plague appears to have an antagonism to malaria; and it is very suggestive that inoculation for plague should exert a favorable influence on the subject of malarial disease. Investigations are now being made into every branch of tropical diseases, and an increasing sense of their importance is obtaining daily. With the impetus thus given to their consideration, the outlook for the solution of the difficulties surrounding their origin and treatment should be hopeful.

DISPARAGEMENT OF THE REGULAR ARMY SURGEONS.

Among all the accusations of executive incompetency brought by the press of the country against the medical department of the army, we have seen but two attacks made upon the professional attainments of the members of the medical staff. These attacks appeared simultaneously: the first anonymously in a non-medical paper in this city; the second, over the signature of Dr. N. Senn, of Chicago, in the *Journal of the American Medical Association* of September 3d. In an article on "The Qualifications and Duties of the Military Surgeon," Dr. Senn says, basing his conclusions on an experience of five months in the camp and field, that the surgeons of the United States regular army, while men of superior education and splendid physical development and (those who have been in the service several years) well versed in the routine work of the medical department, are inferior in all matters pertaining to medicine and surgery to the national-guard surgeons.

The slur cast upon the army medical corps by the writer in *The Criterion* did not surprise us, for the people of the country, especially those in New York, who have seen shocking sights with their own eyes, are so fierce in their wrath that they must find some one upon whom to vent it. The complacent assurances of the executive in each department of the army, staff and line, that everything has been done for the soldier that could be done, coupled with the trite remark that war is not the equivalent of a summer vacation, would naturally, if believed in, leave one no alternative but to conclude that the unnecessary sufferings of the sick and wounded were due to incompetence of the doctors. We little expected, however, to see the same charge made in a medical journal, over the signature of one whose reputation as a surgeon and whose position as the predecessor of the surgeon-general of the army in the presidency of the American Medical Association will give his words, in the minds of many of his readers, all the weight of indisputable authority.

The inferiority of the army surgeon, Dr. Senn says, is the natural outcome of circumstances. "The young army surgeon has to spend many years at small and often out-of-the-way posts, where the opportunities for clinical experience and intercourse with professional colleagues are necessarily limited. He naturally soon falls into the monotonous and routine work of the post life, with little or no inducements to continue his post-graduate scientific and medical studies. When the time comes to pass an examination he wakes up from his lethargy sufficiently to go through the different compends to prepare himself for the coming ordeal. He breathes easy after he has reached the major's rank, as this promotion forever closes the door of the much-dreaded green room. From now on he is in the line of slow promotion without any extra exertions on his part. He receives his salary and looks confidently for assignments to posts where he can spend the balance of his life in ease and luxury. He has reached a time in life when he feels that he can avail himself of the work of his subordinates without interfering with his emoluments or his position in social and military life. He is conscious of the fact that he has reached a rank and a station in life where it is proper for him to look to his assistants to do the drudgery which he had become accustomed to in the past, and begin to enjoy the life before him." Then follows a list of the reasons why the military surgeon taken from civil life must be far better than his colleague in the regular army.

Leaving aside the question of taste involved in such a comparison made by one who is himself a "military surgeon taken from civil life," we cannot regard this public disparagement of the army medical corps as other than cruelly unjust. The surgeon-general of the army is known the world over as a man of far more than ordinary professional attainments and as a bacteriologist of the first rank. The worst that has ever been said of him is that his executive ability is not on a par with his scientific acquirements. The deputy surgeon-general is another who has reached the major's rank and so "breathes easy" and "receives his salary." He may not be able to perform a laparotomy as rapidly and deftly as some military surgeon taken from civil life, but we never before thought of him as the inferior of the "average national-guard surgeon." But Dr. Senn implies that he bases his opinion of the army surgeon upon his experience in the present war; so perhaps he does not intend that his strictures should apply to the higher officers serving in Washington, but rather to those who were his comrades in camp and on the field, and of whose inferiority he can speak from personal observation. Among these, to mention only a few who have attained the major's rank and "breathe easy," we find Major Havard, Major La Garde, and Major Wood at Santiago; Major Torney and Major Bradley on the *Relief;* Colonel Greenleaf, Colonel Hartsuff, and Major Maus in Porto Rico; and Colonel Forwood and Major Brown at Camp Wikoff. There were others in the regular army, at Chickamauga and elsewhere, associated with Dr. Senn during his five months of service, but the names above mentioned are sufficient to show the utter baselessness of this attack upon the professional standing of the army surgeon. The question is absurd and not worth an argument. Any one who has ever come in contact personally or professionally with the members of the medical corps of the United States army knows that, possibly with rare exceptions, they are the equals in scientific attainments of their professional brethren anywhere in the country.

Drowned in Dust.—A coroner's jury in an Iowa town recently returned a verdict that a man found dead was "smothered to death in the dust of the public highway." The man was a ranchman who left the town for his home, some miles distant, in the hottest part of the day. A mile from town he was overcome by the heat, and possibly by his potations, and fell from his horse. The dust at this place was several inches deep and very fine. The man fell on his face and was unable to turn over.

REST IN THE TREATMENT OF SKIN DISEASES.

The address delivered by Dr. Allan Jamieson at the Edinburgh meeting of the British Medical Association dealt with the above subject to a somewhat limited extent. The author expressed himself in a manner suggestive rather than didactic. After alluding to the fact that rest as a means of treatment of skin disease has received but little attention in works on dermatology, Dr. Jamieson gives the following definition of rest in a medical and surgical sense: "What is meant by rest? Certainly not absolute inactivity. This the surgeon may aim at, at all events for a brief preliminary period in the coaptation of fractured bones; but even he has very early to think of the tendons, muscles, vessels, and nerves in the neighborhood, to say nothing of the related joints, which would all suffer were complete quiescence insisted on for too long a time. Absolute rest is impossible in the case of the skin. . . . But while it may be out of our power to procure by the means at our disposal absolute and entire quiescence, comparative compose is attainable, and this in the great majority of cases is sufficient for our purpose. Rest then consists in the removal of irritants, whether these be such as worry and distress the mind or tense and vex the body." The need of rest for the skin is then especially dwelt upon, and it is pointed out that the term eruption itself implies disturbance and calls for rest.

With regard to eczema Dr. Jamieson says: "Whatever view of the nature of eczema may be determined on in the discussion which is to follow, its relation to catarrhal processes cannot be overlooked, and our most successful efforts to cope with it are those which follow the lead given by this theory. It does not matter whether we regard it as a parasitic catarrh or not, provided we bear in mind that it is a catarrh. We treat it on the same principles as we do an internal catarrh, though we can apply remedies which are impracticable in the case of internal catarrh. Just as in bronchitis we endeavor to soothe the inflamed and irritated mucous membrane by keeping the air of the apartment continuously moist and warm, so in eczema we envelop the raw, denuded, oozing surface with a soft, bland, aseptic medium. A starch jelly, with which is combined a proportion of boric acid, is the least irritating if perhaps the weakest of our available correctors of putrefaction."

After drawing attention to the extreme sensibility to light observed in some skin diseases, as xeroderma pigmentosum, and the successful results obtained by treating such cases with brown ointment, and by covering the face when out in the air with a dark brown veil, thus procuring perfect rest for the abnormally tender skin, Dr. Jamieson proceeds to a consideration of the means to be pursued to secure rest in those skin diseases caused by parasitic agencies, and in the case of erysipelas concludes that the treatment of erysipelas by strong ichthyol ointments affords one of the best examples of medicinal rest to an inflamed skin that can be cited.

An able and instructive paper is brought to a conclusion by pointing out that rest is an important factor in the cure of syphilitic affections of the integument.

THE END OF COMPULSORY VACCINATION IN ENGLAND.

By far the most important event which has occurred in the English medical world within the memory of the present generation has recently been consummated. The compulsory vaccination bill has been practically rendered of no effect in England. For many years there has been a persistent and strenuous opposition on the part of a small but irreconcilable minority against the vaccination laws, and now we see the strongest government of the century giving way to the importunate demands of a small but particularly assertive class of the community, although by its own showing strongly convinced of the efficacy of vaccination. In this country the antivaccination sentiment in England seems quite incomprehensible, so strong is the belief here that vaccination is a preventative of small-pox. On the European continent the faith in the comparative immunity conferred by vaccination is universal. Since 1875 Germany has vaccinated every infant and revaccinated every child before it has reached the age of thirteen years. The success of that experiment is testified to by Gerhardt, who wrote in 1896 that the disease had almost died out in Prussia. In the face of all these convincing proofs, England, the home of Jenner, is the first country to throw doubts on the value of vaccination. The measure agreed upon provides that no parent will be convicted for refusing to vaccinate a child if he satisfies the court that he has conscientious scruples as to the beneficial effects thereof. There can be no doubt, judging from the prejudices among the lower classes against vaccination, that these scruples will multiply exceedingly, and that soon the law will to a great extent have become a dead letter. The strong stand taken in England against vaccination is due principally to two causes, one of which is the increasing ignorance of the ravages of small-pox, and of the terrible mark which those who escaped with life had to bear until Jenner's treatment came into use, and the other reason is the difficulty of procuring good lymph, and the carelessness of many medical men in performing the operation. So far, now, however, as the lymph supply is concerned, the reproach of evil consequences from that cause is removed, the public provision of glycerinated lymph insuring a pure article. One feature of the case worthy of notice in connection with the antivaccination crusade in England is the fact that almost without exception the lay journals side with the medical journals in opposing the bill just passed. *The Times* says that the strict enforcement of the law of compulsion, even though it only authorized the infliction of a single penalty, would have gradually brought home to the minds of the parents the fact that vaccination could not be omitted without inconvenience and pecuniary loss, and the fact that when performed it was no longer followed by the evil consequences which, in a very

small proportion of cases, had been at least supposed to arise from it. In the words of Lord Lister, England is going to undertake a tremendous experiment, and we may add that it is one that will be watched with intense interest by all countries of the civilized world.

News of the Week.

A Week of Intense Heat.—It is seldom that New York is subjected so late in the season to such a prolonged period of high temperature and humidity as that through which we have just passed. The hot wave appeared on the 1st of September, on which day there were 2 deaths from insolation. The effects of the heat became apparent the following day, when there were 28 deaths caused directly by the high temperature. On the 3d of September the deaths numbered 61; the 4th there were 56; the 5th, 47; the 6th, 12; and the 7th—the last of the excessive heat—the mortality was 10. The total number of deaths from heat stroke during the week was therefore 216, and the number of cases of non-fatal heat prostration reported to the police was over 600. The mortality of the week indirectly caused by the heat was especially heavy among babies. A report issued by the board of health gives the number of deaths of children under two years for the first five days of the week as 240. Of this number 139 were male children and 101 female.

Small-Pox at Put-in-Bay.—There has been an outbreak of small-pox in a hotel on Put-in-Bay Island in Lake Erie. A week ago there were twenty-seven cases on the island. One death had occurred and one patient escaped to the mainland. The others are confined in a pest house near the hotel, which is well guarded to prevent any more from running away.

The Sanitary Condition of Camp Wikoff.—If the sanitary conditions are not as they should be at Montauk Point, the fault does not lie in the want of inspection. First the secretary of war visited the camp and pronounced it good; then the President went there and was apparently not quite so pleasantly impressed; finally the surgeon-general made a personal inspection of the hospitals and said that he found them in excellent condition. There was plenty of everything needful—doctors, nurses, and medicines—and the sanitary condition of the hospital could hardly be improved. Concerning Montauk Point as a site for an army camp, Dr. Sternberg is reported as saying that he could only reaffirm what he said in his original report about the place when he first inspected it. A better site could not be found on the Atlantic coast. Not only is it healthful, with good air and comparatively pure water, but it is so isolated that there is absolutely no danger of infection to the centres of population. He disagreed entirely with Dr. Senn as to the danger of contamination of the water supply and the consequent spread of typhoid fever. The water is filtered through two layers of clay and sand about one hundred feet deep, and when drawn to the surface is practically pure. The disease which gave the most trouble, Dr. Sternberg said, was malaria, and while there were some cases of typhoid fever at the camp, the number was not very large. It is possible that the actual number of typhoid-fever patients in the hospital is not large, but the facts related by Dr. Thompson in another column would indicate that the infection is widespread, and that the reason more cases are not in the hospital is that many are transported to New York before the disease has declared itself or has been discovered by the surgeons.

Yellow Fever.—There have been reports during the past week of cases of yellow fever at several places in Mississippi and Louisiana, especially at Orwood and Taylor in the former State. Two "suspicious" cases were reported at New Orleans by the Louisiana State board of health, but upon careful investigation they were declared not to be of yellow fever. Quarantine against places where genuine cases of the disease are known to exist has been declared by Memphis, Jackson, Mobile, and other towns. Officers of the State boards of health and of the Marine Hospital service are sent to investigate all new cases reported, and the authorities are very hopeful of being able to confine the fever to the infected districts, which are ordinarily healthy and are not densely populated.

The War Tax on Drugs.—Several manufacturers and drug importers of New York are trying to convince the commissioner of internal revenue that his classification of the various coal-tar products as medicinal chemical compound preparations is erroneous. They contend that these substances are uncompounded, and as such not subject to tax. The commissioner will not reverse his decision, but has directed a revenue agent to seize some drugs of this kind found unstamped, in order that a test case may be brought before the courts for a judicial decision.

The Prevention of Tuberculosis.—The Congress for the Study of Tuberculosis, recently held in Paris, declared officially that contagion is the most important cause of human tuberculosis, and that sputa dried and reduced to dust are the most effective agents of contagion. Acting upon this theory of the spread of the disease, the congress recommended: 1. That until the time arrives when tuberculosis will be included among the contagious diseases the notification of which is compulsory, all places open to the public should be provided with hygienic spittoons, and with a conspicuous notice forbidding expectoration anywhere else than into these receptacles. 2. That the public authorities order the execution of this measure with the least possible delay in all places under their jurisdiction, and especially in schools of every class. 3. That tuberculous patients should not be sent to convalescent homes open to persons suffering from other diseases. 4. That homes should be established and specially reserved for convalescent children. 5. That a medical committee should be formed for the establishment of sanatoria where the poor may be treated without charge. 6. That these sanatoria should be as numerous as possible. 7. That the authorities encourage by an official patronage courses of instruction in hygiene similar to those which the league against tuberculosis is now organizing in Paris

in each *arrondissement*, with the idea of extending this movement to the other towns of France. 8. That the permanent committee of the congress make an official application to the general management of the universal exhibition of 1900 to bespeak its interest in the work of prevention of tuberculosis, by studying, in conjunction with the committee, the form in which instruction should be given to visitors to the exhibition as to the means whereby tuberculosis is contracted and can be avoided. 9. That periodical international meetings be held for the study of tuberculosis, especially its prophylaxis. 10. That governments should endeavor to devise means of preventing or repressing the fraudulent use of tuberculin for the purpose of concealing the existence of tuberculosis in animals intended for sale or exportation. The congress, further considering that the constant increase of bovine tuberculosis gravely threatens public health, and that contagion is the sole truly efficient cause of this increase, insisted upon the urgent necessity of legislative measures looking to the separation of diseased from healthy animals, the prohibition of the sale of diseased animals, the supervision of cowhouses devoted to the production of milk intended for public use as food, and the immediate slaughter of every cow affected with tuberculous mammitis, the sterilization or pasteurization of milk intended for the production of butter and cheese on a large scale, and the generalization of the service of inspection of butchers' meat.

Missouri State Medical Association.—At the annual meeting of this association, held at Kansas City in May, the following officers were elected: *President*, Dr. George Highsmith, of Carrolton; *First Vice-President*, Dr. W. A. McCandless, of St. Louis; *Second Vice-President*, Dr. C. F. Wainwright, of Kansas City; *Third Vice-President*, Dr. W. S. Allee, of Olean; *Fourth Vice-President*, Dr. J. D. Brumell, of Salsbury; *Fifth Vice-President*, Dr. W. B. Lucas, of Mendon; *Secretary*, Dr. A. F. Dresel, of Sedalia; *Assistant Secretary*, Dr. B. C. Hyde, of Kansas City; *Treasurer*, Dr. U. S. Wright, Fayette. The next meeting will be held in Joplin.

The Plague in Bombay.—The epidemic has entered upon another period of recrudescence in Bombay, after a remission during June and July similar to that of the year before. Last year the mortality was slight for a period of twenty-two weeks, but this year for one of eight only. The number of deaths has been steadily increasing from thirty-eight in the week ending July 5th to two hundred and thirty in the week ending August 27th.

Obituary Notes.—Dr. William Henry Bennett, of Brooklyn, died at his home in that city, on September 1st, aged fifty-four years. He was born in Brooklyn, where he received his early education, and was a graduate of the University Medical College in the class of 1870. He was a member of the Kings County Medical Society. He is survived by a widow and three sons.—Dr. W. S. McNairy died in Washington on September 3d, at the age of eighty-one years. He was born in Tennessee and was graduated in medicine from the University of Pennsylvania. In 1852 he entered the government service as a clerk in the navy department, and served at his desk almost continuously up to five days before his death.—Dr. J. K. Hogan, of this city, died on September 3d. He was born in Ireland, and was a graduate in medicine of the Long Island College Hospital in 1888.—Dr. John L. Neilson, medical inspector at the Charlestown navy yard, died suddenly in Boston on September 1st. He was in his fifty-fourth year, and had been twenty-nine years in the service. He was a graduate of the Medical College of Ohio in 1866. A widow, a daughter, and a son, who is also a naval surgeon, survive him.—Dr. Thomas S. Robertson, of this city, died September 7th, of pulmonary trouble and exhaustion resulting from the excessive heat. He was born in Glasgow in 1854, and began his medical studies in London, being a pupil of McNamara. In 1875 he came to this country and took a degree of M.D. in 1879 after a course of study at the University of Vermont. He was a member of several medical societies and other scientific and social organizations.

A Surgeon in Disgrace.—A surgeon in one of the volunteer regiments was tried recently by court-martial on the charge of desecrating the graves of Confederate soldiers at Bull Run, near Manassas. He was acquitted of the charge of having participated in the desecration, but was found guilty of having failed to exercise his authority as an officer in not stopping the desecration, and putting the men so engaged under arrest. The finding of the court-martial was that the surgeon be deprived of his rank for two months, be confined to regimental camp, and forfeit half his pay for the same length of time, and that he be reprimanded by the commanding general. In the mean time, however, he was arrested by the sheriff of the county in which the desecration of the graves occurred, and was held to answer an indictment charging him with the offence of which the court-martial acquitted him.

Cottage Hospitals.—Many of the summer residents of the eastern end of Long Island are turning their cottages into temporary hospitals for the treatment of sick soldiers from Camp Wikoff. Ten are being cared for in this way at Bay Shore and twelve at Islip.

A Meat Diet Necessary in England.—An English provincial journal states that the members of the Dominican Order in that country have received permission from Rome to eat flesh four days a week instead of perpetually abstaining, as heretofore. In cases of ill-health or specially hard work meat is to be allowed at the principal meal on every day except Friday. This decision has been arrived at after a very careful medical and official scrutiny as to the effects of perpetual abstinence from meat in a variable climate like that of England. The result is that vegetarianism has been declared incompatible with good work. If Haig's theories are correct, we shall soon see the gentle friars and nuns hobbling about with inflamed joints, racked with headache, and souring as to their disposition as only the temper of a "uricacidæmic" sufferer can be soured.

The Passing of the Retail Pharmacist.—At the annual meeting of the American Pharmaceutical Association, held recently in Baltimore, Mr. Joseph Feil, of Cleveland, read a paper showing that the number of drug stores in the country is progressively decreasing, not only relatively to the population, but actually. The decrease varies in different parts of the country, ranging from 1.8 per cent. in Pennsylvania in the last two years to 24.6 per cent. in Texas. The total number of drug stores in the United States in the years 1896, 1897, and 1898, was said by the reader of the paper to be respectively 37,664, 36,463, and 35,467. Within the same period the number of wholesale druggists also decreased from 296 to 284. The reasons for the decrease, Mr. Feil believed, are the competition of the department stores, particularly in toilet articles, and the wide practice of price cutting on proprietary medicines, to which might be added the growing custom among physicians of giving remedies in tablet form instead of writing prescriptions. Mr. Feil said that when the retailers number about 25,000, and the wholesalers about 200, equilibrium will be established and the decrease in the number of pharmacies will cease.

Examination for the Army Medical Service.—An army medical board will be in session at Washington City, D. C., during October next for the examination of candidates for appointment to the medical corps of the United States army, to fill existing vacancies. Any person desiring to present himself for examination by the board will make application to the secretary of war before October 1, 1898, for the necessary invitation, giving the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which he was graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal acquaintance, from at least two reputable persons, as to citizenship, character, and habits. The candidate must be between twenty-two and twenty-nine years of age, and a graduate from a regular medical college, as evidence of which, his diploma must be submitted to the board. Successful candidates at the coming examination will be given a course of instruction at the next session of the army medical school. Further information regarding the examinations may be obtained by addressing the surgeon-general, United States army, Washington, D. C.

The Maritime Medical Association held its eighth annual meeting in Halifax, N. S., on July 6 and 7, 1898, under the presidency of Dr. D. A. Campbell. The election resulted in the choice of the following officers: *President*, Dr. R. MacNeill, Stanley, P. E. I.; *Vice-Presidents*, Drs. G. A. B. Addy, St. John, N. B., W. B. Moore, Kentville, N. S., and S. R. Jenkins, Charlottetown, P. E. I.; *Secretary*, Dr. George M. Campbell, Halifax, N. S.; *Treasurer*, Dr. T. D. Walker, St. John, N. B.

The Spitting-Nuisance is by no means the peculiarly American institution that some of our home and foreign critics would fain have us believe. The trouble is quite acute in Paris, and the admonitions which have recently been posted up on the Seine boats and on the Paris omnibuses are treated as a dead letter. In order to induce people to desist from spitting in public places, the board of health has suggested that the public be instructed concerning the danger of this habit. The police prefect has therefore requested the boat and omnibus companies to add to the prohibition an appendix setting forth the reasons why it should be observed.

The Oregon State Medical Society.—At the twenty-fifth annual meeting of this society, held at Portland, June 2 and 3, 1898, the following officers were elected: *President*, Dr. C. H. Hall, of Salem; *Vice-President*, Dr. Harry Lane, of Portland; *Secretary*, Dr. William F. Amos, of Portland; *Treasurer*, Dr. M. H. Cardwell, of Portland. The next meeting will be held in Portland, June 15 and 16, 1899.

The Montana State Medical Association held its annual meeting at Missoula on May 25 and 26, 1898. The following officers were elected: *President*, Dr. B. F. Sandow, of Neihart; *First Vice-President*, Dr. J. J. Buckley, of Missoula; *Second Vice-President*, Dr. T. A. Grigg, of Butte; *Secretary*, Dr. B. C. Brooke, of Helena; *Treasurer*, Dr. G. H. Barbour, of Helena; *Corresponding Secretary and Historian*, Dr. O. Y. Warren, of Warm Springs. The next meeting will be held at Butte, on May 17, 1899.

A Society for the Study of Malaria.—It is proposed to establish a society in Italy for the study of malaria, and more especially of its prophylaxis. In the preliminary circular it is asserted that "malaria keeps 5,000,000 acres of ground in Italy from cultivation; it affects, more or less, 63 provinces and 2,823 communes; and every year it poisons about 2,000,000 inhabitants, killing 15,000 of them. It is impossible to estimate the economic damage done to our country by the scourge, and no sanitary problem is more intimately bound up with the question of our prosperity."

Dr. Joseph B. Bissell has been appointed visiting surgeon to Bellevue Hospital.

Rabies in Prussia.—The Prussian dog-muzzling regulations are very strictly enforced, but despite this act five deaths from rabies were reported in that country in 1897.

A Berlin Pasteur Institute.—A department for the treatment of hydrophobia by Pasteur's method, and for scientific research on the subject of hydrophobia, has just been opened in the Berlin Institute for Infectious Diseases. This establishment is the first of its kind in Germany.

Dr. George R. Elliott has been appointed orthopædic surgeon to the Montefiore Home for Chronic Invalids.

Professor Virchow is to deliver the Huxley lecture at Charing Cross Hospital, London, next month, and a dinner will be given in his honor. The dinner will take place at the Hotel Metropole, on Wednesday, October 5th. Lord Lister will preside.

Reviews and Notices.

STATISTICA SANITARIA DELL' ARMATA par gli Anni 1895 e 1896. Roma: Ludovico Cecchini. 1898.

THIS collection of sanitary statistics of the Italian navy for 1895 and 1896, published by the minister of marine, shows a great improvement in the health of the navy over preceding years. While for 1873 to 1892 the average sick rate was from 700 to 400 per 1,000, in 1895 and 1896 it was 375 and 354 per 1,000. There is also much of interest in the statistics concerning the prevalence of individual diseases, the institution of sanitary reforms, etc.

ENCYKLOPAEDIE DER THERAPIE. Herausgegeben von OSCAR LIEBREICH, Dr. Med., Geheimer Medicinalrath, o.ö. Professor der Heilmittellehre an der Friedrich-Wilhelms-Universität, unter Mitwirkung von MARTIN MENDELSOHN, Dr. Med., Privatdocent der inneren Medicin an der Friedrich-Wilhelms-Universität, und ARTHUR WÜRZBURG, Dr. Med., kgl. Sanitätsrath, Bibliothekar im kaiserlichen Gesundheitsamte. II. Band, 3 Abtheilung. Berlin: August Hirschwald. 1898.

THIS part of Liebreich's incomparable work carries on the subjects from Hydronephrose to Mammageschwülste, and includes such important titles as Hydrothorax, Hysterie, Idiotie, Ileus, Immunität, Intubation, Iod, Iodoform, Kalium, Karbolsäure, Kehlkopfkrankheiten, Kropf, Leberkrankheiten, Leukæmie, Lymphdrüsen, Magenkrankheiten, Malaria, and many others. The work is a marvel of thoroughness in the way in which it covers the entire field of therapeutics, and when completed will be a most valuable addition to the library of the German-reading practitioner.

A GUIDE TO THE CLINICAL EXAMINATION OF THE BLOOD FOR DIAGNOSTIC PURPOSES. By RICHARD C. CABOT, M.D. With Colored Plates and Engravings. Third Revised Edition. New York: William Wood and Company. 1898.

THE fact that the first edition of this work was published only twenty months ago is an evidence of the favorable judgment of the public, and the public is a better judge and a more nearly infallible one than any individual reviewer can ever hope to be, however good may be his intention. It is flattering to the reviewer, therefore, to see that this superior tribunal has sustained the opinion expressed by him upon the first appearance of Dr. Cabot's work. As an indication of the rapid strides which this comparatively new science of hæmatology is making, we note that the author's additions to the book include an account of Oliver's tintometer and hæmoglobinometer, new matter in the chapters on the primary anæmias and on leukæmia, and a description of Müller's "blood-dust" (the newly discovered constituent of normal and abnormal blood), seventeen hundred additional blood examinations, new observations on poisoning by alcohol, opium, corrosives, and ptomains, on aneurisms, on cretinism, and on paroxysmal hæmoglobinæmia. We know of no work in the English language of such a practical character as this, and certainly there is none in any language more recent.

NASAL OBSTRUCTION. The Diagnosis of the Various Conditions Causing it and their Treatment. By W. J. WALSHAM, M.B., C.M. Aberd., F.R.C.S. Lond. Illustrated. New York: William Wood and Company. 1898.

IN taking up a book of two hundred and fifty pages upon what is, after all, but a single symptom of nasal disease, one is apt to think that the matter has been overdone; but the great advance which has been made in recent years in our conception of the intranasal structures and of the nose itself as a physiological organ justifies the fullest possible study of those causes which may interfere with its proper functioning. This task Dr. Walsham has taken upon himself, and he must be congratulated on his success. He has long been a successful teacher of surgery and has brought to his task a valuable experience. He outlines his plan of preparing the present volume as "working from the known to the unknown —in other words, working from the known conditions of the parts, such as redness, swelling, etc., to the unknown disease of which they are the signs and symptoms, instead of first describing the disease and then discussing how it may be diagnosed from similar affections." As a result of this method, the statements appear in a tabulated form and in short paragraphs. A complete index makes it easy to find any particular subject, and this too in spite of the fact that the general topics of diagnosis and treatment are scattered through different parts of the volume. The author exhibits a familiarity with the very latest advances in this department of rhinology and shows on every page that he has been a careful student of its literature. Naturally such a volume contains little that is essentially new, but, when we consider how much undigested information there is in the average text-book, we are under obligations to any one who will arrange it in such a readable form as Dr. Walsham has done. We venture to say that any worker in this field, no matter how much he has read or how much he has done, will have his ideas clarified and his conclusions made more definite after perusing these pages. To the beginner in rhinology no better guide can be furnished.

ELECTRICITY IN DISEASES OF THE NOSE, THROAT, AND EAR. With 161 Illustrations. By W. SCHEPPEGRELL, M.D. New York: G. P. Putnam's Sons. 1898.

THIS work is to be commended from all points of view, for it is written in a fair and impartial spirit and frankly acknowledges the failure of electricity in certain respects, while extolling its value in others. The first five chapters are devoted to the physics of electricity, and special attention is given to the different methods of generating currents, with their varying physiological effects. Dr. Scheppegrell truly says that no physician can have satisfactory results with this therapeutic agent unless he fully understands its laws. It is not comparable to any drug which we can procure from the chemist in a far better condition than we could possibly prepare ourselves, but "in electro-therapeutics we are compelled very often to be the manufacturing chemist, distributing agent, druggist, and physician." Consequently we should know all about our remedy that it is possible to know. Chapters vi. to x. inclusive treat of methods of examination; then are discussed the special forms of application of the agent, such as cautery, electrolysis, cataphoresis, massage, etc.; the remaining part of the book is devoted to the special consideration of electricity as applied to the various diseased conditions suggested by the title. We must not forget to mention the fact that the X-rays receive full consideration from both the physical and the therapeutical point of view. Valuable features of the work are the elaborate bibliographical list, containing nearly six hundred references, and the excellent index.

ATLAS AND EPITOME OF OPERATIVE SURGERY. By DR. OTTO ZUCKERKANDL, Privatdocent in the University of Vienna. Authorized Translation from the German. Edited by J. CHALMERS DA COSTA, M.D., Clinical Professor of Surgery in Jefferson Medical College, Philadelphia, Surgeon to the Philadelphia Hospital, etc. Philadelphia: W. B. Saunders. 1898.

THE Lehmann series of hand atlases is acknowledged to be excellent. The superiority of colored plates and accurate illustrations over mere description, as a means of conveying a correct knowledge of the operations of modern surgery, is undeniable. In the book before us both the written matter and the illustrations are good.

LECTURES ON TUMORS. By JOHN B. HAMILTON, M.D., LL.D., Professor of Surgery, Rush Medical College and Chicago Polyclinic, Surgeon to Presbyterian Hospital, Consulting Surgeon to St. Joseph's Hospital, etc. Third Edition. Philadelphia: P. Blakiston's Son & Co.

THE last decennial revision of the nomenclature of the Royal College of Physicians took out of the list of tumors all the class due to infective organisms (the granulomata) and confined it strictly to the neoplasms and cysts. As the American Medical Association followed its lead, an entire re-arrangement of this book was necessary, and the work was improved by the suppression of at least one chapter. The sole regret of the reader of this book will be that the Royal College did not abolish tumors entirely.

CONSERVATIVE GYNECOLOGY AND ELECTO-THERAPEUTICS. A Practical Treatise on the Diseases of Women and their Treatment by Electricity. By G. BETTON MASSEY, M.D.; Physician to the Gynecologic Department of Howard Hospital and late Electro-Therapeutist to the Infirmary for Nervous Diseases; Fellow and ex-President of the American Electro-Therapeutic Association; Member of the Société Française d'Électrothérapie, American Medical Association, etc. Third Edition. Philadelphia.

New York, and Chicago: The F. A. Davis Company. 1898.

Owing to the preposterous claims put forward for the use and application of electricity by its professors, its progress has not been nearly so rapid as its undoubted merits have deserved, and for this reason the medical profession has fought shy of having recourse to this method of treatment. However, the scope and limits of electro-therapeutics are now more clearly defined, and in proportion as its claims have been brought within rational bounds, so has its use in medicine become largely extended. Dr. Massey's work, although not altogether free from the faults referred to above, is in the main an able exposition of the benefits to be derived from the treatment of diseases of women by electricity. The work is well got up in every respect, the illustrations being especially good.

Handbook for the Hospital Corps of the U. S. Army and State Military Forces. By Charles Smart, Deputy Surgeon-General, U.S.A. New York: William Wood and Company. 1898.

This, the third edition of Colonel Smart's well-known work, may be said to have been issued at a time when the hints contained in its pages on the duties of the hospital corps are particularly seasonable. The chapter on the "Sanitary Care of Camps" will at the present time appeal with more than ordinary force to the medical profession of this country. Colonel Smart says: "The site of a camp is of the first importance, because in the event of its insalubrity no exercise of care in the sanitary government can protect from evil consequences." And again, with regard to typhoid fever, he remarks: "The facts and arguments in favor of a soil origin of typhoid fever, were they even less convincing than they are, would have to be accepted by the military sanitary officer as offering the only sure basis on which to attempt the preservation of his command from the attacks of this disease." And he goes on to insist upon the need of active interference and supervision on the part of army doctors, in order that the soldiers' quarters may be erected in accordance with good sanitary principles. Colonel Smart's handbook should be part of the equipment of every military surgeon.

A Manual of Modern Surgery, General and Operative. By John Chalmers Da Costa, M.D.; Clinical Professor of Surgery, Jefferson Medical College, Philadelphia; Surgeon to the Philadelphia Hospital, etc. With 366 Illustrations. Philadelphia: W. B. Saunders. 1898.

This is a revised edition of Dr. Da Costa's useful manual of surgery. The revision has been attended with much success and the present production is in many respects an advance on its predecessor. The work throughout is notable for its conciseness; redundance of language and padding have been scrupulously avoided, while at the same time it contains a sufficient amount of information to fulfil the object aimed at by its author, namely, a text-book for the use of the student and busy practitioner. The sections relating to the surgery of the liver and gall bladder, the female breast, wounds inflicted by modern projectiles, electrical injuries, and the use of the Roentgen rays are in keeping with the remarkable progress made of late in these particular branches. The numerous illustrations are satisfactory.

Extra-Uterine Pregnancy.—Extra-uterine pregnancy is more frequent than is generally believed by most of the profession. When left to nature's resources the mortality is very high, the patient dying from primary hemorrhage, or secondarily from sepsis and peritonitis. The diagnosis is usually easy after the rupture takes place. The surgical mortality, in skilled hands, when the operation is done in time, is very low. No case of ruptured tubal pregnancy is out of danger until after a good ligature has secured the bleeding points. The abdominal route is the best and safest means of approach in these cases. Most cases should be irrigated properly, and drained after removal of the diseased tube and liberation of all adhesions. In all abdominal and pelvic diseases these cavities should be examined most carefully before making a diagnosis.—Cordier, *Annals of Gynecology and Pediatry.*

Clinical Department.

UNDIFFERENTIATED TROPICAL FEVERS.[1]

By A. Monje Lesser, M.D.,

Surgeon-in-Chief to the American National Red Cross Society, New York.

In regard to the fevers from which the patients suffered, some explanation should be made. I use the terms malaria and typhoid respectively, which terms doubtless cover a multitude of diseases. There were on the ship some typical cases of intermittent fever and typhoid fever. However, many suffered from a disease probably of malarial character, which I shall here describe, and which can be differentiated from other fevers of the tropics only by one with some experience.

The disease begins with a sudden rise of temperature, often to 105° and 106° F., and in two instances 107° F. The pulse runs up to from 100 to 130, but the respirations do not increase in rapidity proportionately. There are severe headache, circumorbital pain, pain in the neck, back, bones, and muscles. Nausea and vomiting accompany the fever. This condition (initiatory fever) lasts with but little remission for at least forty-eight, and often sixty-two hours; then the temperature begins to fall (usually in the morning of the third day, if carefully treated) to from 102° to 101° F. In the evening it may rise again and go as high as the day before, then falls during the night, with a profuse perspiration. The patient now feels comparatively well but weak. Some improve from that day, while others have exacerbations and remissions similar to those of intermittent fever, but there is no chill preceding the fever; instead the patient is nauseated and frequently vomits. Diarrhœa and other catarrhal troubles are complications from which the patient recovers as the fever leaves him. I found those cases on the ship especially among our convalescent yellow-fever patients.

I took specimens of blood for microscopic examination, but unfortunately not early enough in the attack, and after I had given quinine to the patient; so I do not know whether the absence of plasmodia would have any significance. However, the anæmia which existed was very marked, and the state of the blood was much the same as I found it in the reconcentrados in Cuba, who were sent from the interior high ground to the coast.

My treatment for these patients begins with a saline cathartic, and in some cases a washing of the stomach. To the irritable, if suffering from headache, I give one drop of the fluid extract, or, better, the normal liquid of gelsemium every half-hour until the first physiological symptoms appear, unless relief is obtained before; when mixed with two or three drops of water and placed on the tongue, it acts most quickly. (Gelsemium should not be given to the apathetic, or when the pupils are dilated and the face is pale.) When the temperature is lower I give 0.12 gm. (two grains) of quinine sulphate every two hours, with an equal quantity of dilute sulphuric acid. If the gelsemium has not given rise to any physiological symptoms, I continue to administer one or two drops with each dose of quinine. If the temperature rises again I discontinue the quinine, and continue the gelsemium hourly or half-hourly, as needed, but only while the fever lasts. The moment remission is fairly established, I begin again with quinine and the other remedies. The bowels should be kept clear by Epsom salts or Seidlitz powder, and I allow no food,

[1] An abstract from the report of the voyage of the transport *Concho*, submitted to Major Louis La Garde, Surgeon-in-Command of the Fifth Corps Reserve Hospital.

either solid or liquid, while the patient has a temperature above 101° F. I consider this of the greatest importance in order to insure positive action of the drugs. Water should be given, as much as possible, but it should be pure water. The cases thus treated get along best and without complications. The nausea and vomiting which preceded the paroxysm I have relieved by washing out the stomach, and this also somewhat assists in relieving the headache. A clear yellow fluid of alkaline reaction was returned from the stomach, with or without admixture of food. In cases in which I could not use the stomach tube I advised the patient to take two or three glasses of salt water and irritate his palate in order to produce vomiting. This usually gave great relief, even if only a portion of the water was returned.

For the diarrhœa, which often becomes troublesome, I give a mixture composed of one gram of pure carbolic acid, half a gram of tincture of opium, thirty grams of mucilage of acacia, and peppermint water enough to make one hundred and twenty-five grams, of which the patient takes a teaspoonful every two hours.

As soon as the acute symptoms have passed, one gram of sulphur, one decigram of camphor, and one-third of a drop of oil of peppermint should be given three times a day. After recovery great care must be taken in the diet until the strength is restored.

EXCISION OF THE BRACHIAL PLEXUS FOR NEURALGIA.

By WILLIAM W. BOSTWICK, M.D.,

ASSISTANT PHYSICIAN, SAILORS' SNUG HARBOR HOSPITAL, NEW BRIGHTON, RICHMOND, N. Y.

The comparative rarity of successful operations for the relief of intractable neuralgias of the brachial plexus leads me to report briefly the following case:

A. W. B——, an officer in the American merchant marine, suffered a dislocation of the right shoulder while at sea. No surgeon being on board, the luxation was unreduced till the vessel made port, a period of forty-two days, when by the heel in the axilla the head of the bone was replaced in the glenoid cavity. With what difficulty this was accomplished I am unable to say; at all events, the axillary artery was ruptured, gangrene set in, and the arm was amputated in the upper third.

Three weeks later the patient began to suffer from neuralgic pains of great intensity, and to complain of burning and tingling sensations referred to the fingers of the amputated member. Several operations were performed for the removal of bulbous enlarged nerves prior to his coming under our care.

In February last he was anæmic and worn out by his constant suffering, which medical treatment was powerless to relieve. On local examination the stump was found well-covered with healthy skin, but very tender, the tenderness extending to the region of the clavicle, scapula, and acromion process. From these indications of a degenerative process high up in the plexus, excision of the plexus was advised by Dr. W. C. Walser, although thickening and bulbous enlargements could be detected at the end of the stump.

The operation was performed on the 29th of February by Dr. Walser, assisted by Dr. Townsend and Drs. H. D. Joy and W. W. Bostwick of the hospital staff. The plexus was removed entire, leaving the origin of the long thoracic. A drain of silkworm gut was inserted, and the wound was closed by sutures of the same material. On the third day, the wound was inspected and being found healthy was redressed. On the fourth day, much to our disgust, the patient complained of pain starting in the neck in the line of incision and radiating to the root of the neck and shoulders. As his temperature was normal the wound was not inspected till the end of the first week, during which time the pain continued. On the seventh day during removal of the stitches a little puckering of the skin at the site of one of the sutures was noticed, which, when cut gave instant and complete relief, thus showing how trivial a matter may cause, in a neurotic individual, pain out of all proportion to that cause. From this on, the recovery was uneventful, and for the three months which have elapsed since the operation our patient has suffered no return of his neuralgia. His expression of constant pain has given way to one of cheerfulness, he has gained in flesh, and he claims to be a new man. Motor paralysis is complete, but sensation for touch and pain is preserved, and he describes sensations as if the "stump was asleep."

I have seen reports of the excision of the brachial plexus, and of the intradural section of spinal nerves, by Maury and Sands, Abbe, Horsley, Bennett, and McCosh, to the number of seven, of which three were unsatisfactory; in one case the man died on the eleventh day, and on autopsy sclerosis of the columns of Goll and of the posterior root zone was shown; and in three cases the results were more or less successful.

VICARIOUS MENSTRUATION.

By WILLIAM EDGAR DARNALL, M.D.,

ATLANTIC CITY, N. J.

I DESIRE to add the following case of vicarious menstruation to the interesting cases reported by Dr. Coughlin in the MEDICAL RECORD of June 4th:

Miss F. K——, white, aged twenty-three, unmarried, saleswoman, about a year ago was treated by me for gastric ulcer and anæmia, gaining in weight and color with the disappearance of all stomach symptoms, which have even yet never reappeared. Having gone to Virginia on a visit during the autumn, I was hastily summoned by a telegram, stating that she had had nine hemorrhages in one day from the stomach. When I arrived a day or two later, however, I found her up and about, and feeling very well. There was no evidence of anæmia, and she did not complain of pain or other stomach symptoms. The family had been much alarmed at the time of the hemorrhages; but I found on questioning her that they occurred just when a period was due, and that no normal menses had appeared, except a mere "show." She had been in a state of general discomfort for a day or so before, and she described her sensation when taken sick as "a rush of blood to the head." The natural plethora being relieved, she seemed to feel as well as usual after menstruation.

She is slight in build, but plump, blonde, and has never had any trouble with her uterine functions. Her menstruation has always been regular and normal. Several years ago she had some attacks of hæmatemesis while in very poor health. I attributed these, however, to ulcer, from the history she gave of them. It was impossible to find out whether they occurred at a menstrual period or in the intervals. Several months have elapsed since this attack of gastric menstruation without any further recurrence of it. She did not have at that time, nor has she had since, any symptoms of gastric ulcer.

1713 PACIFIC AVENUE.

Urethral Fever.—Five drops of oil of wintergreen six hours before and again immediately after a sound is passed will often prevent this trouble. Copious draughts of water should also be given to dilute the urine.—*International Journal of Surgery.*

Society Reports.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Fifteenth Annual Meeting, Held at Maplewood Hotel, near Bethlehem, N. H., August 31 and September 1, 1898.

First Day—Wednesday, August 31st.

Avenbrugger and Laennec.—Dr. E. O. Otis, of Boston, president of the association, delivered the annual address. After welcoming the members of the association, he entered upon the subject of his address, which was entitled "Avenbrugger and Laennec, the Discoverers of Percussion and Auscultation." It was quite improbable, he said, that an association largely devoted to the consideration of diseases of the chest would exist, were it not for the methods of thoracic examination which Avenbrugger and Laennec had discovered in auscultation and percussion; and it seemed eminently fitting that the society should honor the memory of these illustrious men by reviewing their lives and work. He then gave an account of Avenbrugger's life and his great work upon percussion, the "Novum Inventum." He was born in 1722, in Grätz, and died in Vienna in 1809; his discovery was given to the world in 1761. His life was spent in enthusiastic devotion to his profession and in love and service to his fellow-men. With dignity, sympathy, and enthusiasm in his art, modest, like most great men, never refusing to give of his best to suffering humanity, he richly lived out his long life. The "Novum Inventum" was neglected until forty-seven years later, when Corvisart revived it in 1808 by making a translation of it into French with copious commentaries, thus in truth making almost as great a discovery himself by discovering the original discovery. This work itself was discussed, with quotations from it, and its inestimable value shown. Corvisart, who translated the "Novum Inventum" of Avenbrugger, was also the teacher of Laennec, and thus by this happy coincidence united the two great discoverers, just as their discoveries were inseparably joined in practice. An account of Laennec's life was then given. He was born at Quimper, France, in 1781, and died at Plouaret in 1826. He published his immortal work on mediate auscultation in 1819. The incident leading to the discovery was narrated. One day while traversing the court of the Louvre, he perceived some children amusing themselves by applying the ear to the two extremities of a long beam or piece of wood, transmitting reciprocally the light sound arising from the blow of the finger against the opposite end. In the intermediate space no sound was perceptible. Laennec reflected upon this, and some days after, on being consulted by a young woman presenting the general symptoms of cardiac disease, with whom percussion was unsatisfactory on account of her stoutness and her age and sex, which prohibited the direct application of the ear to the chest, recalled the children in the court of the Louvre. Immediately he took a quire of paper and made a tight roll, one end of which he applied to the chest of the young girl and the other to his ear. With delight he found that in this way he perceived much more plainly the beating of the heart; and thus mediate auscultation was discovered. The development of the discovery and the making of the stethoscope were traced. Laennec's treatise upon "Mediate Auscultation and Diseases of the Lungs" was referred to, and its value emphasized. Laennec's whole life was absorbingly devoted to professional pursuits. He was absolutely true and unselfish in his professional aims. To improve his art, to seek truth in it wherever found, to establish the diagnosis of disease upon the sound basis of pathological anatomy and accurate observation, and to extend the knowledge of his new discovery—this was what he labored for. His courage in continuing his labors in weakness and suffering was heroic. In the diagnosis of diseases of the chest, he was universally admitted to be without a rival. Never robust, he wore himself out with his arduous labors as teacher, writer, and physician, and died of tuberculosis at the early age of forty-five years.

Common Errors of General Practitioners in Dealing with Cases of Pulmonary Tuberculosis.—Dr. Frederick I. Knight, of Boston, referred to certain common errors which he thought might be diminished if his remarks were indorsed by the members of the association in such a way as to give them the authority needed to influence the general profession. The errors to which he especially called attention were: (1) Failure to make an early diagnosis, which is now easy since the discovery of the tubercle bacillus. (2) Failure to admit the gravity of the situation the moment it is discovered, and to put the patient at once in the best possible condition for recovery. Niemeyer used to say that the danger of a consumptive patient was "that he became tuberculous." In the light of modern pathology Dr. Knight would say that the danger of a tuberculous patient was that he became consumptive, *i.e.*, the subject of secondary infection. There was often failure also to impress the patient with the gravity of the situation sufficiently to secure his thorough co-operation in the effort for his recovery. (3) Temporizing, giving nauseating medicines and too much alcohol, and prescribing exercises, etc., which only hasten the decline. (4) Sending patients away from home who have only a few months or weeks to live, or who have not sufficient money to live properly away from home long enough to do them any good; also exercising insufficient care in the selection of a residence for those who would probably be benefited by a change. (5) Insufficient professional supervision of patients, who always require constant watchfulness, whether they remain at home or go to some climatic resort.

The Result of Recent Experience with Phthisical Patients.—Dr. Vincent Y. Bowditch, of Boston, said that in his examination of patients he had been frequently impressed with the fact that one or two of what he believed to be the most important features in diagnosis, or rather prognosis, had apparently been overlooked by the physician in attendance. Although it was ordinarily comparatively easy to make a diagnosis of pulmonary tuberculous disease in cases in which dulness upon percussion, changes in the respiratory murmur, and even râles were lacking—cases in which the power of diagnosis and prognosis were taxed to the utmost—he had frequently found that the general practitioner had not paid sufficient attention to what he deemed the most important symptoms, the quality of the pulse, the temperature, and condition of the digestive organs. Post-mortem examinations had frequently shown that in patients with few physical signs in the chest, but with a weak, rapid pulse, more or less elevated temperature, and poor condition of the stomach, there had been an almost universal dissemination of tubercle, without perhaps marked breaking down of tissue. These unfavorable conditions of the pulse, temperature, and digestive organs he believed to be entirely inconsistent with a truly incipient form of tuberculous disease, even when the physical signs in the chest were few or entirely lacking. He referred to and emphasized his observations in a previous publication, entitled "A Plea for Moderation in our Statements Concerning the Contagiousness of Phthisis." While appreciating fully the teachings of bacteriology, the importance of absolute

cleanliness in connection with phthisical patients, and attention to the general health of those in attendance, he maintained that this care could be kindly and wisely given without causing a spirit of terrorism and without making such sweeping and unjustifiable statements as that "all homes for consumptives are a source of danger to the surrounding community." He mentioned the statement of Flügge, of Berlin, regarding the possibility of bacilli being carried in small droplets of mouth fluid into the air during the act of coughing, and believed that we should wait for further proof before accepting this extreme theory.

Dr. Didama, of New York State, referred to one of the errors mentioned by Dr. Knight, namely, that of sending to Colorado and elsewhere patients who were too far advanced in consumption, and he said it would seem that some physicians sent them away to escape signing the death certificate. Yet there were instances of patients who had had many hemorrhages having been benefited by a residence in Denver. He questioned whether, when the disease was far advanced and the patient was nervous about his condition, it was right to tell him frankly the absolute truth. Regarding the remedies, he said that consumptive patients were expected to improve as the medicine was changed or as they changed the doctor. Even within two or three days of death there was often an improvement in the symptoms under such circumstances. The speaker said he was glad Dr. Bowditch had spoken of the too common feeling that consumptives were social lepers. He did not believe there was any particular danger in having a friend call who had a consumption cough.

Dr. Walker, of Philadelphia, agreed heartily with the sentiments of both papers.

Dr. R. G. Curtin was much pleased with Dr. Knight's remarks in regard to the old-fashioned treatment of tuberculosis. He agreed with the remarks of Dr. Didama, that physicians were often to be blamed for sending patients away when they would be better at home, yet there were times when the advice was unheeded until the disease was too far advanced.

Dr. J. H. Musser, of Philadelphia, thought it one of the most difficult things in medicine to decide which cases should be sent away and which retained, and cited the case of a patient with apparent general tuberculous infection advanced to extreme weakness and emaciation whom he had advised to go to the Adirondacks. The patient's stay there under medical treatment had resulted in arrest of all manifestations of the disease.

Dr. Hart, of Denver, said that the papers of Drs. Knight and Bowditch expressed exactly what he had wanted to hear. He said that too often patients arrived in Denver in about the condition in which they were sent home, with every indication of advanced tuberculosis, and that it was avery difficult thing for the physician at the health resort to manage these cases.

Dr. Charles E. Quimby said that he had nothing to add personally, except that which Dr. Bowditch and Dr. Knight, through their kindness of heart, were prevented from saying, namely, that while their papers were ostensibly directed against certain errors of the general practitioner, they were intended for all, even for members of the association.

Dr. Coleman, although he had had few cases illustrating points brought out in the papers under discussion, believed that the early appreciation of the tuberculous lesion was the key to the cure, and that when a proper physical examination was made many of the errors would be avoided. It was the invariable rule of his life to make a thorough physical examination of all cases coming to him.

Dr. Beverley Robinson, of New York, said that, while he agreed with those who had spoken before, that a great many individuals were not examined carefully enough, that the diagnosis was not settled sufficiently soon, and that proper and judicious treatment was not followed up at all times as it should be, he believed that with a better understanding of the disease and the better education of the medical student this error would be much less frequently committed.

Dr. Knight said, in closing the discussion, that in the treatment of tuberculosis the excessive use of syrups should be avoided as much as possible.

Deaths in the Association.—Tributes were paid to the memory of Dr. Harrison Allen, of Philadelphia, by Dr. Curtin; of Dr. William Pepper, of Philadelphia, by Dr. Musser; and of Dr. T. D. Bratton, of Augusta, by Dr. Otis.

Ergot in Chronic Malaria.—Dr. A. Jacobi, of New York, read a paper with this title. He enumerated the active principles of ergot and the action of each. Ergot was very liable to lose its power in a short time, particularly when not gathered before the harvesting of rye, because of the speedy decomposition of its alkaloids and of its fat. After giving the result of his long experience with ergot in the treatment of malaria, Dr. Jacobi formulated the following conclusions: That there were cases of chronic intermittent fever with tumefaction of the spleen that, after having resisted the action of quinine, arsenic, methylene blue, eucalyptus, and piperin, were benefited by ergot. When enlargement of the spleen was not old and firmly established, the contracting effect of ergot was noticed within a reasonable time. The attacks would disappear before the diminution in the size of the spleen was very marked. Though the temperature after the employment of ergot remained irregular and was now and then somewhat elevated, chills as a rule were not noticed with this elevation. Plasmodia did not seem to disappear from the blood so rapidly as after quinine, when the latter was effective; even while some were still present, the attacks being more or less under control, the patient would feel better. Complicating local pain required additional treatment with ice or cold douches or heat; chronic hyperplasia demanded iodide of iron; digestive disturbances might indicate, as they often did when quinine was expected to act before the employment of ergot, an emetic or a purgative or stomachics. An experience extending over forty years, in which the speaker had used ergot in many instances, justified him in asserting at least this much: that there were many cases of apparently intractable chronic malaria that would get well with ergot. There were occasional cases in which the return of elevations of temperature after a successful use of ergot made the combination of ergot and quinine or of ergot and arsenic advisable, though quinine and arsenic had not been successful previously. Ergot, like quinine, probably by the sudden effect upon the spleen, was capable of bringing on the very first attack of chills and fever in chronic malarial poisoning when hydræmia and spleen tumors were not excessive.

The Distribution of Pulmonary Tuberculosis in New Jersey.—Dr. Guy Hinsdale, of Philadelphia, read a paper on this subject, and exhibited a map in which the various regions of the State were plotted so as to show the different degrees of prevalence of the disease. The distribution of tuberculosis in this State corresponded, he said, in great measure with well-known facts relating to the disease. Contrasted with New York and Pennsylvania, New Jersey did not show such wide variations. In the former State there were counties in which the disease was three or four times as rare as in equally densely populated districts. In New Jersey the counties in which the larger cities were situated showed a prevalence only twice as great as that of the sparsely settled regions.

Hudson, Essex, and Mercer counties, in which were situated Jersey City, Newark, and Trenton, had from four to five hundred persons living to one death from phthisis; while Sussex, Warren, Hunterton, and Gloucester counties had between eight and nine hundred persons living to one annual death from phthisis. The remaining counties were plotted to show the three intermediate grades. Elevation above tide, he thought, did not play a part, as it apparently did so plainly in the case of Pennsylvania. In New Jersey, on the other hand, one of the counties, Gloucester, in South Jersey, was quite low, but it belonged to the group in which tuberculosis was least prevalent. It was as free from the disease as were any of the most favored counties. In the northern and northwest part of New Jersey the surface was more diversified, reaching elevations of about two thousand feet. The soil of New Jersey was largely red clay with outcroppings in the northwestern part of sandstone, and in the northeastern portions of trap rock. In Essex county there were positive evidences of a great prehistoric lake, called Lake Passaic. Its southern portion was the present site of a great swamp. The soil of the southern half was principally sand, which in places like Lakewood reached a depth of six or seven hundred feet. But the character of the soil would seem to have little if any influence in the present instance in modifying the presence and distribution of tuberculosis. It was density of population which bore the closest relation to the distribution of tuberculosis in New Jersey. A diagram was shown in which this relation was characteristically represented. The counties which had less than one acre to each inhabitant had a high death rate from tuberculosis, while Atlantic, Sussex, and Cape May counties, which had from ten to twenty-two acres per inhabitant, had a low death rate. Three of these were maritime counties. Sussex had the lowest death rate of the four, and of all the counties in New Jersey it was the farthest from the sea and embraced the highest land in the State. It adjoined Pike County in Pennsylvania, one of the wildest and most healthful counties in that State. Few people visited the hilly country in the northern and northwestern portions. If they were more accessible to the larger cities, these undeveloped districts would no doubt be highly prized and largely sought.

A Plea for a Scientifically Accurate Method of Recording the Results of Physical Examinations of the Lungs.—Dr. Charles E. Quimby, of New York, read a paper with this title. This latter half of the nineteenth century had come to be known, no less in medicine than in other branches of science, as the age of progression. We as physicians might rejoice with peculiar satisfaction that in medicine the change had not been solely one of technique and application, but that in many lines at least we had started upon a strictly scientific basis. While surgery might perhaps present to the layman the most abstrusively attractive illustrations of exactitude in methods and results, the more critical and closely analytical professional mind must admit that the broadest and most potentially valuable advances in medical science of our own time had been in the domain of medicine. The very term, physical diagnosis, presupposed definiteness and certainty, claiming as it did for a basis the best developed of limited sciences. The purpose of this paper was to outline some modest attempts at recrystallization and to urge the adoption of a scientifically accurate method of recording the results of physical examinations of the lungs. That it was possible to make such a record, and in such manner as would render it a direct index to the amount of disease and a standard for future reference, the speaker was fully convinced. A complete physical record of respiration at any given point comprised (1) the pitch note of the trachea, (2) that of inspiration and expiration, and (3) the relative length of these two sounds expressed as a fraction. For example, respiration at point *a*, left chest: tracheal note, *g*; inspiration, *f*, above; expiration, *e*, between; rhythm, $^{3}/_{4}$. It was understood that the foregoing statements referred solely to respiratory sounds as affected by uniform changes in the chest and excluded localized excavations, although the same principles might be applied to these conditions. Thus respiratory with percussion sounds afforded an absolutely scientific, accurate record of pulmonary conditions and changes. It would be superfluous to dilate upon the value of such records in cases remaining under our own supervision, or for such as we desired to send to other climates and places in the care of other physicians.

Second Day—Thursday, September 1st.

A Case of Dissecting Aneurism of the Thoracic Aorta Rupturing into the Pericardial Sac and Causing Immediate Death.—Dr. Judson Daland, of Philadelphia, read the paper. He said that the rarity and completeness of this lesion, the evidences of perfect reparation of a similar lesion above the former one, and the extraordinary changes in the heart and aortic valves, together with the unusual mode of death, led him to call attention to a case, which he described in detail. The patient was a man, thirty-eight years old. The personal and family histories were unimportant except that he used whiskey moderately. He sought relief from œdema of the legs, headache, and diarrhœa. His symptoms improved under absolute rest, eight ounces of buttermilk every two hours, and Basham's mixture. He gradually resumed a mixed diet, and did not again seek medical aid for four years. During this interval he returned to the use of whiskey, averaging two pints a day. Examination showed marked arterio-capillary fibrosis and considerable increase of hypertrophy of the left heart with a faint systolic murmur. Two years previously he had suddenly experienced complete loss of muscular power without other symptoms. The urine presented a moderate amount of albumin and a few hyaline tube casts. Three months later he complained of excessive muscular weakness and fear of death, accompanied by headache and morning vomiting. In a few weeks he suddenly developed left hydrothorax with excessive frequency and irregularity of breathing, rapid and irregular heart action, and cyanosis, which were relieved by thoracentesis. Five years after the first examination ordinary evidences of cardiac failure showed themselves and he died suddenly in December of the same year, apparently from cardiac failure. The diagnosis was marked arterio-capillary fibrosis, enormous left ventricular hypertrophy and dilatation, with mitral regurgitation and chronic interstitial nephritis alcoholica. The autopsy showed, one-half inch above a recent rupture of the aorta, a linear spot measuring one-half inch in length and parallel to the long diameter of the artery. It communicated directly with the pericardial sac and was the immediate cause of death. There was evidence that the dissecting aneurism extended for an unknown distance into the thoracic aorta.

Clinical Notes on Asthma and its Treatment.—Dr. Beverley Robinson, of New York, read a paper with this title. He said:

"Among the diseases which the practitioner is called upon to treat, none is of greater interest than asthma. This interest is partly due to its etiological obscurity. The cases of so-called nervous asthma in my experience have been infrequent, and I believe that when we are better informed examples of purely functional asthma will be perhaps no longer described. I believe that despite the existing nervous irritability the

asthmatic attack would rarely occur, were there not other discernible cause, which more advanced researches will reveal. Conditions of the blood are often ignored. Malarial toxæmia is frequently present and yet overlooked. It is wisdom to act in accord with its recognition. If there be sudden chill followed by rise of temperature and sweating, and if at the time of the chill and previous to the giving of quinine internally a skilful microscopic blood examination be made, the plasmodium malariæ should be found. For an asthmatic attack of probable malarial causation I advise increasing doses of Fowler's solution of arsenic to its physiological effect; if the bowels are constipated and the liver is inactive, Warburg's extract in five-grain doses three or four times daily; if anæmia be present, quinine, iron, and arsenic in a suitably formulated pill, the following being a favorite with me: One grain of reduced iron, two grains of sulphate or preferably the muriate of quinine, and one-sixtieth to one-thirtieth of a grain of arsenious acid, three times daily after meals. Of course, if the attack be severe, we should employ antispasmodic remedies, and also permit patients to smoke and inhale from a cigarette d'Aspic, of datura tatula, or of simple nitre paper. As a last resort, an inhalation of a small quantity of chloroform or a hypodermic of morphine and atropine may become our only satisfactory help.

"I am in accord with those who find in the constitutional conditions of gout and rheumatism an underlying influence of great power in causing nervous irritability and characteristic appearances of the throat, and when we have a clear history of these affections we may infer many times that the asthmatic attack is of similar origin.

"As to the reflex causes of asthma, when we find in the nose and throat morbid conditions we cannot be satisfied with our care of the patient unless operative interference be undertaken to modify or remove these evidences of disease. While this is true, it should be admitted that several prominent throat specialists have exaggerated the diseased conditions of the throat and nose as causative in producing asthmatic attacks.

"In chronic gastric catarrh, brought on by errors of diet or alcoholic habits, frequent lavage of the stomach and a regulated regimen have afforded great relief in the asthmatic seizures.

"In the consideration of bronchitic cases of asthma with some development of emphysema we are confronted with questions clinically most difficult to decide. When the bronchitis is clearly defined and the secretion slight our main effort should be to stimulate the latter by appropriate means, and here I find small repeated doses of ipecac, tartar emetic, grindelia robusta, chloride of ammonium, and iodide of potassium very useful. When the bronchitis is also evident and yet there is much bronchial secretion, belladonna or atropine must be combined in small or moderate doses with the drugs previously named, or be given with a little camphor and quinine in capsule or tablet form, or, what is often preferable, alone, until their physiological effect is manifest. When the emphysema and bronchitis are clearly defined and when the asthma is also pronounced we must have recourse for temporary results to inhalation of the fumes of the antispasmodic cigarettes, the repeated use of oxygen gas, administration of Hoffman's anodyne, alcohol, hot coffee, capsules of ether or chloroform.

"When in connection with the previous conditions we have evident cardiac distention, we must recur to the use of nitroglycerin or the nitrites, or to a soluble salt of caffeine (salicylate), either by the mouth or hypodermically. Occasionally blood letting by bleeding from the arm, or the use of leeches or wet cups to the chest or epigastrium, will afford more or less lasting relief. Usually, I regret to say, the relief is only temporary, and it is under these circumstances that particular care must be taken in the use of amyl nitrite in inhalations, which seem to occasion further and more intense pulmonary congestion, and thus add another obstacle in front of a right heart already overtaxed.

"One of the most difficult matters to decide is when and how frequently we should give morphine injections hypodermically. I am compelled to counsel great care in its use.

"The question of change of locality is one difficult to solve. Personally, I am inclined to believe, after considerable experience, that the climatic conditions which shall prove best for subacute or chronic bronchitis are also those best suited to the bronchitis when complicated with asthma."

Sanatoria and Special Hospitals for Poor Consumptives and Persons with Slight Means.—Dr. J. M. Anders, of Philadelphia, summed up the more salient points and inferences brought forward in a paper with this title, under two heads: (*a*) Those that show the extent and urgency of the needs presented by the large class of phthisis patients, and the value of special hospitals and sanatoria for their treatment. (*b*) Points bearing upon the discrimination of the cases among the lower class into three groups, and the remedy—an institution with distinctive characteristics—for each.

Under the first head the author stated: (1) That the adduced statistics proved that pulmonary tuberculosis was proportionately far more common and more inauspicious among the lower than among the higher classes. (2) That the almost absolute lack of proper facilities for the poor afflicted with pulmonary tuberculosis, as shown by the tables given, was a most potent factor in maintaining the enormous death rate from this disease. (3) That special hospitals, in which every hygienic detail could be arranged with precision, were superior to separate wards in general hospitals for the treatment of cases of pulmonary phthisis. (4) That the admission to and care of such patients in the wards of general hospitals, with those suffering from other forms of illness, was to be energetically deprecated, owing to the serious danger of transmitting the disease, particularly during the breaking-down period. (5) That the mortality figures showed a reduction of fifty per cent. in consequence of the operation of special hospitals for consumptives (*e.g.*, city of London). (6) That sanatoria near large cities afforded better advantages than the so-called special hospitals in densely populated centres, while climatic sanatoria, if properly situated, officered, and equipped, showed results surpassing those of all other known methods of treatment in the earlier stages of the disease. (7) That sanatoria lessened the mortality rate of phthisis in communities in which they were situated.

Under the second heading the author considered the cases under the following groups: (1) The numerous cases that had progressed to an advanced and practically hopeless stage. These required every comfort such as could be furnished in a healthful urban locality by special hospitals for consumption. (2) Incipient cases among the pauper element—the true wards—of society. For such, sanatoriums conveniently located in close proximity to large municipalities, though with special reference to such factors as purity of atmosphere and protection by natural elevations or woodland from chilly blasts, should be provided. (3) Phthisis pulmonalis among the middle class and working-class, or persons having small means. The members of this group would find themselves compelled to depend principally upon private philanthropy and probably semi-State institutions, and needed institution treatment in the best climates. The

writer saw no reason why the combined sanatorium and climatic treatment should not be attempted, since such an undertaking could be made to be almost self-sustaining.

Infection from the Hands in Phthisis.—Dr. E. L. Baldwin, of Saranac Lake, read a paper with this title. The paper described the results of an examination of the hands of twenty-eight patients by washing their fingers in a sterilized weak alkaline solution. Inoculation of the washings into guinea-pigs was successful in producing tuberculosis from ten out of fifteen patients, mostly in advanced stages of the disease, and many of whom expectorated into handkerchiefs. Out of twenty-four cases in which the centrifugalized washings were examined microscopically for bacilli, six were positive. The author regarded the danger of infection from the hands as small unless it could be shown that the disease was more frequently acquired through the mouth, but urged more general use of cheap destructible handkerchiefs, and frequent ablution, where cuspidors were impracticable.

The Value of Systematic Physical Training in the Prevention and Cure of Pulmonary Tuberculosis.—Dr. E. Fletcher Ingals, of Chicago, in a paper with this title said that the absence of systematic study by physicians and the very meagre literature compelled him to be somewhat dogmatic in his paper. One of the most common observations made by medical men, he said, was that the long, narrow, flat-chested individual was the one liable to the development of tuberculosis; and that in patients presenting this form of chest the chances for recovery were reduced to a minimum. This observation he considered sufficient to suggest that systematic physical training in aiding the development of the respiratory muscles, thoracic walls, and pulmonary capacity would be of great service in preventing tuberculosis and in curing its early stages. Collapsed air cells, he said, furnished a most favorable nidus for the development of tuberculosis; therefore, for the prevention of the disease, measures should be adopted to expand the lungs and bring the air cells into the best possible working condition. He thought it probable that in most cases there was an early tuberculous localized anæmia, diminishing the nutrition of the parts and making them more susceptible to the tubercle bacilli and their toxins. Of the large percentage of the human family said to be affected by tuberculosis (eighty per cent.), the majority recovered, even when the disease affected the lungs, it not proving fatal in more than twelve per cent. He stated that in most of those who recovered the disease had made but little progress, and that it was only at autopsy after death from other causes that its presence was detected, in view of which it was the physician's duty to recommend measures likely to strengthen the resisting power of the lungs. The beneficial influence of a high altitude he considered probably due to the increased distention of the air vessels, and that as a means of prophylaxis the first measure should be to teach the patient to breathe deeply. Careful physical training, he said, was of the greatest importance, it being possible for the long, narrow, flat-chested to increase the expansion of the chest two or three inches, improve the form, and increase the circumference. He believed it possible by physical development to check the process of tuberculosis when it had become established in the chest and to promote recovery.

A Single Test of the Virulence of Sputum Kept Many Months.—Dr. Irwin H. Hance, of Lakewood, N. J., referred to the virulence of the tubercle bacilli as demonstrated by the clinical pictures of pulmonary tuberculosis and the resistance of the germs of the disease. He described the experiment of Stone in 1891, in which the tubercle bacilli retained their form and virulence for three years. Similar experiments made by himself were described, with results so different as to justify the conclusion that the tubercle bacilli were no longer viable. The following queries were presented: Whether sputum which remained in a liquid state for a long time developed toxins inimical to the life of the tubercle bacilli; whether the result would not have been different had the sputum been more virulent in its character, and taken from a case of acute active tuberculosis; whether if sputum dried more rapidly it retained its virulence longer. All such queries he believed could be answered only by further experimental work.

Some Statistics of Orrhotherapy in Tuberculosis.—Dr. J. E. Stubbert, of Liberty, N. Y., gave a short history of experiments in antitubercle serum, dating back as far as 1890. He referred to the work of Bernheim, Bertini, Coupard, St. Hilaire, Haricourt, de Schweinitz, Maragliano, and Babes. The theory of action and the method of preparation were given. The action of the tubercle serum was not a germicidal one, but it attacked the disease indirectly by destroying the pabulum upon which the germ throve. He showed that de Schweinitz had succeeded in producing a partial immunity or an artificial resistance in guinea-pigs. Antitoxic serum developed from horses was more effective than that from other animals. He believed that the amount of clinical evidence was not sufficient to justify credence in the good results claimed for different serums. He gave the results of eighty-two cases in all stages of the disease treated with serum. The use of the serum was indicated only in incipient cases, although in the advanced stage temporary reduction of temperature had been obtained in a few instances. The use of the serum was, generally speaking, contraindicated in far-advanced cases showing signs of softening; in incipient cases with marked hereditary taint; in patients whose corpulence and vital capacity were much below the normal standard and who showed rapid heart action; and in cases showing mixed infection. He had used the antistreptococcic serum to reduce cases of mixed infection to those of simple, that the antitubercle serum might act more freely. His experience in this, however, had been insufficient for definite conclusions. He asserted that no danger attended the injection of the serum, and claimed as an advantage the absence of interference with digestion. In cases in which the bacilli had disappeared, this disappearance occurred while the sputum was still present. To the present time there had been no relapses among patients declared cured, even in patients returned to former environments. The writer did not declare himself a thorough advocate of orrhotherapy, adhering still to climatic, hygienic, and dietetic treatment in all cases, but believed that sufficiently good results had been obtained to justify further research in the same direction, better pursued in sanatoriums. He gave the following table of cases treated with serum: Number of cases treated, 82; expectoration decreased in 82 per cent.; appetite improved in 81 per cent.; weight gained in 78 per cent.; physical signs improved in 82 per cent.; temperature decreased in 49 per cent.; bacilli disappeared in 13 per cent.; apparent immunity established in 21 per cent.; bacilli decreased in 35 per cent.; cough decreased in 79 per cent.; generally improved, 85 per cent.

Pretuberculous Stage of Phthisis, or the Condition which Antedates Tuberculous Development, and Some Aid to its Diagnosis.—Dr. Henry P. Loomis, in a paper with this title, described a condition precedent to the initial development of tuberculosis, which should be called the pretuberculous stage, the signs of which were to be looked for in corpulence of the individual—*i.e.*, the relation of the weight ex-

pressed in pounds to the height expressed in feet; in the conformation of the chest, chest measurements, and vital capacity; in the constitutional condition—that is, whether or not there be a chloro-anæmia; in digestive disturbances; and in the character of the pulse. Progressive loss of weight without apparent cause was an indication of this pretuberculous stage. Out of forty cases of which very complete records had been kept, the writer had noted this characteristic loss of weight in fifty per cent. Vital capacity did not indicate anything special, but taken in connection with the height was an important aid. The normal vital capacity of a man of five feet eight inches was two hundred and thirty cubic inches. The relation between height and vital capacity for the normally healthy man was one to three; that of a woman, two to six. The writer believed chloro-anæmia to be one of the most pronounced symptoms of the pretuberculous stage, especially when taken in connection with loss of weight without cause and poor chest development. In these cases the hæmoglobin was diminished out of all proportion to the loss of the number of red corpuscles. There was a relative feebleness of arterial pressure in the pretuberculous stage.

Application of the X-Rays in the Diagnosis of Tuberculosis.—Dr. Francis H. Williams, of Boston, presented a general statement of the medical applications of the *x*-rays. One of its most useful applications, he said, was for diseases in or contiguous to the thoracic cavity, and in that connection he considered the subject. Diagrams were shown, which were made by transferring outlines, which the author while looking through the fluoroscope had drawn on the skin of patients, to a skeleton outline copied from one of Luschka's plates. The position of the diaphragm and heart in full inspiration was shown, and the position in expiration. In health it was seen that the diaphragm had a wide excursion between the extremes of respiration and that the heart also changed its place. The difference in the brightness of the lung area between expiration and full inspiration might be perceived in the fluoroscope. This showed how conditions involving congestion, as in early tuberculosis or in some form of cardiac disease, might alter the appearances in the fluoroscope. The diagram of health was used as a key to the others and comparisons were made with it and the diagrams of the various diseases. Thoracic aneurisms might now, he said, be recognized with certainty; further symptoms due to aneurism were sometimes ascribed to other diseases, and an *x*-ray examination was required to establish the diagnosis. Diagrams were exhibited, showing the excursions of the diaphragm, the position of the heart, and the appearances in emphysema, pleurisy, pneumonia, pulmonary tuberculosis, pneumohydrothorax, and pneumothorax. The author was convinced that as the *x*-ray examinations in pulmonary tuberculosis came more into use, the presence of the disease would be recognized earlier. A number of cases were cited to illustrate some of the ways in which *x*-ray examinations might be useful in pulmonary tuberculosis.

Officers.—The following are the newly elected officers of the association for 1899: *President*, Dr. Beverley Robinson, New York; *Vice-Presidents*, Drs. James A. Hart, Colorado Springs, and R. C. Newton, Montclair, N. J.; *Secretary and Treasurer*, Dr. Guy Hinsdale, Philadelphia; *Council*, Drs. Isaac Hull Platt, Lakewood; S. C. Solly, Colorado Springs: James B. Walker, Philadelphia; E. Fletcher Ingals, Chicago; and E. O. Otis, Boston; *Delegate to the Executive Committee of the Congress of American Physicians and Surgeons*, Dr. F. I. Knight, Boston; *Alternate*, Dr. Roland G. Curtin, Philadelphia.

The association adjourned to meet in New York City in May, 1899.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

A HEAT WAVE—A QUARTER'S MORTALITY—VACCINATION ACT—HOSPITAL STUDENTS AND MIDWIFERY—REPORT OF ASYLUMS BOARD—JENNER INSTITUTE OF PREVENTIVE MEDICINE—PHARMACEUTICAL CONFERENCE—A SAD MISTAKE—GOLDER'S HILL—DEATHS.

London, August 19, 1898.

The weather has held to its right as the one topic of Englishmen. We have had a hot wave for a few days; not such as, perhaps, New York would consider extreme, but one to prostrate Londoners. Anything over 80° F. is to us hot, and when the thermometer approaches 90° F. we give up. On Tuesday we had a thunderstorm with heavy rain in the small hours of the morning, and got up in a much cooler atmosphere. The day, indeed, gave us a fall of four degrees. There were still, however, many cases of sunstroke and collapse from the heat; as many as two hundred were treated in three days at the hospitals. Thunderstorms have also prevailed in the provinces, and the heavy rains have caused great damage to the corn crops. Doctors are busy with diarrhœa and various summer diseases, as well as the more sudden effects of heat. The meteorologists report no signs of a break-up at present, so we may anticipate a warm autumn.

The registrar-general's report for the quarter ending June 30th has appeared, and shows an annual death rate of 16.2 per 1,000 of the estimated population, which is 1.7 below the rate in the corresponding quarters of the preceding ten years. This is lower, with one exception, than the second quarter of any year recorded.

In the urban population, estimated at 21,500,000, the rate of mortality was 16.6 per 1,000. In the rural population of nearly 10,000,000, the rate was 15.4. These rates are below the corresponding quarters for ten years by 1.9 and 1.3 respectively. The mortality from the chief zymotic diseases was 0.20 below the average of the decennium. The rate of infant mortality, *i.e.*, the proportion of deaths of those under one year to the registered births was 123 per 1,000 for England and Wales; in London it was 127, and in the 32 large towns it reached 136.

The vaccination act has received the royal assent, and, though it will not come into full working until January 1st, the conscience clause is to operate immediately, so that the voluntary plan is now law. Surprise is expressed at the support given in the house of commons by the medical members, and many are asserting that these gentlemen by no means represent the opinions of the profession. It seems a great pity that such a question should be in any way regarded as a party one, and the way in which many Conservatives refused to follow the government in this matter is deserving of all praise. In the upper house Lord Lister's speech was listened to with great respect, and though he accepted the act rather than delay legislation, he did so on the intimation that a revaccination bill was to be proposed next year. This it was, he said, which led him "to acquiesce in what he regarded as a tremendous experiment."

The home secretary, in reply to questions in the house of commons, has promised to make a full inquiry as to the supply of hospital students to attend poor women in their confinements. It was insinuated that the hospitals sent students who had never seen a case to take charge, without any intimation that they were not qualified, although the General Medical Council did not permit private practitioners to act

thus. I believe the questions were misleading, and though students go from the hospitals qualified help is always ready, and in first cases there is close superintendence. We shall see what the council has to reply to the home secretary, who was also desired to ask whether members of the council were not themselves connected with hospitals which supplied students, and whether the privy council would compel the council to enforce its own regulations.

The report of the asylums' board contains many important facts. The admissions in 1897 were 58.5 per cent. of the cases notified, which is in excess of previous years. Out of 15,115 scarlet-fever cases the mortality was 4.06 per cent., as against 4.2 in 1896. The fatality rate of diphtheria was the lowest reported, 17.4 per cent.; enteric-fever mortality was 18.7, an increase of 2.5 over the previous year. Out of 70 cases of small-pox admitted, 13 died.

There are generally cases of erroneous diagnosis in these reports, and they do not seem to diminish. No less than 5.3 per cent. of the cases admitted had been erroneously diagnosed. This is particularly noticeable in small-pox. Out of 121 cases sent for this disease, 52 were not such. Happily they were intercepted at the wharves and so did not reach the ships. It looks as if the appearances of small-pox were not at all familiar in general practice. With the advent of voluntary vaccination, practitioners will need to be more careful.

You may remember that in 1896, the centenary of Jenner's great discovery, a movement was started for commemorating the event by inaugurating a work of national utility in honor of Jenner. The jubilee and Lord Lister's illness combined to postpone decisive action, though it was proposed to raise a subscription for the purpose in connection with the Institute of Preventive Medicine, which is established to carry on researches in the field in which Jenner was a pioneer. It is now determined that the institute shall in the future be named the "Jenner Institute of Preventive Medicine," and thoroughly to equip it as a national memorial a sum of £100,000 is proposed to be raised. About £8,000 has been promised by four or five leading men, and it is hoped that the whole sum will be forthcoming.

The Pharmaceutical Conference met at Belfast, August 9th, 10th, and 11th, and had a warm reception from the corporation and Queens College. Dr. Symes was president, and in his address urged the necessity of education to advance pharmacy, and showed that the conference encouraged men to devote themselves to the higher branches of their calling, and keep all posted in the advances that are constantly being made. The new "Pharmacopœia," though adversely criticised by many pharmacists, he thought largely represented the advances made since the last issue; but he regretted that there were no pharmacists on the committee, and that the manner of publication had led to uncertainty and inconvenience at first. Interesting papers followed and were continued the next day. The third day was almost entirely given up to the "Pharmacopœia," and useful papers and discussions on the new authority could not but prove valuable. There was plenty of sound criticism, though it was generally admitted that the new issue was an advance on the last.

At one of our children's hospitals a painful mistake has been made in returning the body of a wrong child for burial. The mistake was not discovered until the body had been in the supposed parents' house four days. It is not so long since the similar error in one of our asylums board's institutions occurred. It seems that some additional precautions are required to prevent such unfortunate mistakes, which cannot fail to give pain to those concerned and produce a very unfavorable impression of the management.

The beautiful estate of Golder's Hill, Hampstead, which is identified with the late Sir Spencer Wells, has been saved from the speculating builder, and will be handed over to the county council for the benefit of the public.

The first English funeral at Wei-Hai-Wei was that of a distinguished medical officer, Fleet-Surgeon Charles A. Macaulay, who died on June 15th. He entered the navy in 1875, saw a good deal of service in Egypt, for which he held the medal with Alexandria and Tel-el-Kebir clasps. He also received the Medjidie, fourth class, and the Khedive's bronze star. He attained the rank of fleet surgeon in 1896.

Mr. J. L. Milton, M.R.C.S., died on the 3d inst. He was for many years surgeon to that unfortunate institution, St. John's Hospital for Skin Diseases, and took part in its management or mismanagement. He wrote some brochures on the skin, but his chief literary effort was extraprofessional—"The Stream of History."

THE NEW ARMY TREATMENT OF TYPHOID FEVER.

To the Editor of the Medical Record.

Sir: The new army treatment of typhoid fever by recommending thousand-mile railroad jaunts is so unique that I think the profession should be given the details of such cases. We know that some diseases are benefited by travel, but trips from, say, Long Island to Michigan or Chickamauga to New York, have not heretofore been tried upon a large scale for enteric fever. I went through the wards of the Bellevue and the Presbyterian Hospitals on September 5th, and selected the following cases, in which the diagnosis of typhoid fever has been established in each instance by the presence of the Widal reaction, and the symptoms of rose rash, enlarged spleen, a temperature exceeding 104° or 105° F., a dry brown tongue, and typical facies —symptoms which (as we are in the habit of teaching second-year medical students) are rarely seen earlier than the second week of the disease. All cases presenting the least doubt I carefully excluded, and most of those here reported were from their history and appearance without question well advanced upon admission in the second and third week of the disease. I might present a much larger list of cases of malarial fever received at these hospitals in an equally serious condition (one patient who had pernicious malaria with purpura has just died within three or four days of shipment), but I prefer to focus the report upon typhoid fever. It should be observed that Camp Wikoff is about four hours by rail from New York, that at the camp the distance from the tents to the station is from one to two or more miles over one of the dustiest roads ever seen, and, finally, that the Red Cross relief station at Long Island City picks up the exhausted soldiers from the trains as they are dumped from the cars, succors them, and distributes them in ambulances to the overcrowded hospitals of New York. In each of the following cases the plasmodium malariæ was absent and the Widal reaction was strong:

Presbyterian Hospital.

1. R. P. O'L.—Twelfth United States infantry; received August 30th; temperature on admission, 105° F.; pulse, 128; shipped direct from quarters at Camp Wikoff to New York on one month furlough.

2. William D.—Sixth United States cavalry; received September 2d; temperature on admission, 104.8° F.; well-marked rose rash, etc.; shipped from Camp Wikoff for Philadelphia on thirty days furlough; rode his horse between camp and train, between two

and three miles; nearly fell off his horse before arrival; asked why he didn't go to the camp hospital, said there were too many dying there; food on train, biscuits.

3. O. L.—Thirty-third Michigan; admitted September 2d; temperature on admission, 105° F.; shipped from quarters at Camp Wikoff for Michigan with his regiment; ate bananas on the train.

4. Charles H.—Thirty-fourth Michigan; admitted September 2d; temperature two days later, 106° F.; shipped from Camp Wikoff with his regiment for Michigan; picked up at Long Island City.

5. Louis E.—Thirty-fourth Michigan; admitted September 4th; temperature on admission, 104.2° F.; abundant rose rash, etc.; shipped from the camp with his regiment for Michigan; picked up in Long Island City; had refused to go to the camp hospital.

6. A. M.—Thirty-fourth Michigan; admitted September 3d; temperature on admission, 104.8° F.; had been ill six weeks; had refused to go to the camp hospital; shipped from quarters at Camp Wikoff with his regiment for Michigan.

7. H. S.—Tenth United States infantry; received September 2d; temperature on admission, 104.5° F.; pulse, 108; had refused to go to the camp hospital; was shipped from his quarters at Camp Wikoff for Virginia on furlough; walked part of the way from camp to train.

8. R.—Thirty-third Michigan; admitted September 2d; temperature on admission, 105.5° F.; pulse, 108; delirious.

9. C. L.—Twelfth New York; received August 27th; temperature on admission, 102.6° F.; abundant rose rash; shipped from Chickamauga to New York.

10. Norman P.—Thirty-fourth Michigan; received September 2d; temperature on admission, 105.5° F.; had been on "sick call" in the general camp and had been given medicine; shipped from quarters at Camp Wikoff with his regiment for Michigan; picked up in Long Island City; referring to railroad trip, said: "That ride just done me up."

11. W. Van F.—Seventy-first New York; admitted August 20th; temperature on admission, 103.5° F.; pulse, 112; respirations, 30; had refused to enter camp hospital; shipped direct from quarters for New York; said a lady gave him some milk on the train; walked into the Presbyterian Hospital.

12. William H. F.—Seventy-first New York; admitted September 2d; temperature on admission, 104.5° F.; shipped from quarters at Camp Wikoff to New York.

13. George B.—Twelfth New York; admitted August 27th; temperature on admission, 104° F.; shipped from Chickamauga to New York, having been ten weeks in the camp hospital.

14. William B.—Admitted August 27th; temperature on admission, 102.3° F.; sent from Chickamauga to New York on one month furlough; in third or fourth week of disease, unquestionably; said he had been one week in the regular hospital at Chickamauga.

Bellevue.

15. James E.—Tenth United States infantry; admitted August 31st; temperature on admission, 105° F.; shipped from quarters at Camp Wikoff for Rochester on ten days furlough; walked from camp to train about two miles; fed before starting; no food on train.

16. C. B.—Thirty-third Michigan; admitted August 31st; temperature on admission, 105.2° F.; abundant rose rash; shipped direct from quarters at Camp Wikoff for Michigan on thirty days furlough; walked a mile to the train; had no food on the train.

17. George M. D.—Ninth New York; admitted August 24th; temperature on admission, 105° F.; abundant rose rash, etc.; shipped from Chickamauga to New York on thirty days furlough; food on train mainly steak and eggs.

It will be noticed that not a single case from Camp Wikoff had been in hospital there, all the patients having come from "quarters" or the general camps, where they had been mingling freely with the well men, and using latrines distributed all over Montauk Point, the patients being from so many different regiments. It follows, therefore, that the entire camp is hopelessly infected. During a personal visit to Camp Wikoff on September 2d, in company with a very well-known New York physician, we saw standing outside of a pavillion, which the army surgeons told me contained many of their worst cases of typhoid fever, a large tin ash barrel, in which I both saw and smelled a mass of typical "pea-soup" dejecta, fully six inches in depth, wholly uncovered except by flies. On my return a couple of hours later it was still there, still uncovered, still full of active flies. Meals were being served a few rods distant. After talking with the nurses and surgeons in the fever hospital I was convinced that the methods of disinfection there were obsolete, inefficient, and farcical. I could give many other examples of reckless disregard of elementary hygiene.

A patient having six or a dozen diarrhœal enteric stools a day, using the ordinary closet of a railroad car travelling, say, thirty miles an hour, distributes a trail of fæces along the track, to be washed by the first rain into neighboring streams, and sets a rather bad example of hygiene to the country at large.

The universal infection of our home camps in time of peace with one of the most easily preventable of filth diseases is a disgrace to the men and methods responsible for it, and the wholesale shipment of advanced cases of typhoid fever by rail to be picked up off our streets as they drop is a species of damnable inhumanity which the medical profession of this country will neither forget nor forgive.

W. Gilman Thompson, M.D.

New York, September 6, 1898.

Therapeutic Hints.

Retropharyngeal Abscess.—Henry Koplik divides these into distinct sets of cases: (1) the acute—(*a*) pointing wholly internally, (*b*) pointing internally and externally, (*c*) forming chiefly an external tumor; (2) chronic tuberculous abscess; (3) septic abscess, resulting from an infection or accompanying the exanthemata, which burrow and burst into the mediastinal tissues or important structures in the neck and may cause death. An acute idiopathic retropharyngeal abscess is an impossibility. Stomatitis, the anginas complicating the exanthemata, affections of the structures about the tonsils and nasal cavities in grippe, may be considered as causative factors. The writer has isolated four distinct species of streptococci in the pus from these abscesses. Diagnosis is not difficult, but there may be a misleading enlargement of the lymph nodes from adenitis. Severe pressure should be avoided in the examination, as there is danger of bursting the abscess. When the incision is made from within, an assistant must be ready to depress the patient's head if necessary to prevent the entrance of pus into the trachea. Willy Meyer believes that the incision of retropharyngeal abscess from the side of the neck is greatly superior to the old method of a direct pharyngeal incision through the mouth. It allows narcosis, with its advantages, and permits antiseptic treatment, proper irrigation, and drainage. It is often possible by this operation to extract a foreign body which has been arrested behind the cricoid cartilage. The prognosis of tuberculous retropharyngeal abscess will be materially bene-

fited by the antiseptic incision. The author favors Burckhardt's incision. The patient should be in Rose's posture.—*American Medical and Surgical Bulletin*, April 4, 1898.

Enuresis in Children.—Dr. Harold Williams divides all cases of enuresis in children into two classes: (1) Those of local origin, such as malformations, etc. (2) Those of functional origin, due to seven factors: (*a*) undue excitability of spinal centres; (*b*) anæmia; (*c*) reflex irritation; (*d*) direct volition—cold, fear of the dark, wilfulness; (*e*) auto-suggestion—the child, having wet the bed, has been scolded and punished, and the habit assumes an immense and exaggerated importance to his mind; (*f*) retarded mental development; (*g*) enfeeblement of the will, which may be due to neurasthenia or hysteria.—*Boston Medical and Surgical Journal.*

New Instruments.

A BRIDLE FOR THE CONTROL OF MOUTH BREATHING.

By NORBURNE B. JENKINS, M.D.,

KNOXVILLE, TENN.

Mouth breathing is probably coexistent with fifty per cent. of the diseases affecting the larynx or pharynx, and possibly with a greater per cent. of catarrhal affections of the nose and middle ear. It plays a

Fig. 1.

more important part in diseases of the respiratory, olfactory, auditory, and gustatory organs than casually might be supposed.

It may be observed that patients afflicted with adenoids, stenoses, hypertrophied tonsils and turbinated bodies, ecchondroses, nasal polypi, and with other obstructions of the nasopharyngeal air passages, do not, during sleep, respire through the nose. In most cases a discontinuation of nasal respiration is an enforced alternative, there being present some form of obstruction. It may be due to a habit of breathing, resulting from some former temporary encroachment on the air passages of the nose and pharynx. On the other hand, such obstructions often appear as the results of the non-use of the nose in respiration.

The accompaning illustrations show a bridle, which from successful experience is offered as a corrective of the above-mentioned injurious habit.

This device is made of four strips of cotton webbing, one inch wide, and commercially known as "stay binding." It has but one fastening, which

Fig. 2.

may be a button, a safety pin, a buckle, or a knot. The bridle should be adjusted to the head of the patient by the use of pins (see the illustrations), and then removed and stitched as soon as fitted. The cost of this bridle is five cents. It can be fitted in

Fig. 3.

two minutes. The fit should be sufficiently loose for comfort. After a few nights' use it may be tightened if necessary.

The primary result of the use of this contrivance is a noticeable change in the cleanliness of the mouth on awakening. This is largely due to the absence of

the products of micro-organisms in the saliva. When lodged in the secretions of the sleeper's open mouth they find favorable conditions for speedy propagation. In high dry altitudes the results are less marked, because of the freedom of such atmospheres from all forms of bacteria.

In nasal catarrh (provided there is no sinus complication) a perceptible decrease of the secretion will speedily follow the use of the bridle.

The hypertrophied tonsil frequently resumes its normal condition, and adenoids occasionally disappear after the continuous use of this bridle for a few months.

Catarrh of the middle ear is of frequent occurrence in mouth breathers, and in many instances may be permanently relieved by the use of the bridle in connection with the customary treatment.

Morbid conditions of the pharynx and larynx are always benefited by a resumption of nasal respiration.

All such obstructions as enchondroses, polypi, deviating septa, exostoses, etc., claim the attention of the surgeon, and after his work with the knife the ordinary nasal detergents should be used for a few days prior to the wearing of the bridle. The metal dilators of Dr. Lenox Brown, in such cases as they are recommended for, will greatly facilitate the acceptance of this mechanism and the return to nose breathing.

A mild carbolized solution of cocaine injected with an atomizer into the nasal cavities before retiring will increase their calibre, and may be used with good effect by the patient while becoming used to the bridle.

As a prophylactic measure against the contraction of pneumonia, bronchitis, and other respiratory diseases, which attack the great masses who sleep in cold and damp bedrooms, enforced nasal respiration with the use of the bridle should prove valuable. No better demonstration of the injurious effects of an improper moistening and warming of the inspired air can be made than the study of exaggerated cases of hare-lip and cleft palate, which usually in early infancy contract some fatal form of respiratory disease.

The cosmetic effect of nasal respiration is not to be overlooked. In childhood the protruding jaw, the thick lip, the atrophied nose, together with other facial deformities, can in many cases be relieved or prevented by the timely use of this bridle.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending September 3, 1898:

	Cases.	Deaths.
Tuberculosis	98	140
Typhoid fever	181	24
Scarlet fever	55	5
Measles	38	4
Diphtheria	90	24
Chicken-pox	2	0
Cerebro-spinal meningitis	0	3
Laryngeal diphtheria (croup)	7	4

A Whiff of Tobacco, and its Unpleasant Suggestion.—We do not want to rail at tobacco, but just to draw a little moral from a whiff of smoke. Go where one will, the nose, the eyes, and even the throat and bronchial tubes are assailed by smoke, that is, by a cloud of particles, every one of which has come direct out of some one else's mouth. It is not a nice idea, but let us see what else it teaches. The fumes do but make visible what is happening all the day, whether we smoke or not. Each of the tiny particles of carbon or condensed vapor, which in their millions make up a wreath of smoke, does but indicate the track taken by a corresponding particle of expired air, which, if it can carry the visible carbon, can still more easily carry the invisible microbe. Thus a whiff of smoke entering our nostrils and penetrating our lungs does but show the course which might be taken just as easily by a swarm of microbes, and serves to demonstrate one at least of the ways in which a crowded life passed in close community with our fellows leads to mischief. The passage of a whiff of smoke from mouth to mouth does, in fact, but illustrate the mode in which the well-recognized evils of rebreathing expired air are produced. It is not the air but what the air carries with it that does the harm. What is illustrated by tobacco smoke is sometimes proved in another way. In the bright sunbeams motes are said to dance, and by careful watching one may see not only how numerous these motes are, but of what nasty stuff they are not infrequently composed. The wheezy flower seller coughing over his tray of violets, the loud-voiced hawker shouting over his barrow of strawberries, the sniffling child sneezing at the street corner, the panting person who will shake out his handkerchief in the 'bus before using it, even polite people talking to each other, are all doing things which on a dull day seem innocuous enough. Let the sun shine, however, and the telltale sunbeams soon display the showers of saliva and the crowds of dust which are thus scattered in the air and can almost be traced from mouth to mouth. This is æsthetically abominable, but in the vast majority of cases probably does no harm. Here and there, however, these particles come from people who are diseased, and carry diseases to those who are healthy. The rebreathing of expired air is certainly one cause of disease, especially to those who live in towns and in close dwellings; and how real is the risk, and how readily the passage of solid particles from man to man and from mouth to mouth is accomplished, is made manifest every time a whiff of tobacco makes us cough.—*The Hospital.*

Bergmann's Views on Aseptic Methods.—It is now about a year since Professor Seidel, chief surgeon of the Brunswick Hospital, committed suicide under sad circumstances, which gave rise to much comment in the medical world. It became known that Seidel's assistants, dissatisfied with his methods, had addressed a written complaint to the Brunswick ministry, in which they charged him with neglecting antiseptic and aseptic precautions, and especially with having caused the death of a patient by operating with an imperfectly healed furuncle on his finger. On receiving this letter the Brunswick ministry sent for Professor Seidel, informed him of the charges made by his assistants, and said that an inquiry would at once be instituted, which they hoped would entirely clear him; but in the mean time they had decided to suspend him from his functions temporarily. Professor Seidel, who, like many brilliant and hard worked surgeons, was of a nervous and excitable temperament, committed suicide the next day, leaving behind him letters in which he said that, though he was innocent, the suspension from his office was a disgrace which he could not survive, and imploring his family and friends to clear his name. This duty was undertaken by his two brothers, who submitted the case to Professor von Bergmann, of Berlin, as the president of the German Surgical Society, and published his reply, in which he vehemently defended

Professor Seidel and condemned the behavior of the assistants. Thereupon the brothers published other letters and papers bearing on the subject, and accused the assistants of having caused the death of Professor Seidel by underhand and undeserved denunciations. A lawsuit for libel followed, which after occupying several days, terminated in a verdict for the brothers of Professor Seidel, who, the court found, had acted not improperly in the defence of his interests and good name. The chief interest of the lawsuit from a medical point of view was undoubtedly the evidence of Professor von Bergmann, which he gave in favor of the late Professor Seidel and against the assistants with such vehemence that the judge intervened more than once, warning him to beware of using injurious expressions. Bergmann said it was his decided conviction that the problems of asepsis and antisepsis in surgery were as yet by no means scientifically solved, that the most distinguished surgeons were very much at variance on the subject. He quoted the memorable "glove controversy" of this year's Surgical Congress, which showed that one and the same method was considered by some authorities a decided improvement in asepsis, and by others extremely dangerous; so that it was absurd to denounce a surgeon for not observing the precautions of certain modern methods.—*British Medical Journal.*

Alcohol in Cow's Milk.—H. Weller ("Forschungen über Lebensmittel," 1897) found positive evidence of alcohol, to the extent of 0.96 per cent., in the milk from a large dairy attached to an important distillery, where the cows were fed on distillery slops, containing 5.9 per cent. of alcohol. This milk was stronger in alcohol than most beers, but in what quantities it was given was not stated. The milk examined was perfectly fresh, free from acidity, and in other respects normal, having a specific gravity of 1.0335, with total solids of 3.37 per cent., of which 3.79 was fat.

Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the Marine Hospital service during the week ending September 3, 1898:

SMALL-POX—FOREIGN.

		Cases.	Deaths.
Belgium, Antwerp	July 31st to August 6th	1	2
Ghent	August 6th to 13th	..	1
Brazil, Rio de Janeiro	July 8th to 15th	4	
Rio de Janeiro	July 15th to 23d	1	
India, Calcutta	July 2d to 9th	..	1
Madras	July 16th to 22d	..	1
Norway, Christiania	July 31st to August 6th	1	
Christiania	August 6th to 13th	3	
Russia, Moscow	July 23d to 30th	2	2
Moscow	July 30th to August 6th	83	7
Odessa	July 31st to August 6th	4	2
Odessa	August 4th to 13th	3	1
St. Petersburg	July 31st to August 6th	4	1
Warsaw	July 31st to August 6th	..	6

YELLOW FEVER—UNITED STATES.

Louisiana, Franklin	August 2nd to September 2d	2
Mississippi, Orwood	August 26th	2
Orwood	August 31st	10
Orwood	September 2d	9
Waterford,*	September 2d	1

* Five miles east in country.

YELLOW FEVER—FOREIGN.

Brazil, Rio de Janeiro	July 8th to 15th	22	15
Rio de Janeiro	July 15th to 22d	13	13
Jamaica, Kingston	August 10th	1*	
Mexico, Tampico	August 15th to 20th	..	25
Vera Cruz	August 15th to 19th	3	1
San Salvador, San Salvador	July 23d to 31st	12	3
San Salvador	August 1st to 7th	9	3

* On s.s. *Darien* from Colon for Pensacola, Fla.

CHOLERA.

India, Bombay	July 19th to 26th	..	4
Calcutta	July 2d to 9th	..	2
Calcutta	July 9th to 16th	..	6

PLAGUE.

China, Hong Kong	June 25th to July 2d	10	11
Hong Kong	July 2d to 9th	2	4
Hong Kong	July 9th to 16th	1	2
India, Bombay	July 19th to 26th	..	69
Calcutta	July 2d to 9th	..	10

The Atmosphere of London.—A writer in *The Daily Telegraph* says that only by degrees are the marvellous qualities of London atmosphere becoming known. No city in the world can boast such a peculiar aerial composition as that which the inhabitants of the metropolis have served to them daily and nightly without money and without price, for neither the government, county council, nor vestries have yet attempted to tax the highly nutritive air which we breathe. Most people think that our atmosphere consists of practically nothing. Quite a mistake. It is both meat and drink. A paper contributed to the "Transactions of the British Institute of Preventive Medicine" states that even in a suburb the dust particles number 20,000 per cubic centimetre in the open air and 44,000 in a quiet room, while in the city the totals per cubic centimetre were 500,000 when taken from a roof, 300,000 in a court, and about 400,000 in a room. In other words, the air of the square mile is nine hundred per cent. thicker than in the suburbs, which is in accord with the general experience that fogs are both more dense and more frequent over the centre than in the outskirts. But what is especially interesting to learn is that, although dust is the great carrier of micro-organisms, there is only one of these per 38,000,000 atoms of dust. Thus it is calculated that a man could live in the metropolis for seventy years and absorb only 25,000,000 microbes into his system from the air, or about the same number as he drinks in half a pint of unboiled milk. Of course there are other serious objections to dust, but it is something to know that there is only one microbe to many millions of motes.

Books Received.

NASAL OBSTRUCTION. By W. J. Walsham, M.B., C.M. 8vo, 256 pages. Illustrated. William Wood and Company, New York.

OVARIOTOMY AND ABDOMINAL SURGERY. By H. Cripps, F.R.C.S. 8vo, 624 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia. Price, $8.00 net.

INTERNATIONAL CLINICS. Vol. II. Eighth Series, 1898. Edited by Dr. J. Daland, Dr. J. M. Bruce, and Dr. D. W. Finlay. 8vo, 366 pages. Illustrated. J. B. Lippincott Company, Philadelphia

MENTAL DISEASES. By Dr. A. Campbell Clark. 8vo, 484 pages. Illustrated. William Wood and Company, New York.

SYPHILIS AND VENEREAL DISEASES. By Dr. Franz Mračeк. Edited by Dr. L. Bolton Bangs. 8vo, 122 pages. Illustrated. W. B. Saunders, Philadelphia.

MODERN SURGERY. By Dr. J. C. DaCosta. 8vo, 911 pages. Illustrated. W. B. Saunders, Philadelphia. Price, cloth, $4.00; half morocco, $5 00 net.

PHYSICAL DIAGNOSIS. Dr. J. Tyson. 8vo, 278 pages Illustrated. P. Blakiston's Son & Co., Philadelphia. Price, $1.50 net.

THEORY AND PRACTICE OF VACCINATION. By Dr. R. Cory. 8vo, 122 pages. Illustrated. William Wood and Company, New York.

OFFICE TREATMENT OF HEMORRHOIDS, FISTULA, ETC. By Dr. C. B. Kelsey. 8vo, 68 pages. E. R. Pelton, New York. Price, 75 cents net.

LECTURES ON TUMORS. By Dr. J. B Hamilton. Third Edition. 8vo, 143 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia. Price, $1 25 net.

MATERIA MEDICA FOR NURSES. By J. E. Groff, Ph G. 8vo, 235 pages. P. Blakiston's Son & Co., Philadelphia. Price, $1.25 net.

FATTY ILLS. By Dr. E. Cutter and Dr. J. A. Cutter. 8vo, 194 pages. Price, $1.00.

WILLIAM STOKES. By his son, William Stokes. 8vo, 256 pages. Illustrated. Longmans, Green & Co., New York.

SIR BENJAMIN COLLINS BRODIE. By T. Holmes, M.A., F.R.C.S. 8vo, 255 pages. Illustrated. Longmans, Green & Co., New York.

OPERATIVE SURGERY. By Dr. O. Zuckerkandl. Edited by Dr. J. Chalmers DaCosta. 8vo, 395 pages. Illustrated. W. B. Saunders, Philadelphia. Price, $3.00 net.

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Original Articles.

BOTTINI'S OPERATION FOR ENLARGED PROSTATE, WITH REPORT OF FIVE CASES.[1]

By HENRY H. MORTON, M.D.,

LECTURER ON GENITO-URINARY DISEASES IN THE LONG ISLAND COLLEGE HOSPITAL; ATTENDING SURGEON, DEPARTMENT OF CUTANEOUS AND GENITO-URINARY DISEASES, KINGS COUNTY HOSPITAL, AND POLHEMUS MEMORIAL CLINIC.

Of all the conditions requiring surgical interference which the genito-urinary surgeon is called upon to treat, senile hypertrophy of the prostate, which either entirely or partially prevents the emptying of the bladder, is the most perplexing.

And it is perplexing for various reasons. Unlike most of the surgical procedures of to-day, in which the indications for operation are laid down with almost mathematical precision, the operations selected for the relief of the conditions due to an enlarged prostate depend more upon the individual preference or operative habit of the surgeon than upon any rules which are definitely outlined and generally accepted.

Although a number of operations are in use for the relief of this condition, the drawbacks and disadvantages attached to each one make us hesitate a long time before advising an old man with symptoms arising from an enlarged prostate to take the chances of the uncertain results and positive dangers of any of these well-known operative procedures. The danger to life of all the cutting-operations in old men is very considerable.

The simple operation of castration carries with it a mortality of seven or eight per cent., and these are selected cases which do not include the bad operative risks, such as men with pyelitis, abscess of the kidneys, high degree of arterial sclerosis, or extreme general debility and feebleness. If we include these cases in the mortality tables, the death rate runs up to seventeen or eighteen per cent.

The operations of prostatectomy are very much more fatal and are quite out of the question in the cases which appeal to us most strongly for relief—that is, in feeble old men with a high grade of cystitis and attendant uræmic absorption, and upon whom catheterization is difficult, or impossible, from the size to which the prostate has grown.

The palliative operations for drainage are looked upon more as temporary makeshifts, and are chiefly useful in alleviating the cystitis and the necessity for frequent catheterization.

In addition to the danger of shock and later on of septic absorption through the fresh-cut wound which the cutting-operations entail, we must also consider the risk of giving an anæsthetic to an old man, who is very apt to be suffering from chronic bronchitis, who may have surgical kidneys, and who is liable to die subsequently of suppression of urine or ether pneumonia.

In consequence of all these risks attendant upon the operations, it is a general rule of practice in old patients with hypertrophied prostate not to have recourse at once to operation, but simply to keep the bladder free from residual urine by means of the catheter and to treat the cystitis by bladder washing. The use of the catheter is maintained as long as it is practicable, and the general opinion held to-day is that the only indication for operation is impending or actual breakdown in catheter life—that is, when catheterization is difficult or impossible, attended with great pain or hemorrhage, or has to be performed with undue frequency.

In the operation which I desire to speak of to-night all these dangers which I have detailed are to a great extent reduced to a minimum. An anæsthetic is not required, and the danger of a fresh-cut wound, with its blood-vessels and lymphatics severed and gaping, is avoided, because the red-hot blade, as it burns its way through the tissues, chars them, and in this way seals up all the avenues of infection.

From the fact that in most cases of enlarged prostate the obstructing bar at the neck of the bladder can be removed by Bottini's operation, and also on account of the very slight danger to life which the operation entails, I believe it to be justifiable to use it in many cases in which formerly an operation would never have been considered; and we may by its use relieve many an old man who otherwise would be condemned to catheter life, with all its attendant evils and inconveniences, for the rest of his days.

Bottini's operation of burning a channel through the enlarged prostate with a galvano-cautery is by no means a new one, for it has been in use by its originator, Professor Bottini, director of the surgical clinic in Pavia, Italy, for more than twenty years.

Bottini's original operation consisted in burning with the red-hot iron the entire prostatic urethra and charring deeply into the substance of the prostate; but of late years he has abandoned this operation and now uses entirely his later instrument, which simply cuts through the obstructing bar at the neck of the bladder. Freudenberg, of Berlin, has still further modified the instrument in certain details of construction, but the principle is the same. The results of Bottini's operation in removing the obstacle to the free outflow of urine from the bladder are eminently satisfactory in some cases, and in a few other instances the operation appears to be a total failure.

I believe the reason that some cases are successful and others are not depends upon the size of the gland and the form which the obstructing part assumes as it blocks up the outlet from the bladder.

A reference to the illustrations reproduced from plates in the admirable monograph on "The Operative Treatment of Hypertrophied Prostate," by Francis Sedgwick Watson, of Boston, will make this statement more intelligible. In Fig. 1 we have a condition of affairs which is eminently adapted to Bottini's operation. Here the obstruction consists of a narrow bar at the neck of the bladder, creating a dam in front of the post-prostatic pouch. When the bar is severed by Bottini's instrument we have a complete division of the obstruction, and perfect drainage is afforded.

On referring to Fig. 2 it is manifestly evident that Bottini's operation cannot be applied to the condition here presented. The jutting out of the bulging middle lobe would render the introduction of the instrument

[1] Read before the Kings County Medical Society, May 17, 1898.

difficult, and even if it were possible to introduce it we should simply burn a groove in the projecting middle lobe. In order to make the division effective in draining the post-prostatic pouch, it would be necessary to have the groove deep enough to divide the middle lobe into two halves, like a split apple, and Bottini's instrument cannot accomplish this.

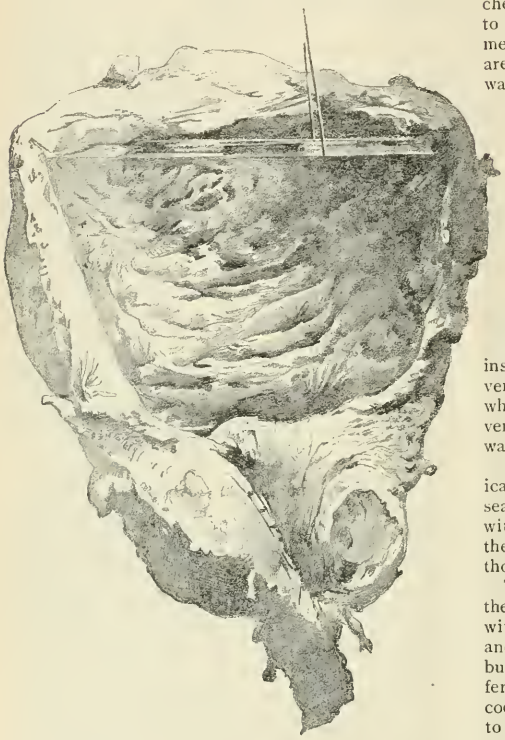

Fig. 1.

It is now pretty well accepted that the operation of castration or orchidectomy, when it does prove successful, succeeds in the cases in which the prostatic over-growth is due to a hypertrophy of its glandular elements—that is, in adenoma of the prostate, which often grows to a great size.

The growths, however, which are due to a hyperplasia of the connective-tissue stroma of the gland, and are found on rectal examination to be of moderate size and very dense, firm, and hard in consistence, do not shrivel and become atrophied after castration.

We may, then—and I offer this merely as a suggestion and not as a positive statement—divide our cases for operation into two groups:

(1) Those with dense, hard prostates, with moderate enlargement occasioned by connective-tissue hyperplasia, in which the obstruction to the urinary outflow is due to a bar at the neck of the bladder, or to the ring-like enlargement of the prostate, surrounding the urethra like a collar. Bottini's operation will relieve these conditions by dividing the obstruction.

(2) The group of cases in which the prostatic enlargement is due to an overgrowth of the glandular elements. The anatomical conformation of the growth renders Bottini's operation ineffective here, and castration or prostatectomy may succeed better in these cases.

The instrument[1] is shaped like a lithotrite, and is provided with a thin platino-iridium blade, which is concealed when the instrument is closed, but is moved backward in a slot by working a wheel at the end of the instrument (Fig. 3). This blade is heated to a dull cherry red by means of the electric current, conducted to it through a cord atttached to the end of the instrument. All parts of the instrument except the blade are prevented from being heated by a stream of cold water which constantly circulates through it.

One reason why this operation has remained for twenty years in comparative obscurity is the great difficulty of getting a battery of sufficient power to heat the cautery blade and keep it at an even heat. This difficulty has now been overcome by means of a specially constructed storage battery, which is small enough to be carried about, and yet furnishes the necessary power to keep the knife at the right temperature.

One great advantage which Bottini's operation possesses over all the other forms of operative procedure is that no general anæsthetic is required. A few drops of a four-per-cent. cocaine solution instilled into the posterior urethra is enough to prevent any very acute pain, and indeed in all the cases which I have operated upon, the patients suffered but very little pain, even while the knife was burning its way through the gland.

Before the operation is begun the presence of vesical calculus should be excluded by means of the searcher or cystoscope; not that a stone will interfere with the operation, but if a stone is in the bladder the symptoms of irritability will not be relieved, even though the obstruction is removed.

The first step in the operation consists in drawing the urine with a catheter and washing the bladder with boric-acid solution. The bladder is then emptied; and it is important that it should be empty while the burning is going on, since fluid in the bladder interferes with the proper heating of the knife. After the cocaine has been instilled and we are waiting for it to take effect, the water stream should be turned on and allowed to flow through the instrument; and during the entire time of the operation we should see that the stream flows constantly and is not interfered with by twisting or compression of the rubber tubing.

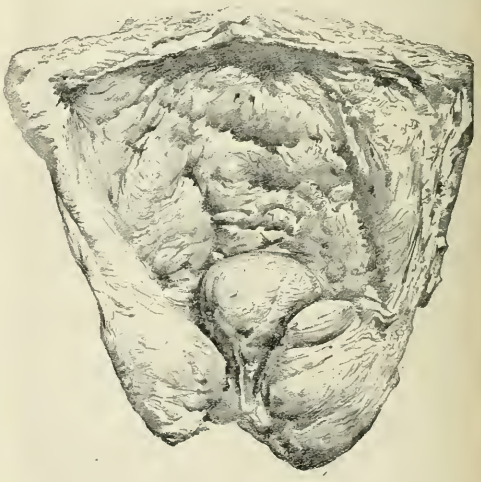

Fig. 2.

The electric current should be then turned on and the knife be brought to a cherry-red heat, and the

[1] Freudenberg's modification of Bottini's instrument and the special storage battery for it are manufactured by the Kny-Scherer Company, New York.

amount of current which is necessary to do this should be noted on the battery rheostat, as a guide for the regulation of the current after the instrument is introduced into the bladder. It is also desirable to test the blade against a piece of moist gauze. The electric current is shut off, and the operator, standing on the right side of the patient, introduces the instrument, the blades of which are closed by a "*tour de maitre*," in the same way that a lithotrite is introduced into the bladder.

Freudenberg has been in the habit of making the upper cut first, but, as the posterior cut is the most important one, I believe it better to make that one first. The instrument, with its beak pointing toward the sacrum, is hooked up firmly against the projecting lobe of the prostate, the current turned on, and a pause of ten to thirty seconds is made for the blade to become hot; then the screw is slowly turned and the thin platinum blade, which is red hot, burns its way through the projecting lobe. We know that the blade is burning its way through the tissue, because in most of the cases we are able to hear a sizzling sound by auscultating over the bladder, and the blade of the instrument is seen to be covered with charred tissue, which adheres closely to it when it is withdrawn.

FIG. 3.—Freudenberg's Modification of Bottini's Incisor.

I consider it of prime importance to make all the cuts slowly, and so that the tissues may not be merely divided but thoroughly charred on either side of the cut and to some little depth; to this end I am in the habit of leaving the current on, so that the knife may continue to retain its heat as it is screwed back, passing again through the furrow burned in the tissues and charring them once more. When the knife is again buried in its slot in the shaft of the instrument, the electric current is turned off.

The next cut which can be made is the anterior. The beak of the instrument is turned so that it points toward the pubes, and the instrument is hooked firmly against the anterior face of the prostate, which is burned through in the same way that the posterior cut is made.

A third or lateral cut may be made, or not, as the necessities of the case demand. The procedure is done in the same way, and whichever lateral lobe of the prostate, either right or left, is most hypertrophied, is burned through.

The length of the cuts will depend, of course, upon the amount of enlargement of the prostate, but in the cases I have operated on, three centimetres for the posterior cut and two centimetres for the anterior and lateral cuts respectively, seemed to answer the purpose. The time consumed was about sixty-five seconds for the three-centimetre cut, and fifty seconds for the two-centimetre cut.

The after-treatment of these cases is very simple. The patient is kept in bed for from two to four days, as there is always a feeling of depression and languor after the operation. There is also a slight rise of temperature, reaching about 100° F. for a day or two. Remedies are to be administered to keep the urine sterile, and if there is much atony of the bladder strychnine is indicated. The patient is allowed to pass urine, and the use of the catheter is undesirable unless retention of urine occurs. This is an accident which is not infrequent, and proceeds from the swelling and congestion of the mucous membrane, which result in consequence of the traumatism and may be sufficient to close up and occlude the urethral orifice.

A slight amount of bleeding, which is only enough to discolor the urine, occurs in all the cases, but in rare instances a considerable amount of hemorrhage may occur. In the cases reported in which this accident happened it was always easily controlled by tying in a large-sized rubber catheter and leaving it for twenty-four hours. If this were not sufficient it might be necessary to perform external urethrotomy and introduce a perineal drain into the bladder and pack gauze tightly around it.

In the cases reported by Freudenberg the existing cystitis began to improve at once, on account of the possibility of keeping the bladder drained and empty.

The question naturally arises whether it is not necessary to pass sounds after the operation, as would be done after an internal urethrotomy, in order to keep the cut surfaces from growing together again. Bottini and Freudenberg expressly state that the passage of sounds is not necessary, and that the outflow of urine is quite enough in itself to force apart the incisions and prevent their union.

In some cases complete division of the obstructing bar is not made and there is no relief of the retention. In such instances the operation must be repeated within a week or two. It is by no means an infrequent occurrence to fail in the first operation and be obliged to repeat it. But when the operation is successful and the patient is relieved from the obstruction, the cure is permanent. Bottini says that in all his experience he has never had a single case which relapsed.[1]

With regard to the tabulated results which have thus far be enpublished, Bottini[2] reports 80 cases operated upon, with 2 deaths. The 80 cases operated upon are divided into two groups: 57 cases were operated upon with the cauterizer, his old instrument, which charred and burned the entire prostatic urethra and which he has now abandond; of these 57 cases 43 were successful (32 cured, 11 improved); and 23 cases were operated upon with the incisor (the instrument above pictured), of which every one was successful.

Freudenberg,[3] of Berlin, has operated upon 13 cases with the following results: one patient died twenty-four days after the operation; another died as the result of the operation from embolic pneumonia. Of the 11 cases remaining 7 had complete retention of urine and had been entirely dependent upon the catheter from two months to five years. After the operation the retention was entirely relieved and the patients were able to pass urine spontaneously, and 4 of them were able to dispense entirely with the catheter; the other 3 had some residual urine and had to pass a catheter occasionally. Four other cases suffered from frequent and painful urination and spasm of the bladder, and they were all markedly benefited by the operation.

In one instance the patient had been urinating sixty

[1] "Die Radical-Behandlung der Ischurie bei Hypertrophie der Prostata," von Prof. Enrico Bottini. Archiv für klinische Chirurgie, Bd. 54, Hft. 1.

[2] Berliner klinische Wochenschrift, April 12, 1897.

[3] New York Medical Journal, February 12, 1898.

or seventy times in twenty-four hours, and after the operation the evacuations dropped to eight or ten times in the twenty-four hours.

Dr. Willy Meyer,[1] of New York, who was the first to use Bottini's instrument in this country, has operated upon five cases with one death. Two of his cases were very much benefited by the operation; one patient in particular, who had used a catheter for four years and had eight to ten ounces of residual urine, was entirely relieved by the operation. The residual urine has completely disappeared and he urinates four or five times during the day and once at night.

My own personal experience with this procedure is confined to five cases which I have operated upon by Bottini's method, and which I beg to report as follows:

Case I.—J. McC——, sixty-two years old, came into the hospital on account of frequent urination at night. Passes water from four to nine times, he says. Examination, prostate one and one-half inches in diameter, hard and dense. Residual urine, one ounce, clear. Patient childish and mentally irresponsible. February 25, 1898.—Bottini's operation. April 24th.—Present condition: Urinates four or five times in day, twice at night (as nearly as can be ascertained). Residual urine, one drachm.

Case II.—C. G——, seventy-five years old. Complains of frequent urination, four or five times at night, every hour during day. Prostate size of horse-chestnut, moderately soft. Residual urine, four ounces and contains pus. February 25, 1898.—Bottini's operation. April 20th.—Present condition: Gets up to urinate two or three times at night; four times through day. Residual urine, four drachms, still turbid.

Case III.—Charles W——, aged fifty-seven years. Has had trouble two years; urination very frequent, fifteen times at night, eight or nine times a day. Urine fetid and purulent. Prostate one and one-half inches in diameter. January 25, 1898.—Bottini's operation. Had dribbling and incontinence of urine for five days after operation, which disappeared. February 25th.—Present condition: General condition improved since operation. Can now hold his water three hours at a time.

Case IV.—J. C——, aged fifty-five years, has had trouble three or four years. Passes water three times at night and every three hours through the day. Prostate one and one-half inches in diameter, hard and dense. Residual urine varies from twelve to sixteen ounces and is clear. March 8, 1898.—Bottini's operation. Two days afterward had an attack of retention of urine and had to be catheterized. A bad attack of cystitis followed, but improved under bladder washing and salol and urotropin internally. April 26th.—Present condition: Cystitis still present but improving. Holds water two hours at night and one and one-half hours through the day. Can throw a fair-sized stream and with a good degree of force. Residual urine, one ounce.

Case V.—T. H. T——, aged sixty-six years, has been troubled fifteen years. Complains of getting up to urinate five or six times at night. Urinates every two hours through the day. Stream is not propelled with any force; wets his shoes. Prostate one and one-half inches in diameter and hard. Residual urine varies from six to ten ounces. March 8, 1898.—Bottini's operation. April 10th.—Present condition: Gets up twice at night to urinate. Urinates every two or three hours through the day. Passes thick stream with good force. Residual urine, one-half ounce. Clear and with but a slight quantity of mucus in it.

In order to place before you the facts, I would like to present a brief summary of these five cases and the results of the operations. The ages of the patients ranged from fifty-five to seventy-five years, and in each case the prostate chanced to be of the small, dense, fibrous variety. The troublesome symptom was frequency of urination by day and notably at night. The residual urine which remained in the bladder after the patient had endeavored to evacuate it completely was, taking each case separately, one ounce, four ounces, ten ounces, and sixteen ounces respectively. An examination was made in each case, to exclude the presence of stone in the bladder, stricture, or any other local abnormality.

Bottini's operation was done with the usual three cuts—the posterior, three centimetres long; lateral and anterior, two centimetres long. Cocaine was used as an anæsthetic.

The result of the operation was in every case to reduce the frequency of urination and to remove the obstruction offered by the prostate, so that the patients could entirely and completely evacuate their bladders. In each case this was demonstrated by introducing a catheter and finding only from three to eight drachms of residual urine, and the patients were able to dispense with the catheter, which they had formerly depended upon to empty their bladders.

Since the operations the urine in each case is propelled in a thick, broad stream, whereas before it was feeble and trickling, thus showing that the obstruction which formerly existed at the outlet of the bladder has been removed.

I wish only to say in conclusion that I believe Bottini's operation will in a great number of cases fill all the indications, and will take the place of the operations for prostatic hypertrophy which are now in vogue, and which are mutilating in character, unsatisfactory in their results, and attended with a high rate of mortality.

[1] Medical Record, March 5, 1898.

THE PHYSIOLOGY OF THE LIVER AND THE RÔLE IT PLAYS IN DIGESTION AND NUTRITION.[1]

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Nutrition, or the power of converting dead food material into living substance, is the foundation of physiology and all life. The term in its broadest sense may be used to embrace the processes of digestion, respiration, absorption, and excretion through which food materials are prepared for the activity of the living molecules and the waste products of activity are removed from the organism. The act of converting dead material into living protoplasm is probably a synthetic process, and may be specially designated as assimilation or as anabolism, as opposed to disassimilation or katabolism—the destruction of the complex substance of the living molecule. Assimilation and disassimilation, then, or anabolism and katabolism, acting co-ordinately, constitute an ever-recurring cycle of activity, which persists as long as the body retains its vital structure, and which is designated under the name of metabolism. If nutrition is the foundation of all life, the disturbance of this important process manifestly is the foundation for disease and destruction of life.

The composition of living substance is very complex, and a study of the vital processes involved in metabolism reveals the great instability of living matter and makes apparent how disturbances of nutrition may be the foundation or predisposing cause of all disease. The food that is eaten furnishes the material for growth and excretion. Living things can

[1] Read before the Kentucky State Medical Society at Maysville, Ky., in convention May 11, 12, and 13, 1898.

only transform matter and energy; they cannot create or destroy them. Nutrition conserves the elaboration of this material, and, since the liver is the largest gland in the body and performs the double function of secretion and excretion, it plays an important part in this transformation.

In a previous paper, in speaking of gastric peptones, I said that "these peptones are not ready for absorption into the circulation. Peptones when injected directly into the blood current behave as foreign bodies and produce a narcotic effect, not unlike that resulting from the injection of bacterial toxins." The statement was also made that, "the food stuffs having been acted upon by the ferments of the several digestive juices, the proteids are reduced to proteoses and to peptones and the carbohydrates into maltose. Absorption occurs principally in the small intestines. Now since, as above stated, peptones and maltose cannot be absorbed as such into the circulation without deleterious effects, the conclusion is inevitable that during the process of absorption they must undergo some further transformation which adapts them for the direct nutritional needs of the body." It was further stated that "there are two theories as to the nature of this transformation. One is that the epithelial cells of the intestinal mucosa possess a ferment—invertin—which is capable of further transforming peptones into simple products, as serum albumin, globulin, etc. And it is also claimed that these cells possess another ferment which further reduces maltose into glycogen. The second theory supposes that the leucocytes of the adenoid tissue surrounding the intestines have the functional activity of absorbing and transforming peptones into cell protoplasm, which thus gains entrance into the circulation through the mesenteric glands and thoracic duct.

Since writing the paper quoted from above, citing the theories of the nutritive processes as related to the transformation of the food stuff as absorbed from the intestines, I have changed my opinion materially. While it has been shown that the intestinal secretion contains an amylolytic enzyme which aids in converting starches into maltose, it has been also fairly well demonstrated that it has no specific action on proteids and fats, that it contains neither a proteolytic nor a fat-splitting enzyme. This transformation occurs principally, I believe, in the liver as the result of the metabolism occasioned through the agency of the protoplasmic material of the liver cell, which is the anatomical and physiological unit of the organ.

The liver through its manifold functions plays an important part in the general nutrition of the body. Broadly speaking, the liver has two great functions: 1. On the one hand, it transforms the materials of assimilation absorbed from the intestines, converting the sugars into glycogen, the peptones into serum-albumin and globulin, etc. These last products represent the simplest and most perfected development of these substances for assimilation and nutrition of the cells of the various tissues of the body. 2. On the other hand, the liver transforms the materials of disassimilation, and completes the development of these substances from non-diffusible colloids into crystalloid dialyzable material before they pass into the excretory passages. Urea, for instance, is thus formed, which is given back to the blood to be eliminated by the kidneys. And since urea is a strong physiological diuretic, the liver indirectly aids elimination of other waste products of the tissues by furnishing a powerful stimulant to the most important excretory organ of the body, viz., the kidney. The biliary function of the liver also represents the transformation of waste products of metabolism and furnishes an example of direct elimination of an enormous amount of poisonous material, contained principally in the coloring matter and the biliary acids. When the bile is poured into the intestines the coloring matter and biliary acids are precipitated and rendered innocuous or non-absorbable. The biliary function of the liver further conserves the nutritional interests of the body by emulsifying fats, which process renders them absorbable by the lacteals, which convey them through the thoracic duct to the general circulation to furnish nutrition and potential energy for the kinetic functions of the organism. The fats, then, are the only food products that are not absorbed by the capillaries of the intestines and carried to the liver for further elaboration before reaching the general circulation. This metamorphosis needs must occur, therefore, during the process of absorption by some act of the cells of the intestines, else the transformation must occur after absorption through the agency of the leucocytes. The latter theory is the more probable.

A brief review of these three great hepatic functions will easily demonstrate that the physiology of the liver not only plays an important rôle in digestion, assimilation, and nutrition; but, since it is the portal or gateway, with one exception, through which all food stuffs, or other materials whatever, for that matter, whether they be elements of life or death, enter the general circulation or vital domain of the organism, it has another function, in that it acts as a sentinel, discriminating between the good and the evil, selecting the good and rejecting the bad. The liver, therefore, in the great laws of digestion, nutrition, and life, represents the cardinal principles of affirmation and negation of the commandments and says, "Thou shalt" and "Thou shalt not," and will not hold him guiltless who is so temerous as to abuse or transgress those laws.

Our further study of the liver under the above divisions will deal first with the metabolic changes produced by the liver cell on the soluble products as absorbed from the alimentary canal, such as proteids and sugars; second, we shall treat of the formation and physiological significance of the bile.

In studying the changes the proteid food stuffs undergo during gastric and intestinal digestion, we learn that the proteoses and peptones thus produced are not ready for assimilation into the general circulation, but are further transformed by the metabolic activity of the intestinal cells into simpler albumins and into waste products, such as ammonia compounds, respectively; and these in their turn are conveyed by the portal vein, along with the products contained in the blood from the spleen, to the liver, there to be submitted to the metabolic activity of the liver cell, which converts the albumins into still simpler albumins, and the ammonia compounds and other end products of nitrogen disassimilation and oxidation into urea. The liver cells elaborate proteids into very simple forms, which then are carried through the general circulation to the cells of the various tissues, there to reach their final and ultimate metamorphosis into combined proteids by the metabolism of these cells, which convert them into living protoplasm to supply their nutrition, growth, life, and potential energy; their oxidation results in final waste products, which are sent to the liver to be converted into urea, and this again is returned to the blood to be eliminated by the kidneys. It has also been shown that the liver can produce glycogen from proteid food. This is a point worthy to remember, for, as glycogen is a carbohydrate and contains no nitrogen, it implies that the proteid molecule is dissociated into a nitrogenous and a non-nitrogenous part, the latter being converted into glycogen by the liver cells.

In dealing with the carbohydrates which are absorbed in the form of sugar and dextrose, we touch

upon one of the most important functions of the liver —the formation of glycogen. The starches are converted in the intestines into maltose, and during the process of absorption this is transformed by the epithelial cells into dextrose; this is carried by the portal vein to the liver cells, which by their metabolic action convert a part of it into glycogen, which is stored in the cells as a reserve supply that is volunteered to the service of the body cells when they require nutrition. The liver by storing glycogen acts as a commissary. The dextrose not converted into glycogen by the liver enters the general circulation, and the excess not required for immediate use of the tissues is temporarily converted into glycogen in the muscles and is stored there, to be again changed to dextrose before being used. Like starch, other carbohydrates, as cane sugar, milk sugar, etc., are absorbed as dextrose, and are similarly elaborated during assimilation and nutrition.

An analysis of the biliary function of the liver from a physiological standpoint shows the bile to be partly an excretion, carrying off waste products of metabolism, and partly a digestive secretion, in that it plays an important rôle in the processes of absorption generally, but especially in the emulsification and absorption of fats. The chief constituents of the bile, in addition to water and salts, are the bile pigments, bile acids, cholesterin, lecithin, etc. The bile pigments originate from hæmoglobin, resulting from the destruction of the red blood cells in the spleen. Cholesterin probably represents the waste products of cell life and is held in solution by the bile acids. Lecithin represents chiefly the disassimilation of nerve tissue. The bile acids are elaborated by the action of the liver cells and probably represent the most important ingredients of the bile.

The general physiological importance of the bile, then, is as an excretion, in that it removes from the body waste products of metabolism and is important as a digestive secretion in the part that it takes in the absorption and digestion of fats.

The above brief review of the physiology of the liver fairly demonstrates the claim I make, that the liver is the most important digestive organ of the body. To begin with, through its biliary function it prepares fats for absorption and digestion. And again, while the stomach, pancreas, and intestines perform the primary digestion of proteids and carbohydrates, the liver performs the secondary digestion and elaboration of these materials; truly a more important function, for it has been shown by many reliable investigations and numerous experiments that the normal products of primary digestion act as toxins or foreign bodies when introduced directly into the general circulation. This leads us to reflect that the welfare of the body invokes the good offices of the liver in the performance of the important function of rendering sentinel service, protecting the system not only from auto-intoxication that would result from direct absorption of these primary products of digestion, but also from poisons that may have been introduced as such with the food, and from alkaloids or toxins that may have resulted from fermentation and decomposition of the foods and absorbed along with the said products of primary digestion. An analysis of the blood in the portal vein and hepatic veins shows that the blood in the former is twice as toxic. More evidence of the protective powers of the liver to the body from toxins and waste products of metabolism is furnished by an analysis of the bile. The toxic principles of the bile reside in the bile pigments and bile acids, which are rendered inert on reaching the bowel by being precipitated by the acid chyme. Precipitation renders them non-absorbable and they are eliminated by the bowel. The bile is about nine times as toxic as the urine, which furnishes an adequate idea of the importance and amount of direct elimination of poisons by the liver. If a stronger case is wanted to prove the importance of the liver as an organ concerned in digestion and nutrition, what better evidence could be wished than the great waste and rapid decline witnessed in malignant jaundice and acute yellow atrophy of the liver?

It can be readily understood, therefore, how even temporary disturbances of primary digestion may pervert the functions of the liver in its secondary digestion and elimination of waste products, in consequence of which acute pathological conditions manifest themselves. When the digestion—primary and secondary—of proteids is interfered with, imperfect albumins reach the circulation, which, though not having been properly transformed for elimination, nevertheless are forced through the kidneys and escape in the urine. Their elimination is a source of irritation, inflammation, and pathological change in the kidneys. Again, under the above circumstances the end products of proteid metabolism in the tissues are imperfectly oxidized, and when brought to the liver to be prepared for elimination, on account of the perverted hepatic functions, instead of being converted completely into urea, they reach only a retrograde metamorphosis, such as uric acid and the xanthin compounds, which, if retained in the system, poison it; and when forced through the kidneys, which are not constructed for their elimination, irritate and disease them. However, the origin of uric acid, though it represents the end products of the metabolism of the proteids, has not been definitely settled. It has been suggested that it represents the waste products in the metabolism of leucocytes in the spleen. In response to a late personal inquiry of Stewart, of Philadelphia, he informs me that he is inclined to the latter theory, and says: "I should tell you that all the evidence is most decidedly against this product being formed in the liver. Only in certain conditions is uric acid formed this side of the kidneys, and then it is most likely produced in the spleen, as in leukæmia. It seems somewhat curious, but there are data supporting this also, that uric acid is sometimes formed from urea by the kidneys instead of the reverse being the case. This is by the union of urea with a substance termed glycocin. A great deal that is attributed to uric acid is really not due to it at all, but to toxins of various undiscovered source. I think it little doubtful that other xanthin bodies than uric acid are the causes of that which is attributed to uric acid itself." But since uric acid is formed in the liver of birds and reptiles instead of urea, and represents the ultimate products of proteid metabolism in those animals, reasoning from analogy, it is suggested that the liver may be the source of uric acid and other nitrogenous substances, as xanthin, hypoxanthin, etc., which are closely related to uric acid, and all of which represent the disassimilation of proteids.

When the digestion and assimilation of the carbohydrates are disturbed, the glycogenic function of the liver is marred. Sugar reaches the circulation in imperfect forms and undue amounts, and, while being eliminated, inflames and diseases the kidneys.

Disturbances of nutrition, then, explain the origin of many illnesses of an acute character, and, in my opinion, rule the largest number of chronic diseases. When we enter the domain of diathesis and diathetic diseases—the most chronic of all pathological conditions—we can reasonably incriminate no other cause than disturbances of nutrition. To disengage diatheses from the mystic cloud which surrounds them and render them physiologically intelligible, they must be regarded "as a permanent disturbance of nu-

trition, which prepares, provokes, and maintains different diseases, as seen in their location, their evolution, and pathological process."

The arthritic and scrofulous diatheses are permanent nutritive disorders, which once acquired may become hereditarily transmissible.

The daily round of human life is a repetition of integration and disintegration, of processes of building up and breaking down. The breaking down is caused by perverted nutrition, which leads up to disease and dissolution by improperly preparing the material introduced for building up, and by failing to convert the toxic waste products into suitable forms for ready elimination, which are retained and act as poisons. Perverted nutrition may be responsible even for the development of new substances which may become toxic. "Thus the organism in the normal as in the pathological state is a receptacle and laboratory of poisons. Bouchard in his 'Auto-intoxication' clearly indicates to us that man is constantly standing, as it were, on the brink of a precipice. He is continually on the threshold of disease; every moment of his life he runs a risk of being overpowered by poison generated within his system. Self-poisoning is prevented only by the activity of the excretory organs, chiefly the kidneys, and by the watchfulness of the liver, which acts the part of a sentinel to the materials brought to it by the portal vein from the alimentary canal."

The liver is a great physiological protector and preserver of the organism in three ways: 1. It prevents disease. It constitutes a barrier not only against poisons introduced with the foods, but against substances which result from perversion of the primary digestive processes in the alimentary canal, such as alkaloids of fermentation and putrefaction. 2. The liver combats and controls disease by perfecting the ultimate steps of digestion, thus furnishing nutrition and munition to the army of cells in their battle with microbes and toxins. 3. The liver preserves the health and hygiene of the body by directly eliminating toxins and waste products of metabolism through the bile into the intestines, and indirectly by furnishing the most powerful physiological diuretic, urea, to stimulate the most important excretory organ, the kidney, thus aiding the complete elimination of the waste products of normal disassimilation, as well as the refuse resulting from the carnage in the combat of the cells against disease.

May 10, 1898.

POTT'S FRACTURE.[1]

By R. W. KNOX, A.M., M.D.,

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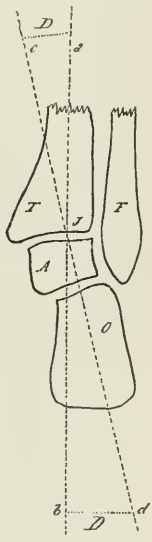
THE true nature of this injury was described for the first time by Sir Percival Pott in an article on "Fractures and Dislocations," in the year 1768. The same anatomical drawing used by this early writer and operator is still copied by modern works on surgery, and his classic description stands unchallenged in its accuracy after the lapse of more than a century. In an accident that is so common and at the same time fraught with so much danger to the usefulness of the limb, and possibly the life of the patient, we should have exact ideas of its nature and the method of treatment best adapted to secure the best results.

There seems to be no doubt of the fact that even with good care and attention some cases will result badly, and a malpractice suit may reward a faithful effort, yet it is my opinion that the more general adoption of a line of treatment to be proposed, and one that is by no means new or novel, will result in securing more serviceable limbs.

The ankle has the "ginglymus" variety of joint with its two motions, flexion downward and backward, and extension upward and forward. The slight lateral motion, which is principally inward, takes place at the subastragaloid joint. The maleoli of the tibia and fibula respectively overlap the sides of the joint, and with their strong ligamentous attachments make the joint a very secure one, and at the same time prevent a lateral motion. The convex surface of the astragalus fits a corresponding concavity in the articular surface of the tibia and gives the joint a rocker-like motion in the two directions named. The internal condyle is shorter than the external, but is compensated for in length by the deltoid ligament, which is unusually strong, especially in its attachments to the condyle. This ligament when subjected to a great strain, as in Pott's fracture, often escapes rupture by carrying away a part of the internal malleolus, to which it is attached. The external lateral ligament protects the external condyle, assisted by the anterior, posterior, and interosseous ligaments.

The injury known as Pott's fracture is a dislocation as well as a fracture. The fibula is fractured from one and one-half to three inches above the tip of the external malleolus, while the astragalus is dislocated from the tibia in an outward direction consequent upon the rupture of the deltoid ligament, or, what is more frequent, a portion of the internal malleolus, to which the deltoid is attached. The twisting-force which the foot is supposed to exert at the time of the accident is due to the action of the peroneal muscles after the foot has been dislocated, for we notice that it immediately resumes its original distortion if the reduction is not enforced with the proper supports. The tilting of the astragalus outward fractures the fibula, and, the force continuing, ruptures the internal lateral ligament. In rare cases the force is sufficient to make the dislocation a compound one, the articular end of the tibia being forced through the connective tissue and skin after breaking away from its ligamentous connections. That an outward dislocation of the foot should be so much more common than the opposite condition is easily explained. The long axis of the leg does not pass through the centre of the supporting surface of the heel, but near its inner border. A force transmitted through the long axis of the leg would therefore find its point of least resistance at or about the tibio-fibular articulation, for at this point the long axis of the leg makes an angle with the conjugate diameter of the tarsus. In other words, there is a natural outward displacement of the foot beginning at the ankle, and no matter how direct the force transmitted through the leg, a dislocation of the astragalus from the tibia and a fracture of the fibula is the most probable result (see cut). Dr. Wight, of the Long Island College Hospital, states that he has treated a dislocation of the foot complicated with Pott's fracture, in which the sole cause was the normal curve at the ankle-joint. In this case a heavy weight fell upon a man's knee when the foot rested upon the ground and the leg was perpendicular to the foot. The force in this case must have been very great. The appearance of the



[1] Read at a meeting of the South Texas Medical Association, June 29, 1898.

foot after such a fracture is especially characteristic. The foot is displaced outwardly, the toes turn out, and the external border of the foot is inclined to turn slightly upward, while the internal border is correspondingly depressed. The internal malleolus is very prominent and presents a sharp ridge if the ligament has severed a part of the condyle. An angle is noticed on the external side at the position of the fibular fracture. The foot is freely movable and reduction is not difficult unless interfered with by detached pieces of bone or ligament coming between the opposing surfaces. Hamilton, in his work on fractures, mentions a case in which he found it impossible to reduce the dislocation, the difficulty being caused, he thought, by the interposition of a fragment of the tibia which had been detached by the interosseous ligament and had become displaced in the joint. It is my opinion that these displaced fragments are largely responsible for faulty union and constant pain seen in some cases. When such a condition of affairs is suspected, an opening of the joint for the removal of fragments and correction of displacement would be admissible. This has been done very successfully as a secondary operation in cases of faulty union when locomotion was impaired.

Dr. George F. Shrady reports such an operation. His patient weighed over two hundred pounds. The dislocation was outward and backward; the inner malleolus was fractured transversely and displaced downward and forward with the tibia fractured in the usual place. For two years the foot was practically useless on account of pain in attempting to walk. A resection was made of the articular surface of the tibia and the ununited fragment of the fibula. The bones were sawn through *in situ* with the subcutaneous saw; the astragalus was not disturbed. The tendo Achillis was divided. The sawn surface of the tibia was brought in contact with the articular surface of the astragalus, a drainage tube was put in, and the limb was enveloped in plaster. A good result with a useful limb is reported.

Treatment.—With the exception mentioned, reduction is easy, the difficulty being to prevent a constantly recurring tendency to displacement of the foot outward and backward. This is accounted for by the action of the peroneal muscles and tendo Achillis. In order to prevent this the parts must be restored to the original situation, and kept so by a firmly fixed dressing until ligamentous union is accomplished. Absolute coaptation with a fixed dressing that is not too often disturbed and is worn for a long time is the *sine qua non* for a successful result. Mansell Moullin states that if the distance between the malleoli is increased but slightly lameness and serious disability are sure to follow. If the line of union is not perfect in every respect, an imperfect action may be expected. No other joint is subjected to more pressure by weight and muscular strain, and we wonder, in fact, as we view it from all points, if so much work was originally intended for this joint, and whether it is not possible that man at one time went on all fours, in company with his simian relatives. However this may be, as regards the treatment of the injury in question there is not much difference of opinion. In Dennis' recent work on surgery the writer of the article on fractures states that the only two dressings worthy of mention are the plaster of Paris and the splint of Dupuytren. The latter is not much used at the present time, as it is more difficult to apply accurately and confines the patient to one position in bed. The plaster is by far the best and most comfortable of all dressings for fractures about the leg and ankle-joint. The most important point in connection with this dressing is the manner and time of its application. In order to get good results the leg should be put up at once, if possible, and not after an interval of one day or one week. Such delay cannot always be avoided, although I believe it to be absolutely prejudicial to the future usefulness of the limb. In this connection I might state that this rule applies with the same force in all other fractures; not only do early coaptation and fixation insure better union, but they also relieve the patient of much unnecessary pain. In fact it has become an established rule in surgery that reduction should be effected at the earliest possible moment, otherwise the swelling may increase the difficulty, while the muscles become shorter, harder, and more intractable. A fractured bone until properly set is a constant source of irritation to the surrounding tissues.

It is no special contraindication to the use of plaster that the parts should be swollen when it is applied, for if swelling has already taken place the plaster will reduce it; and if no swelling has occurred it is not likely to do so after the dressing is in place. An exception to this rule might be taken if the parts were much bruised, or in case of old age or of much impairment of the patient's constitution. The plaster should be put on evenly and firmly over good wadding, and there is rarely an indication for its removal until the swelling subsides or the limb is reduced in size on account of enforced inaction. In cases in which it is decided to put on the plaster when swelling is present, and the constitution of the patient is such that an undue swelling is to be apprehended, I am in the habit of cutting the plaster down in front before it is thoroughly dry and applying a roller bandage. This is especially advisable when the patient cannot be kept under strict observation for the first twenty-four hours.

My first case of Pott's fracture was a partnership one and occurred in the early days of my professional career. The patient was a stockman and the accident happened in some way while a steer was being roped from the ground. When the case was first seen there was a little swelling, and the ancient fracture box was called into requisition; and after this a tin splint, approximating as nearly as possible to a fit, was applied. The result in this case was not satisfactory to the patient, but was of great benefit to myself. My next cases were treated with an immediate plaster dressing, and the results have been much better.

I was recently called in consultation with Dr. W. B. Olive, of this city, to see a most interesting case of compound Pott's fracture. The patient, A. M——, while riding in an electric car, and fearing a collision from another car, jumped to the ground, alighted on his right foot, and produced the following injury: The foot was turned out almost to a right angle with the axis of the leg, and the tibia, divested of its ligamentous attachments, was protruding through the skin for the distance of one and one-half inches. The interosseous ligament had detached a portion of the external articular end of the tibia, the direction of the fracture being upward and outward, and the fragment separated was about one inch in length. The deltoid ligament had detached a portion of the inner malleolus. This fragment was firmly fixed to the ligament and was lying within the joint cavity. Before reduction was effected the entire limb was rendered aseptic, the wound was enlarged, and the cavity of the joint was thoroughly irrigated with a 1–5,000 bichloride-of-mercury solution. The fragments of bone were removed, with the exception of the one detached by the interosseous ligament, and firmly held in place by the side of the fibula. Before the joint was closed another irrigation was made with the bichloride, followed by one of decinormal salt solution. No drainage was used, for the following reasons: The joint was well cleansed and there was no hemorrhage; the

drainage tube through the joint would necessarily interfere with immediate union and might be a means of causing suppuration; it would also necessitate the early removal of the plaster with a disturbance of the joint. Furthermore, when the bones are in apposition there is no cavity for the accumulation of blood or serum, and what fluid of this kind that might be thrown out would find ready exit between the interrupted sutures as the points of least resistance. The drainage is also assisted by the capillary action of the absorbent cotton surrounding the limb. In this case a smooth, rather thick wadding of carbolated cotton was used, and proved sufficient to absorb all the serum and blood thrown out. No swelling occurred and the patient complained of no pain. After a few days a window was cut in the plaster over the seat of the wound, which was found in good condition, and the stitches were removed. The original plaster was allowed to remain on for three and one-half weeks, when it was removed and slight movement was made at the ankle-joint. The limb was then encased in a liquid-glass dressing and allowed to remain for two weeks. A dressing that could be removed daily and allowed massage of the leg and motion at the ankle was now applied. The patient's leg now, seven weeks after the injury, bids fair to be a useful member.

The question as to the treatment of a compound dislocation of the ankle is perhaps still an open one. In the days of Galen and Hippocrates it was thought that death was certain if the dislocated bone was reduced, and if by any chance the bone became reduced it was immediately dislocated again. In later years and before the days of antiseptic surgery amputation was the rule in all cases. An improvement was made on this method by surgeons who have written within the past two decades, by the proposal of resection before reduction. This method was open to the objection that ankylosis was almost certain, and the injured limb was shortened from three-quarters to one and one-half inches.

The consensus of opinion at the present day is decidedly in favor of saving the foot in all cases in which the damage to the soft parts is not too great and the main arteries of the limb are intact. Reduction with resection is indicated in feeble or aged subjects. In strong and vigorous patients simple reduction of the bones, if managed according to the rules of modern surgery, will usually give good results.

In the summing up of the subject of treatment it is seen that (1) plaster of Paris is the best dressing for fractures about the ankle; (2) this dressing should be put on immediately or as soon as possible after the receipt of the injury; (3) swelling is not a contraindication to the use of plaster; (4) it takes longer for ligamentous than for bony union, and a patient should not use his foot for locomotion for several months after the injury; (5) no other dressing so nearly prevents motion, and on this account it is especially valuable in compound luxations; (6) small capillary drains may be used, but rubber drainage tubes through the joint are unnecessary and capable of doing much harm.

In Operating wear sterilized white thread gloves, cover the mouths of operator and assistants with gauze bandages, and avoid conversation during the operation. To assure sterilization of dressings, place within the sterilizer a slip of paper upon which the word "sterilized" is printed. Cause the printed word to disappear, by making the paper blue with a solution of iodine. When a temperature sufficient for complete sterilization is reached, the iodine is driven off and the word "sterilized" reappears.—Mikulicz.

VAGINAL EXAMINATIONS AND VAGINAL DOUCHES IN NORMAL LABOR.

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The subject of puerperal sepsis will not down. It is still a prominent feature in medical journals and in the discussions of societies. A recent meeting of the obstetrical section of the New York Academy of Medicine served to emphasize the fact that men of eminence and experience disagree as to the curative treatment of this condition. This being the case, it behooves us to look with especial care to the prophylactic treatment.

Viewed in historic perspective, the obstetric history of the century may be divided into three periods: the first may be called the pre-antiseptic period; the second, commencing with the long-neglected reforms of Semmelweiss, the antiseptic period; and the third, or the present one, the period of asepsis.

A brief survey of recent progress in the bacteriology of obstetrics will suffice to show what might have been expected at the outset, namely, that in normal cases we cannot improve upon the methods of nature. It has been clearly shown that the vaginal secretions have bactericidal properties, and that in normal cases antiseptic douches can only aid in causing infection.

While the discovery of the bacterial origin of puerperal infection was of incalculable importance, and the name of Semmelweiss deserves to be placed in the catalogue of the world's greatest benefactors, there is no doubt that the zeal for reform has often been carried too far, as in the preliminary douching and vaginal scrubbing in normal cases, and the routine use of daily post-partum douches, which, in hospital cases especially, have done a great deal of harm. Since, however, the non-pathogenic character of the organisms normally found in the vagina has been demonstrated, these measures have been very generally abandoned, and in normal cases we have as obstacles to perfect asepsis only frequent vaginal examinations, still often practised, and the post-partum douches, still used by many practitioners and in many hospitals. To what extent can we dispense with these?

First we note that in normal labor no douches of any kind are necessary. But what is normal labor? One thing is usually omitted in its definition, namely, that labor complicated by vaginal examinations and douches is not normal. How beautifully has nature provided against infection! Not only are the vaginal secretions antagonistic to the germs of infection, as Doederlein and others have shown, but after rupture of the membranes the cervico-vaginal canal is flooded with liquor amnii, which some one has not inaptly called a normal salt solution, and the fœtus during its emergence is at all times closely embraced by the retracting ostium vaginæ, so that neither air nor foreign body can enter. Here there is clearly no indication for a post-partum douche, unless, indeed, some enterprising person has given an ante-partum douche. In this normal physiological process nature's work is truly conservative; and here, if anywhere, the physician should be "*naturæ minister et interpres.*" The dictates of common sense, as well as the facts of comparative physiology and pathology, lead inevitably to this conclusion.

In discussing the subject of douches we are obliged to take up that of vaginal examinations as well, since in most cases the latter furnish whatever of justification there is for the former. These topics may seem commonplace. In the present period of operative obstetrics and gynæcology we are prone to forget those things that form part of the ordinary work of the practitioner, and to think that the last word has been said

about so prosaic a subject as the management of normal labor; but there is more harm done by carelessness in this department than can be atoned for by all our operative work, commendable as much of it is.

A very large proportion of the cases seen by the general practitioner are cases of normal labor in multiparæ, and would get along perfectly well without any active interference whatever. Many of them when first seen are so far advanced in the second stage as to have passed the time for most complications, and it is certainly deplorable that cases of this kind should become septic through unnecessary manipulations.

Since sepsis comes from without, and chiefly through vaginal examination, the question naturally arises: Why take the chances of introducing sepsis at all? It would of course be a dangerous absurdity to endeavor to prohibit vaginal examination in labor, but that it is vastly overdone there can be no possible doubt. It is difficult to understand why more stress is not laid upon the admitted importance of external palpation. In the study of diseases of the heart and lungs, the extremest minutiæ of physical diagnosis are carefully followed out, although in many cases the matter is chiefly of academic interest and has little if any bearing upon treatment; while in others it is so obscure that men of ability and experience differ after careful examination. In advanced pregnancy and in labor, however, we have conditions which can hardly fail to be recognized by any physician who will carefully study his cases as he meets them, and the recognition of which is fraught with vast importance.

Vaginal examination in labor is not only often unnecessary but is in itself a positive evil, and should be employed only to avoid a greater evil. Not uncommonly by the pain and nervous shock which it occasions it arrests, or unfavorably modifies, the course of labor, and it is the most common cause of sepsis.

But it may be said that with proper precautions vaginal examination is harmless. This statement is to be regarded with judicious scepticism. The same thing might be and indeed has been said about intrauterine manipulation, and theoretically it is correct, but in practice there are so many sources of error that the conclusion is untenable. Even in hospitals the lesser degrees and the ultimate consequences of puerperal sepsis not infrequently pass unrecognized.

The fact that surgeons of experience disagree as to the best method of hand disinfection confirms the conclusion of modern bacteriologists that no method is infallible.

Again, it may be said that unless frequent vaginal examinations are made complications will be overlooked. It would be easy, if time and space permitted, to take up the different abnormalities seriatim, and to show in each instance that such a statement is incorrect, at least in the case of one who has had a sufficient practical training and who uses modern methods of investigation.

When a delayed first stage threatens the life of mother or child, it is necessary to introduce the hand into the uterus for the purpose of making an exact diagnosis, if the diagnosis can be made in no other way. But who would advise this as a routine practice? The day is not distant when it will be generally acknowledged that it is no less an absurdity to make frequent vaginal examinations in normal cases, especially when the finger is passed through and around the partially dilated cervix, in order to determine the progress of labor.

In a large proportion of the cases in which external palpation fails to give satisfactory results, all necessary information can be obtained by rectal examination, as has been shown by Zweifel, Beckman, Kroenig, and others.

Every thinking man, no matter how much he may be influenced by tradition and custom, must admit that the vast majority of vaginal examinations in labor are unnecessary. Every practitioner knows by experience that unless he responds promptly when called to attend a multipara he is likely to be too late, and yet in many cases if the atendant arrives in time he makes one or more such examinations, if only as a matter of form.

A common cause of unduly frequent vaginal examinations is the inexperience or indecision of the practitioner. We often find that those who criticise the use of the forceps and the performance of obstetric operations do not hesitate to incur the grave responsibility of making frequent examinations, both before and after delivery.

The term meddlesome midwifery should not be applied to obstetric operations, which, when indicated, are really conservative measures, but rather to unwarranted interference with normal labor, and especially to examinations and douches that are not necessary. It is as futile to interfere with nature's processes of repair in normal labor as to rely upon her unaided efforts in abnormal labor.

While unnecessary examinations are objectionable before delivery, they are doubly so afterward, when a multitude of small lacerations and abrasions, which soon heal if left alone, offer as many avenues for the introduction of sepsis. Gynæcologists are fast reaching the conclusion that moderate cervical tears not causing hemorrhage are best left alone. Perineal lacerations which endanger the integrity of the pelvic floor of course require immediate repair, and the same statement applies to the larger superficial lacerations of the perineum. These, however, are not parts of normal labor, and should occur only in a limited proportion of cases. To distend the cervico-vaginal canal in search of small tears whose edges are in apposition and have no tendency to separate would be ludicrous if it were not so dangerous. It is true that an extensive laceration of the vagina, requiring immediate attention, may coexist with an apparently normal condition of the external parts; but it is the testimony of experienced obstetricians that a sufficient inspection of the vagina may be obtained by everting the posterior vaginal wall through the rectum.

The fear of post-partum hemorrhage and retained placenta, accidents which under proper management are of the rarest occurrence, leads to much intravaginal manipulation and consequent sepsis. In no condition does the "*nimia diligentia* of the tyro," as Leishman calls it, do more harm than in the third stage of labor.

The introduction of the hand into the uterus is sometimes rendered necessary by post-partum hemorrhage and other morbid conditions. Here it is of course warrantable to incur a lesser danger in order to avoid a greater one, but the occurrence of sepsis after the introduction of the hand into the uterus has been noticed by many careful observers, and this procedure should be avoided unless imperatively indicated. The practice of introducing the hand into the uterus to remove fragments of membrane which may have been torn off during the delivery of the placenta should be unhesitatingly condemned as far more dangerous than allowing them to remain. In aseptic cases they are usually passed without trouble in a few days.

We must, however, admit that in general practice many cases require vaginal examination for one reason or another. The physician's time is limited and he cannot watch his cases from beginning to end, as can the resident staff of a maternity hospital. Rectal examination, while it often answers the purpose admirably, makes a careful subsequent disinfection of the

hands necessary, and perhaps requires the presence of an assistant who can make vaginal or uterine examinations, should they be required by the occurrence of hemorrhage, laceration, or other complications.

If, then, vaginal examination is to be allowed at all, to what extent should it be limited? A glimpse at the various text-books supposed to represent modern obstetric teaching will reveal a remarkable difference of opinion. In discussing the management of labor, in the "American Text-Book of Obstetrics," Professor Jewett says: "If the physician has satisfied himself of the absence of complications, vaginal examination rarely needs repeating until after rupture of the membranes." And again: "There is seldom occasion in normal conditions for more than one or two internal examinations at the most during the expulsive stage."

In striking contrast with this are the directions found in various recent treatises and manuals, in one of which, for example, we find the statement that after complete dilatation of the os "vaginal examinations should be made every ten or fifteen minutes."

The question is not a simple one, and the answer will vary with the skill of the physician and with the circumstances of the individual case. There can be no doubt, however, that the necessity for vaginal examination diminishes with increasing experience.

Admitting that definite rules can hardly be laid down, there are yet certain general principles which may be of assistance.

The importance of an examination at some time during the last few weeks of pregnancy cannot be overestimated. Its prophylactic value is often far greater than that of examination during labor, and its general neglect is one of the most serious defects of modern obstetric practice. If pelvic deformity or other complication is suspected, careful vaginal examination will be necessary, but in the majority of cases an external examination will be sufficient. In addition to this it will in most cases be advisable to make a careful vaginal examination in the early part of the first stage of labor. More solicitude is naturally felt in the case of a primipara than in that of a woman who has already borne a child at term and who has no history of difficult labor. According to the statistics of Matthews Duncan, the liability to complications diminishes progressively after a first normal labor until the ninth.

As the head advances, the difficulty of examination becomes less, but in normal cases it can hardly be said that the necessity for examination becomes greater. There is, of course, no doubt that the ability to recognize promptly a delayed first stage and the cause of delay is of the highest importance, and in doubtful cases the accoucheur should not allow timidity or the fear of frequent examinations to prevent him from clearing up all doubt by thorough and careful investigation, under ether if necessary. On the other hand, however, he should carefully avoid falling into habits of indolent routine, and should perfect himself in every extravaginal method of diagnosis which may save his patients from examinations and manipulations that are not only unnecessary but at times dangerous.

An excellent description of the proper method of following the progress of the head by external palpation may be found in the recent work of Dr. Edward P. Davis.[1] Says this author: "Symptoms of delay or exhaustion during labor can be more readily appreciated by palpation than by any other method."

It is undoubtedly true, as remarked by Lusk, quoting Ahlfeld,[2] that under certain conditions face presentation is favored by rapid escape of the amniotic fluid, and, as prolapse of the cord and other accidents occasionally occur at this time, there is perhaps some reason for making a vaginal examination immediately after rupture of the membranes. This will also determine the fact of their premature rupture, an accident which makes careful subsequent observation of the case imperative.

It may not be out of place to recall here the well-known but too often forgotten fact that the danger of sepsis is distinctly increased when the finger is carried within the cavity of the cervix or into the lower uterine segment, where the acid vaginal mucus no longer aids in inhibiting bacterial development.

The necessity for frequent examinations during the second stage is not apparent, especially if examination after rupture of the membranes shows that there is no prolapse of the cord, no extension of the head or other abnormality, and if the fœtal heart sounds are normal. The changes in the size and shape of the abdominal tumor tell that the head is low in the vagina, and the character of the pains or the condition of mother or child will indicate the necessity for interference.

A great deal of stress is usually laid on the importance of noting the progress of labor, by which is usually meant the degree of cervical dilatation, and in cases of delayed labor with possible impending maternal or fœtal exhaustion this is undoubtedly a matter of the highest importance; but in normal cases, if the head is advancing, it is pretty safe to say that dilatation is taking place, and it hardly seems necessary frequently to demonstrate this fact by measures which may endanger the welfare of the patient.

It would be interesting to pursue this subject at length, if time permitted, but it is not necessary. A brief study of the chief objects to be attained by vaginal examination will show that its employment in normal labor is much too common. It is by no means asserted that even the few examinations indicated by the above sketch are necessary in every case. Indeed, some obstetricians have felt justified in refraining altogether from internal examinations in a large proportion of cases. The physician's experience and conscience must tell him to what extent a legitimate anxiety for the welfare of his patient justifies him in interrupting a physiological process, by measures which prejudice, however slightly, the chances of a life intrusted to his care.

Those who have become expert in external palpation regard it as a more valuable means of diagnosis than vaginal examination. No unusual skill is required, but simply ordinary intelligence and perseverance. It is indeed strange that so valuable a resource should be commonly neglected, while vaginal examination is constantly practised at times when it is not only unnecessary but distinctly dangerous.

The post-partum douche, then, is not a necessity *per se*, but is given because most labors are not, properly speaking, normal. The fact that in most cases repeated examinations have been made, and too often without proper precautions, is its principal justification. The vagina is irrigated because of the possibility that sepsis has been introduced from without.

It is true that the recent experiments of Kroenig show that after the inoculation of the vagina with pure cultures of the streptococcus and other germs the destruction of these germs is not effected by an antiseptic douche given an hour later, but is actually delayed from eight to sixteen hours. These experiments, however, performed upon the normal vagina, while they show the futility of douches in most cases and as usually employed, do not apply to a recently lacerated and presumably infected surface; and it is to operative cases and to cases in which laceration of

[1] "A Treatise on Obstetrics," p. 193.

[2] "Die Entstehung der Stirn- und Gesichtslagen."

cervix, vagina, or perineum plays a prominent part that the post-partum douche seems most applicable.

A few words as to the method of giving the douche. A glass tube perforated at the sides should be used. The solution should be as hot as can be comfortably borne, but should not be too hot. As sometimes given it causes unnecessary pain and may even by constringing, if not actually cauterizing the superficial vessels, interfere with drainage, retard the necessary post-partum changes, and thus actually aid in producing sepsis. It should be understood that the object of the douche is not primarily the prevention of hemorrhage, but simply the flooding of the vagina with an antiseptic solution. A little practice will enable one to manage the tube without introducing the fingers. To distend the ostium vaginæ and carefully search the vagina and cervix for clots is to invite sepsis. Whether the air of the lying-in ward may carry the germs of puerperal infection is still perhaps *sub judice*, but there can be no doubt that freely to admit air to the vagina after delivery is the surest way to cause decomposition of coagula previously harmless.

History repeats itself in medicine as elsewhere, and the gradual substitution in obstetrics of asepsis for antisepsis reminds one forcibly of the substitution in abdominal surgery of primary closure for drainage. The latter, once considered necessary in every case, is now used only in infected cases.

From the beginning of cervical dilatation until long after delivery we have a surface favorable to the direct absorption of septic matter. How inconsistent, then, to preach asepsis in obstetrics, and at the same time advise as part of the treatment of normal cases the frequent introduction of the one instrument which we cannot sterilize—the hand, and the use of douches which serve only to interfere with the conservative and reconstructive processes of nature.

A physician of this city once said that his last seven or eight cases had been septic. He had tried in vain by the use of various methods, including the Turkish bath, to free himself from the source of infection, knowing that he carried it about with him wherever he went. Could there be a more astonishing exhibition of the influence of conservatism? A well-informed man of large experience thought it necessary to subject his patients to the practical certainty of sepsis, in order to forestall some complication which might occur once in a hundred cases, and which, even then, might be discovered by other means.

One cannot look over the obstetric literature of the day without the reflection that too large a proportion of it is devoted to the study of abnormalities and too little to the study of normal labor. It is unreasonable to suppose that the same examinations and manipulations are necessary in all cases. A sharp line should be drawn. Abnormal cases should be treated promptly and fearlessly, and normal cases should be let alone. They are dangerous only through unnecessary interference.

Diagnostic skill on the part of the accoucheur is doubtless of vast importance. Its value, however, lies not only in showing him what to do, but what not to do, and his methods of diagnosis should be, if possible, those which are devoid of risk. No less an authority than Winckel has testified to the difficulty of securing asepsis in vaginal examination. To quote from the recent text-book on obstetric surgery by Grandin and Jarman: "No matter how careful we are in our asepsis, each examination carries the risk of infection."

To sum up, the common custom of making frequent vaginal examinations during the whole course of labor is unscientific and unsafe, and it should be the aim of the conscientious obstetrician so to familiarize himself with all extravaginal methods of diagnosis as to reduce the necessity for vaginal examinations to a minimum.

All intravaginal manipulations are especially objectionable after delivery.

When the vaginal secretions are normal, ante-partum douches are unnecessary and harmful. Upon this point the researches of Leopold and Goldberg, as well as those of Fischel and others, seem to be conclusive.

In normal cases the single post-partum douche is unnecessary and therefore objectionable, but in many cases circumstances render it advisable as a precautionary measure.

The routine use of douches during the normal puerperium is contraindicated. Lusk says: "In hospital practice they have invariably increased the morbidity and the mortality rate."

It is of course to be understood that these conclusions apply only to normal cases, and in no way forbid the most searching examination or thorough disinfection when indicated.

It would be impossible to discuss this subject properly within the limits of a brief paper, but it will suffice if enough has been said to call attention to the fact that vaginal examinations in labor are far more common than they need be or should be. When women were allowed to linger in the second stage for hours, or even days, uterine inertia, post-partum hemorrhage, retained placenta, and other complications were so common as to fill the minds of writers, teachers, and students, to the exclusion of other and important matters. With the development of scientific obstetrics should come a corresponding reversal of our attitude and a modification of the methods of the last century. We should no longer think it necessary to treat all cases as though abnormal.

The ideal labor case is one in which the existence of pelvic contraction or other abnormality is disproved before labor, in which the progress of labor is observed by extravaginal methods, and in which nothing is permitted to enter the vagina after delivery. That this ideal cannot always be reached goes without saying. That we should get as near to it as we can is equally true.

Since the memorable reform of Garrigues at the New York Maternity, deaths from puerperal sepsis have been comparatively rare among us, but they are by no means unknown, while the minor degrees of sepsis occur all too often and furnish our gynæcologists with much employment. Nor will this condition of affairs be remedied until it is generally recognized that in normal labor the vagina is no more a legitimate field of experiment than the uterus.

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MALARIA AND AUTOGENOUS FEBRILE CONDITIONS IN KERN VALLEY, CAL.

By REGINALD A. FERGUSSON, M.D.,

BAKERSFIELD, CAL.

It is only during the last few years that the term "malaria" has been recognized as applying to a disease with as definite a set of symptoms as any other one of the infectious diseases; the term has had a clinical rather than a pathological or etiological significance. Even yet, by some practitioners and by most of the laity, malaria is looked upon as a vague morbid influence, existing in the earth or water or air, which in a mysterious way invades the human organism and there acts as a poison, producing the most varied of symptoms and multitudinous diseases.

Of those alterations in the state of the body or of some of its organs, the result of perverted or impaired cell action—usually in this valley classed under the

term "malaria"—some are autogenous, some protozoal, and some bacterial in origin, and some are the result of two or of all these causes.

The indisposition for which the physician in Kern Valley is most often consulted is variously characterized by the following group of symptoms: Instead of the unconscious feeling of well-being that accompanies good health there is a depressed feeling with a sense of being tired and listless, and a strong disinclination to bodily or mental exertion; there is aching in the limbs and body, often markedly so in the right side and under the shoulder-blades; there are dull headache, giddiness, and disturbed and dreamful sleep; foul tongue and bad taste, especially on awakening; anorexia; nausea; stomachal cough and foul breath; sluggish and irregular action of the bowels, and the urine is often scanty, highly colored, and offensive. Accompanying these symptoms there may be, and there may not be, chilliness and fever.

The predisposing causes of these symptoms are errors in alimentation, non-adaptation of the mode of living to the habitat, and bodily or mental overwork. The pathological exciting cause which appears to correspond to these symptoms is a toxæmia due to an excessive formation of poisonous substances in the system, or an accumulation due to deficient elimination of these substances.

If alimentation errs from excess, from insufficiency, from poor quality of ingesta, in cookery, in non-adaptation to the locality and climate in which the subject lives, or if the living cells fail in the proper construction of the digestive ferments, or in the proper destruction of effete material so as to fit it for elimination by the eliminative cells, or if the functions of the excretory organs be vitiated, there accumulate in the liquids and organs of the economy various products more or less toxic.

Non-adaptation of the mode of living to the habitat always occurs among an immigrant population, and markedly so when the immigration has been from a maritime or temperate continental to a dry, hot, continental climate with a radical change in the meteorological environment. Under these circumstances there is a greater risk of exposure to extremes of temperature with the consequent production in the system of deleterious substances.

Both mental and physical labor are accompanied by the formation of toxic elements, and bodily or mental overwork causes an accumulation of these toxic elements within the system.

If the symptoms are not accompanied by fever the disease is called a bilious attack or a "touch of malaria," and if the healthy balance between the formation of and the elimination and evacuation of effete matters becomes chronically disturbed the disease graduates to "chronic malaria." If chilliness and fever are present it is called malarial fever, or if the nervous symptoms are pronounced, the opinion is expressed that "typhoid may be feared."

Of the origin and nature of the poisons which are formed in the organism itself and of their elimination and reabsorption very little is known at the present time, but that certain febrile conditions are autogenous there can be no doubt. Profuse bleeding in the healthy subject raises the temperature, probably by increasing the transudation of tissue juices into the blood-vessels. In the fatigue and exhaustion of overwork the toxæmia is caused by the infiltration into the blood from the tissues of poisonous substances, the products of retrograde metamorphosis. Overwork is a comparative term; what is overwork to one system is not overwork to another. The man of sedentary habits immigrates to this valley and becomes a farmer. He is quickly overworked at his unaccustomed toil; the result is a gradual appearance of the above group of symptoms. He diagnoses his case as "malaria," which he has heard is so prevalent in the San Joaquin Valley, and loudly lays the fault to the country and climate. The mountain farmer is taken from his plough or the cattleman from his saddle and shut up in the jury box; after a day or so of mental worry and unaccustomed sedentary life he, too, has an attack of the same malaria, and he accuses the climate of the valley as the cause. The Basque sheepman is brought to the physician, suffering with the same set of symptoms due to worry from homesickness. The business man meets with reverses; he works and worries day and night for some time; the excretory organs seem to act normally, but after a few days there are elevation of temperature and dull headache, the appetite is impaired, and sound and refreshful sleep is impossible; the brain is excited and refuses to be at rest. These are a few of the many examples which one meets in general practice of the malaise and fever of fatigue and exhaustion, and of which the pathological exciting cause appears to be an excessive formation of poisonous substances in the system and their infiltration into the circulating media.

The malaise with fever due to an accumulation of poisonous bodies in the system by reason of deficient elimination by the eliminative cells and by non-evacuation of putrefactive irritants from the intestinal canal, though not listed in our text-books, is known to all physicians, obstetricians, and surgeons of experience. There is a feeling of languor, the head aches, the tongue is coated, the breath is offensive, the bowels are torpid, and there are chilliness and fever. The physician is liable to suspect the existence of typhoid fever or malaria, and the obstetrician or surgeon fears septicæmia. It is probably the most ubiquitous complication of other diseases, and it may occur *per se*. It is one of our commonest fevers in children, in whom the power of maintaining a steady temperature is less than in adults. The predisposing causes are errors in alimentation and in the mode of life. The most common exciting cause is the invasion into the system of poisons from the intestinal canal. It is more than probable that the poisons generated in the intestines are due to the bacteria which are normally present, but this would not exclude this disease from the list of autogenous diseases. "The bacterial cells which are normally present in the intestines cannot be regarded as invaders from without." It is possible that an accumulation of tissue waste produced in the system may cause only a vital depreciation which allows the absorption of poisonous toxins, toxalbumins, and other substances from the alimentary canal, and that it is these bodies which are responsible for the febrile conditions in all autogenous fevers.

From the results of laboratory experiments there seems no doubt that the bacillus coli communis at times possesses pathogenic properties, and that by change of environment it may be brought from a condition of benignity to one of virulence. This change of environment is probably produced by errors in diet of the host, or by failure in the living cells of the alimentary organs properly to construct the digestive ferments, or failure of the canal to perform its excretory and evacuative functions.

Poisonous bodies, along with digested material, pass away from the canal, partly into the portal vessels and partly into the lacteals. In the latter case they fall into the general blood current after having undergone only such changes as they may experience by coming in contact with the lymph cells. After absorption has taken place through the intestinal walls into the blood of the portal vessels, poisonous bodies which have been absorbed will come in contact with the various constituents of the blood, and may possibly produce a depreciation in the vitality of the blood

cells, which will render them more liable to be invaded by protozoa, for example, or the poisons may remain simply absorbed in the serum. Before any poison which is absorbed from the stomach or intestines by the portal circulation can pass into the general circulation it must go through the liver. Two of the most important duties of this organ are, first, to change harmful into harmless bodies, and secondly, to turn back deleterious substances which may prove injurious to the body. Should it simply perform the latter and fail in the former, the deleterious substances are poured with the bile into the duodenum and thence may again be absorbed, so that a regular round may go on from the intestines to the liver, from the liver to the intestines and back again, for days—possibly weeks and even months—without the poisonous bodies ever getting into the general circulation. This condition may be causal of the common complaint of aching and weight in the region of the liver and also of the bitterness of the bilious vomit. Should the liver fail to perform both of the above functions, the poison is carried on to the right side of the heart, thence to the lungs, where possibly it may be eliminated or rendered harmless by oxidation; from the lungs back to the left side of the heart and on into the aorta and through the system generally, including the brain, the medulla with all the centres it contains, the spinal cord, the nerve fibres, and nerve terminations. It passes to the muscles and to the various secreting and eliminating glands, and may pass out of the body by the kidneys and sweat glands or possibly back into the intestines and stomach, for they are eliminative organs, to be again absorbed. The value of emetics and purgatives and bowel irrigation and stomach lavage is probably due to their removing not only the original putrefactive irritants but also the poisonous bodies that have been eliminated from the circulation into the digestive canal.

From clinical observation two enteric fevers occur in this valley: (*a*) an autogenous fever caused by the invasion of the system by the products of bacteria which are normally present in the intestines, but which have been changed from a state of benignity to a state of virulence; and (*b*) typhoid fever, due to infection by the typhoid bacillus. The autogenous enteric fever may present itself as a simple continued fever; its duration is indefinite and its presence probably favors the invasion of the system by hæmatozoa and bacteria. On the contrary, typhoid fever runs a more definite course and is seldom complicated by a true malarial invasion.

Personally, I class the endemic fevers of Kern County as follows:

(1) Autogenous malaise and fever due to accumulation of tissue waste in the system.

(2) Autogenous enteric fever.

(3) Protozoal fever.

(4) Autogenous enteric fever complicated with protozoal infection.

(5) Typhoid fever.

This classification is clinical and only an attempt at an etiological one, but I find that it gives me a fairly clear mental vision of the probable pathological conditions and a rational basis for treatment.

At the present time the majority of the protozoal infections in Kern Valley correspond clinically with the reported pathological conditions of the tertian parasite. Quartan fever rarely occurs. During the late summer and autumn months continued irregular fevers, somewhat resistant to quinine and with clinical manifestations fitting the reported pathologic conditions of æstivo-autumnal fever, are met with. Pernicious malarial diseases are unknown. Kern Valley is the southern part of the great interior valley of California, the San Joaquin Valley.

Progress of Medical Science.

Ergot.—Dr. Smith Ely Jelliffe in the *Journal of Pharmacology*, vol. v., pp. 73–78, "Some Notes on the Pharmacognosy of Ergot," presents a *résumé* of our knowledge of the chemical composition and the pharmacological action of this little understood remedy. He shows that modern researches in its chemistry have proven that there exist in the drug three peculiar bodies, called by their investigators "ergochrysin," "secalin," and "sphacelotoxin." The most important of these is the peculiar resinous body, "sphacelotoxin, which, however, is found in but small quantities in the drug and can be isolated with difficulty. But in combination with the other bodies above mentioned it forms more or less stable compounds, and is thus amenable to scientific investigation. With ergochrysin it forms a body called by Jacoby, a pupil of Schmiedeberg's, chrysotoxin, and with the other body, secalin, it forms a new body, secalintoxin. Chrysotoxin, which is the combination of the neutral non-nitrogenous base, ergochrysin, with sphacelotoxin, is obtained by precipitation from the ethereal extract of ergot after getting rid of the fat with petroleum spirit. It is a yellowish powder, without smell or taste, readily soluble in ether, chloroform, alcohol, and benzin; insoluble in water. On the frog's heart in doses of from 30 to 50 mgm. (½ to ¾ gr.) it acts as a gradual central paralyzant, without any convulsive action. In fowls there is a change in the circulation of the comb, which produces a violet coloration followed by dry gangrene. It also causes gastro-enteritis in fowls. In pregnant animals in doses of from 0.1 to 0.2 gm. (1½–3 gr.) it produces regular contractions of the uterus, resulting in abortion. The pharmaco-dynamical action of secalintoxin is similar to that of chrysotoxin, but is weaker, and from the evidence at hand the writer believes it to be the same as Kobert's "cornutin." Theoretically the best preparation to use would be a sodium salt of chrysotoxin.

The Diagnostic and Therapeutic Value of Lumbar Puncture.—Monti concludes as follows: 1. Tapping as a diagnostic or therapeutic adjunct is quite worthless, according to his own experiments; but it must be borne in mind that other investigators have discovered in the cerebro-spinal fluid proof positive of the tubercle bacillus, as well as cultivation in other animals, to justify the assertion that it is constantly present. His own opinion is that a negative result does not destroy a positive clinical diagnosis. 2. In acute cases of meningitis cerebrospinalis the cerebral fluid does not contain morbid products which, if applied to animals, as Heubner has shown, may serve to verify clinical observation. 3. When the acute stage has been passed and hydrocephalus is present, no diagnostic assistance can be obtained from the examination of the fluid. 4. As a therapeutic agent it is equally inefficacious in meningitis cerebrospinalis and meningitis tuberculosa. The author qualifies this by saying that individual cases do improve when operated on early and frequently, and when large quantities are abstracted. He recollects one in private practice, of two months' standing, that improved after each tapping, but ultimately proved fatal after three days' illness. 5. The writer states that his experiments are not sufficiently large in meningitis, chronic hydrocephalus, or chronic hydrocephalus in connection with tumors, to justify a critical record of their worth. 6. Further experiments are necessary to determine the quantity of fluid to be abstracted, the interval of time that should elapse between the operations, and how far the therapeutical value, if any, can be demonstrated.—*Medical Press and Circular.*

To Palpate an Appendix.—The examiner standing at the patient's right begins the search for the appendix by applying two, three, or four fingers of his right hand, palmar surface downward, almost flatly upon the abdomen, at or near the umbilicus; while now he draws the examining finger over the abdomen in a straight line from the umbilicus to the anterior superior spine of the right ilium, he notes successively the character of the various structures as they come beneath and escape from the fingers passing over them. In doing this, the pressure exerted must be deep enough to enable him to recognize distinctly along the whole route traversed by the examining fingers the resistent surface of the posterior abdominal wall and of the pelvic brim. Only in this way can he positively feel the normal or the slightly enlarged appendix. Pressure short of this must necessarily fail. —Edebohls.

An easy way is to stand on the patient's right, using three right-hand fingers to feel with and three left-hand fingers placed upon these to press with. The fingers that are to do the feeling are pressed by means of the three others down under the border of the right rectus abdominis muscle at the level of the navel, and slowly drawn toward the examiner. My sole landmark, the ascending colon, is then felt to slip out from under the fingers, and by repeating the process toward the cæcum we soon come to the end of the cæcum, and there begin to hunt for the appendix by rolling the cæcum from one side to the other of the finger tips. The proximal end of the appendix is found near the distal extremity of the cæcum, and we then follow the rest of the appendix in any direction. The proportion of appendices that cannot be palpated will become smaller and smaller as the finger tips become educated. The point about using no muscular effort in the hand that is to be used in feeling is as important in palpating appendices as it is in palpating ovaries and tubes. The very delicate sense of touch is preserved if the left hand is used for pushing upon the examining hand. —Robert T. Morris, "Lectures on Appendicitis," p. 43.

The Conservative Agency of Shock.—Dr. H. G. Wetherill (*Journal of the American Medical Association*, March 12, 1898), in an article on this subject, deduces the following conclusions: 1. Surgical shock entirely unassociated with hemorrhage is a condition rarely seen, and one which may usually be successfully treated in persons who are otherwise in good health. 2. Hemorrhage, though small in amount, is a far more important factor in the production of surgical shock (as it is seen clinically) than we have been accustomed to think it. 3. This mixed shock (traumatic asthenia) should be designated by some distinctive title, or the term shock be construed to comprehend all the factors in its genesis. 4. While not proven, it seems probable that the effects of even a small continuous arterial hemorrhage is to produce through its reflex action lower blood pressure, and in general a condition so like true shock as to be very difficult of differentiation, particularly if the hemorrhage is concealed; as in ruptured ectopic pregnancy. 5. Surgical shock, with or without hemorrhage, must be construed as primarily conservative in its tendencies. The incident prevention of rapid exhaustion, of acute suffering, or great blood loss when the blood-vessels are opened, all tend to the ultimate saving of life. 6. Premature stimulation in the treatment of traumatic asthenia may defeat this conservative effort of nature. Bleeding should be stopped and proper provision made for the comfort and welfare of the patient before strong stimulation is resorted to, unless there is imminent danger of death. 7. Anæsthetics must be sparingly and carefully given to patients suffering from surgical shock (traumatic asthenia), chiefly because they completely obliterate the reflexes. The saturation of the patient with an anæsthetic may turn the scale against him, even though the direct effect of the anæsthetic be stimulant. The same rule holds good in regard to the employment of alcoholic stimulants if too freely used. 8. We should co-operate with and supplement nature's conservative efforts. They are always exercised in behalf of the patient, never against him.

Bacelli's Treatment of Tetanus by Carbolic-Acid Injections.—Dr. V. Ascoli carries out Bacelli's treatment in the following manner (*Academia Medica*, Rome, March, 1898): 0.03–0.04 gm. of carbolic acid, in the form of a two to three per cent. solution, is injected subcutaneously, so that the patient receives 0.35 gm. of carbolic acid a day. No deleterious effect need be feared. The symptoms of tetanus become rapidly less and weaker, and as soon as the injections are stopped the symptoms again become violent. Out of five patients the speaker has thus treated, four recovered, one died. One of these came under treatment on the eighth day, and had severe respiratory and circulatory disturbances; during his whole course of treatment (one month) 15 gm. of carbolic acid were injected. In another case 14 gm. of the acid were injected in fourteen days. At present there are thirty-one reported cases treated by this method, of which number only one was fatal. Comparing this treatment with that by serum injections (tetanus neonatorum is not counted), we have the following: Bacelli's treatment, 1 death in 30 cases; Tizzoni's serum, 8 deaths in 40 cases; Behring's serum No. 1, 4 deaths in 11 cases; Behring's serum No. 2, 2 deaths in 9 cases. The speaker explains the large amount of carbolic acid being injected without causing any symptoms of toxæmia by the peculiar resistance of tetanus patients against this poison.

To Prevent Rigors of Urinary Fever.—C. Mansell Moullin says in *The Lancet*, that the strongest argument in favor of the septic origin of these rigors is the fact that they can be prevented by adopting suitable antiseptic measures. The first essential is to clear out the intestinal canal thoroughly. For some days the patient should be given two or three grains of salol six or eight times in the twenty-four hours. If the urine is alkaline from the presence of a fixed alkali, benzonaphthol is to be preferred, given in cachets, as it breaks up in the intestine into betanaphthol and benzoic acid. Three days before the operation the patient should be given a calomel purge, followed by an effervescing draught, and again the night before. Immediately before the operation the glans penis, prepuce, and meatus should be thoroughly washed with soap and water, and then with corrosive-sublimate solution (1 to 1,000). The urethra itself must be cleansed with a boric-acid douche and a catheter that admits of a return current along the walls. Pass the catheter into the fossa navicularis and wash that out thoroughly, then push it in a little farther and repeat the process, and finally carry it down to the face of the stricture. At the end of the operation the bladder should be emptied by means of a catheter, and two drachms of a two-per-cent. solution of nitrate of silver injected into the deep part of the urethra and on to the face of the stricture and left there. The nitrate is decomposed at once into the chloride, which is thrown down as an insoluble powder on the surface of the mucous membrane, acting as an effectual germicide. Micturition should be postponed for as long as possible after the operation, in order that the surface of the wound may become glazed over, and the patient should not be allowed under any circumstances to get out of bed or expose himself to the least chill.

Pyonephrosis or Renal Congestion ?—Dr. Loumeau reports the case of a woman who had suffered for a long time with an intense cystitis and enormous vesical calculus and uretero-pyelitis; the two kidneys were large and painful, the right more so than the left. At the same time there was evening fever, with dryness and icteric tint of the skin, emaciation and extreme general prostration, and very purulent and fetid urine. The calculus was removed by the vaginal route, and the wound was left in a fistulous state in order better to insure the permanent drainage of the bladder and the ureters. The persistence of renal tumefaction and of the general symptoms indicated the existence of a double pyonephrosis, more developed on the right side. The right kidney was opened by the lumbar route fifteen days after the vesical intervention; it was large and reddish-purple, but neither dilated nor purulent. It was immediately closed with a catgut suture, and the wound was completely healed at the end of eight days. This was not, as was erroneously supposed, a pyonephrosis, but simply a renal congestion. At the end of a few weeks it had entirely disappeared—as well on the left side, which had not been operated upon, as on the right side, which had been operated upon.

Appendicitis.—In an address delivered by Dr. John Fife, president of the California Northern District Medical Society, at its seventh annual meeting, he said: "Certainly appendicitis does subside without the removal of the appendix; and it does so in a very large percentage of cases; nor does it always recur. Indeed, it recurs in but a small percentage of cases. In short, the real dangers of appendicitis—and they are great—have been multiplied. All are agreed that in suppurative cases, in recurring and in fulminating cases, operation is imperative. The controversy over the question has recently waxed quite warm in the East. The defenders of medical treatment have presented their views at much length, and have offered their statistics to substantiate them. The surgeons have examined them, and have first doubted and then sneered at the diagnoses, and in turn have presented their statistics, which certainly reflect credit both upon their operative skill and upon the efficacy of asepsis in surgical work. But it should not be forgotten that the same degree of skill, the same perfection of aseptic conditions and surroundings, and the skilled nursing are rarely to be had outside the hospitals of cities, to say nothing of the fact that because an operation is successful it does not follow that it is necessary. Time is necessary in order to define the limits of the operation. Meantime the wise general practitioner will operate only when operation is plainly indicated."—*Occidental Medical Times.*

Treatment of Abdominal Contusions.—Dr. Eugene St. Jacques says that there are a number of means of combating shock in general and internal hemorrhages, of calming any pain present, of mobilizing the wounded region or the affected organs, the aim of all of which is to favor natural cure and to prevent complications, or to cure these complications if they should arise. Stimulants, injections of different serums, ether, or caffeine, absolute rest, diet, ice internally and externally, opium in all its forms, and different medical treatment according to the indications of the morbid state, form the basis of these methods of treatment. "In the presence of a very severe shock or of a very light one, there is unanimity in regard to the means to be employed. We have succeeded in obtaining a cure in extensive tears or rents of the liver, spleen, and kidney. But agreement ceases in doubtful cases." Among the surgeons who took part in the discussion of Dr. St. Jacques' remarks was Le Dentu, who said that, except in cases of rupture of the kidney or bladder, the direct diagnosis of visceral lesions caused by abdominal contusions is open to numerous chances of error. In doubtful cases some wish a purely medical treatment; a second class refuses surgical intervention as long as the peritoneum shows no inflammation, or as long as collapse is not imminent; another class resorts to laparotomy as soon as the symptoms appear to be in the least serious. Le Dentu holds that a purely exploratory laparotomy is justifiable whenever the diagnosis is doubtful and circumstances permit *a priori* the possibility of visceral lesions. Intervention ought to be as hasty as possible, the least hemorrhage necessitating immediate action, but in general it is well to allow the wounded patient an hour or two to recover from the violence of the initial shock.

The Tuberculin Test.—Mr. Cameron, veterinary inspector to the board of health of Victoria, has presented a report showing the result of his experiments with tuberculin as a test for tuberculosis in dairy cattle. If properly applied he believes it never fails. Characteristic experiments were made on the herds at the Leongatha labor colony. A number of cows reacted to the test, and, being slaughtered, were all found to have tuberculosis. Forty showed no reaction and fifteen months later were again subjected to the test and showed no reaction. Two were slaughtered and found to be free from tuberculosis. Mr. Cameron is satisfied that if all dairy herds were tested, and the animals infected were condemned and slaughtered, tuberculosis in cattle could be easily stamped out.—*The Lancet.*

The Radical Cure of Congenital Hydrocele.—Dr. Menciere (*Archives Cliniques de Bordeaux*) reports two cases of congenital hydrocele in which the following operative method was used with perfect satisfaction. The operation consists in making a long incision along the long axis of the tumor; that is to say, from above downward, the incision being prolonged to the inguinal ring. The serous membrane should be freely incised, as is done in the method of Volkmann. The peritoneal-vaginal canal should be destroyed by cutting transversely through it with the scissors. The edges of the serous sac thus formed should be brought together and sutured with catgut in such a way that the testicle will be contained in a reconstructed vaginalis, smaller than the first. Above this new vaginalis the serous membrane should be cut to a certain height, so that the peritoneal-vaginal canal will be destroyed beyond a doubt. Then, considering the superior part of this canal as a hernial sac, proceed with the radical cure of hernia. The inguinal ring is closed, the portion of the peritoneo-vaginal canal immediately beneath is destroyed—that is, excised; the testicle is contained in a new vaginalis smaller than the first, whose walls have been destroyed according to the method of Volkmann, the cavity not having ulteriorly any communication with the abdominal cavity. This method, differing from that described by Faure and from that which consists in simply practising a radical cure as in a hernia, is habitually employed. Here the author is not content with opening the vaginalis and reckoning on an adhesive inflammation to obliterate the peritoneo-vaginal canal. The surgeon should not only destroy the canal, but should also close the inguinal ring. Again, instead of leaving the vaginalis to repair itself, as one does after operating for the radical cure of hernia, catgut sutures are employed to reconstruct it immediately. The operator can, with impunity, reconstruct the vaginalis and afterward close the inguinal ring; but in the case of congenital hydrocele accompanied by hernia it is preferable to close the inguinal ring first, as indicated, and then proceed to repair the vaginal cavity

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HYSTERECTOMY FOR CANCER OF THE UTERUS.

THE first extirpation of the prolapsed uterus for cancer is said to have been performed in 1560 by Andreas A. Cruce. The non-prolapsed uterus was removed per vaginam for the first time in 1822 by Sauter, of Constance. In 1829 Recamier placed the operation on a scietific footing by ligaturing the base of the broad ligaments, while the credit of having made the clamp a practical success belongs to Péan and Richelet. To such a degree of efficiency has the operative treatment of uterine cancer been brought that the palliative treatment, although still advocated by some well-known surgeons, has ceased to be in favor with American and English operators. The only valid argument against hysterectomy is the difficulty in making a diagnosis in the early stages of uterine cancer. The mortality from operations has diminished, but the fact is still with us that the cancerous disease has too often advanced beyond the uterus before the radical operation is performed, and many cases when presented are inoperable, at least by the vaginal route. Thus the necessity for early and frequent examination is strongly indicated.

The records of some of the European operators on cancer of the uterus are so phenomenal as almost to give rise to feelings of doubt. For instance, Hofmeier declared that thirty-three per cent. of his patients were in perfect health four years after operation; Schauta, of Prague, claimed forty-seven per cent. of complete recoveries two years after operation; Olshausen, of Halle, forty-seven and one-half per cent. without recurrence in two years; while Leopold had the remarkable record of seventy-two patients, out of a total of seventy-six, still alive and in absolute health from one to five and one-half years after operation. Although no American surgeon can show results so successful as the foregoing, yet many can point to very satisfactory records.

Dr. Emory Lanphear, of St. Louis, has recently published in the *American Journal of Surgery and Gynecology* a report of the cases operated upon by him, and states that his total number of hysterectomies has been 109; of the patients 7 have lived more than six years, 13 more than five years, 12 more than three but not yet five years; 15 died from the operation or soon after, 1 died from recurrence after three years, 7 died from recurrence before three years; 2 were living with recurrence after three years, 6 were living with recurrence before three years. The total number of recurrences known was 16, and of recurrences suspected, 10. One died from other causes without recurrence after five years, and 3 died from other causes without recurrence after three years. Thirty-two were lost sight of or were still in the danger period at the time of the report. These figures show a primary mortality of 14 per cent., but the mortality of the last 31 cases under recent careful methods of operating was only 6 per cent. Dr. Lanphear argues that even if his 7 patients who have now lived more than six years should prove to be the only ones truly cured of the entire list, the 109 operations were fully justified, and if the 20 who have passed five years are considered, the question must be favorably answered, even by the most conservative. Dr. Lanphear concludes his paper with the following rules as to when hysterectomy is not indicated: (1) Whenever the disease is so far advanced that the uterus is fixed in the pelvis; (2) whenever it is certain there is extensive cancerous infiltrate in the broad ligament; (3) whenever the cancer involves the bladder; (4) when the "cancerous cachexia" has become pronounced; (5) when the patient is too weak from repeated exhausting hemorrhages; (6) whenever the diagnosis of sarcoma of the uterus is quite certain. In such cases there is always recurrence after removal, and the patients die quickly.

THE NEGRO DEATH RATE.

THE physical degeneracy of the Afro-American race is a self-evident fact that can no longer be ignored or explained away. The educated negro is compelled to acknowledge that since the abolition of slavery there has been a rapid increase in the rate of mortality among the colored people. This confession is in itself an excellent sign and augurs well for the future. It is much the better policy boldly to face ills than to brush them aside and stigmatize them as the inventions of enemies.

At a conference recently held at Hampton by leading members of the negro community the keynote pitched was the thorough appreciation by the speakers of the real situation. The most able paper presented to the meeting was one contributed by Dr. Furness J. Shadd, of Washington, his subject being "A Remedy for the Excessive Mortality of the Negro." After pointing out that, even under the most favorable sanitary conditions, the death rate of negroes is more than double that of whites, Dr. Shadd says: "Negro mortality must be reduced, is the watchword of every intelligent person. While we deplore the promulgation of facts which are detrimental to us, yet the end will justify the means. We must have results, not sentimental speculation. Among the most fruitful causes of this alarming death rate are the following: Infant mortality, tuberculosis, scrofula, specific infection, gastro-intestinal diseases, heredity, and environment. Most of these conditions can be changed by the negro himself without the aid of outside influences. Only those persons who come into intimate contact with

the colored people can fully appreciate their racial traits and characteristics. Only after very careful inspection should we attempt to answer as to the social problems affecting the vital conditions of the negro to-day and his conditions in the future. My observation leads me to believe that more factors inimical to the race are found within than without."

With regard to the great susceptibility of the negro to consumption, Dr. Shadd remarks: "Consumption is the greatest enemy the negro has except his vices. . . . My experience teaches me that the negro cannot stand local tuberculous infection without running great risk of pulmonary complications, and, furthermore, I think that the mulatto is more susceptible than are the blacks." The author then touched upon the manner in which negroes live in the large cities, and said: "The condition of the negro in all the large cities is a theme worthy the attention of each of us. I know him as he is under the shadow of the goddess of liberty within the District of Columbia. The habits, the disposition, the clannish congregation of most of the race, compel them to inhabit parts of the city densely populated, from which they may easily go at all hours of the night from house to house, from church to church, to meet kindred spirits, whose only aim in life is to eke out a mere living, with sufficient time after work for the gratification of their pleasures. Hence we find them living in alleys and courts, where families of more than a dozen often occupy very narrow quarters. The sanitary conditions of these houses are frightful. Can we wonder that death claims many who are so situated?" Dr. Shadd winds up his interesting contribution with the statement that, in his opinion, heredity plays the most prominent part in the physical retrogression of the colored race. The paper, emanating from an Afro-American, and one who is besides scientifically familiar with his subject, is highly instructive, and should tend to bring in vivid colors to the perceptions of both white and black that the unhappy condition of the negroes is a public menace, and should incite philanthropists to grapple more energetically with the difficulties of the situation than has hitherto been the case.

MALARIA AND ENVIRONMENT.

Laveran's discovery of the hæmatozoon malariæ is believed by the majority of medical investigators to have settled the question of the pathology of the malarial fevers. There are still, however, some sceptics who are unwilling to admit that such is the case, and who contend that the cause of malaria is environment. Among these unbelievers is Dr. M. D. O'Connell, a surgeon in the British Indian army, who has recently published a pamphlet upholding his views. He asks the question, "Can environment cause malaria?" and answers it in the affirmative for the following reasons: 1. The meteorological environment under which ague becomes prevalent is a hot, moist, stagnant atmosphere. 2. Exposure to this malarial environment produces an intermittent increase of water in the blood. 3. Intermittent increase of water in the blood in ague reduces temperature to normal; the increase of temperature in malaria produces: (*a*) wholesale destruction of red blood corpuscles; (*b*) increase of pigment, free or inclosed in bodies of various shapes, melanæmia; and (*c*) enlargement of the spleen."

The writer next points out a definite and appreciable condition of the blood which will cause some to contract ague in climates not considered malarial, while others will not do so in the most malarial climates. Dr. O'Connell's reasoning in support of his opinions, though plausible and intelligently thought out, is too elaborate and lengthy to treat in full; but in brief his theory is that ague is produced by an excess of water in the blood due to environment, as opposed to Laveran's plasmodium theory. Nevertheless, in view of the recent brilliant work done by Ross in support of the parasitic origin of malaria, it may be said that Laveran's discovery now stands on a firmer basis than ever. In fairness to Dr. O'Connell the fact should be mentioned that, while he holds that ague or intermittent fever is caused by environment, he does not believe that remittent or other form of malarial fever is due to this cause.

ZOLA A NEUROPATH.

Anthropology—thanks to the labors of Lombroso and other scientific men of the Italian school—occupies a much more prominent position than was at one time accorded to it. Max Nordau's startling theory that genius is only a form of degeneration, although not accepted in its entirety, is yet regarded by many as worthy of some consideration. Until recently no genius has offered himself as a subject for investigation. Now, however, Zola has stepped into the breach and has allowed a thorough study of himself to be conducted by a number of French specialists. Whether Zola can be looked upon as a genius is a point upon which probably no two persons will agree, but that he is possessed of abilities far above the average will be conceded by all; and that he has, judging from his writings, many of the mental attributes of degeneration, will also not be denied. It appears from the investigations, the results of which are published in a pamphlet by Arthur MacDonald, that physically Zola is somewhat abnormal, but not peculiarly so; that he is neither epileptic nor hysterical, nor is there the slightest sign of mental alienation. Although he has many nervous troubles, the term "degeneracy" does not apply to him wholly. Magnan classes him among those degenerates who, though possessing brilliant faculties, have more or less mental defects. It is true that Zola has orbicular contraction, cardiac spasms, thoracic cramps, false angina pectoris, sensory hyperæsthesia, obsessions, and impulsive ideas; his emotivity is defective, and certain of his ideas are morbid; but all this is not sufficient to affect in any appreciable manner his intellectual processes. His strong and harmonious constitution give him immunity; his intellect is not contaminated. Toulouse says he has never seen an obsessed or impulsive person who was so well balanced. Yet Zola is a neuropath —that is, a man whose nervous system is painful.

Heredity seems to have caused this tendency, and constant intellectual work to have affected the health of his nervous tissues. Now it is a question whether this neuropathical condition is not an excitation that has given rise to the intellectual ability of Zola; whether a diseased nervous system is a necessary cause of great talent or genius is quite another question. Yet pathological facts have been such constant concomitants of great talent and genius that the relation seems to be more than a temporal one, and suggests the idea of cause and effect. However, before this burning question is finally decided, it will be necessary to make a study of several other geniuses.

News of the Week.

A Gift to the Cornell Medical College. — Mr. Oliver H. Payne has given $1,500,000 to Cornell University for the benefit of the newly established medical department in this city. The money goes for the purchase of land, the erection of a building, and a liberal endowment. A plot of ground on the west side of First Avenue, running from Twenty-seventh to Twenty-eighth Streets, has been purchased, and a five-story building will be erected on it. Work on this will be begun almost immediately, and the building will be ready for occupancy in a year from this time. The faculty of the new college is substantially the old faculty of the University Medical College. As the result of a controversy with Chancellor McCracken and some of the trustees of the university, the medical faculty resigned and united with Cornell, to found a medical department of that university. Mr. Payne, who was one of the trustees of the university, and who some years ago gave $150,000 to the medical school, sided with the medical faculty in the dispute with the university authorities. The full four-year course of the Cornell University Medical College will be given in New York, and the course of the first two years will also be given in Ithaca. Men students may take half the course in Ithaca and the other half in New York, or the entire course in New York; women students must take the first half of the course in Ithaca (where a home is provided in the Sage College for women) and the last half in New York.

A New Journal.—We have received the first number of *The Psychiater*, a quarterly journal published by the medical staff of the Illinois Eastern Hospital for the Insane, and intended to contain reports of clinical observations and investigations in the microchemical, pathological, and psychological laboratories of this institution. The first number contains the following papers: "Professional Work in Hospitals for the Insane," by William G. Stearns, M.D.; "Report of Three Cases of Brain Tumor with Special Reference to the Pathology of Neuroglioma and the Psychical Changes Caused by Brain Tumors," by A. F. Lemke, M.D.; "The Early Diagnosis of Paretic Dementia," by V. Podstata, M.D.; and "Laboratory Psychology as Applied to the Study of Insanity," by William O. Krohn, Ph.D.

Camp Wikoff has been again investigated, this time by Deputy Surgeon-General Charles Smart, and pronounced good. He says that the site of the camp is excellent, the soil is firm and compact, the sanitary conditions are good, and there is no danger of an epidemic of typhoid fever. Dr. John W. Brannan, of this city, recently called the attention of President McKinley to the inhumanity of shipping soldiers ill with typhoid and malarial fevers from Montauk to Long Island City, and suggested that the soldiers about to go away on furlough be inspected by the surgeons before being allowed to leave the camp. As a result of this the barbarous business, such as was described by Dr. W. Gilman Thompson in the MEDICAL RECORD of last week, has practically ceased.

The Hospitals at Camp Thomas.—Generals Sanger, Mattocks, and Roe, who were recently at work at Chickamaugua as a hospital and camp examining-corps, report that the conditions in the various hospitals were found to be very unsatisfactory. They state that the hospitals were not provided with the proper necessities, that they did not have a sufficient number of attendants, that they were badly located, and that they were in every way inadequate. Major Ward, brigade surgeon at Camp Thomas, has made a statement in which he is reported to have said that the hospitals were poorly managed and great suffering resulted. The cause for the lack of care of the sick was the want of everything that goes to make up proper hospital equipment. The number of patients in the hospital was more than double what it should have been. "The endless red tape necessary to go through with an order to secure supplies and hospital equipment made it impossible to meet such an emergency as had to be met at Camp Thomas. There was never at any time during the first two months a single hour that there were cots, tents, medicines, nurses, or food sufficient to meet the demands of those suffering men. The prescriptions had to be made to fit the medicines on hand instead of the needs of the patients." It is difficult to fix the responsibility for this condition of things. Red tape is chiefly to blame, army officers refusing to pay attention to requisitions for supplies unless they filled all the technical requirements in every way.

A War Department Investigation.—President McKinley has decided to appoint a committee to examine into the conduct of the commissary, quartermaster, and medical bureaus of the war department during the war, and into the extent, causes, and treatment of sickness in the field and in the camps. In his letter to those asked to serve on the committee he says that it is his desire that the full and exact truth shall be ascertained and made known. Dr. W. W. Keen, of Philadelphia, is mentioned as the medical member of the committee, and is reported to have accepted the President's request to serve. Several of those who were asked to serve have declined.

Cocaine is much less frequently employed in dental practice than formerly, and the strength of the solutions employed has also been reduced. Ten-per-cent solutions were commonly used some years ago, but now a two-per-cent. strength is seldom exceeded.

General Wood's Sanitary Work.—The city of Santiago, long known as a breeder of pestilence and one of the dirtiest and most unhealthy places in dirty and unhealthy Cuba, has been in American hands only about two months, and is now in a condition of cleanliness that New York might almost have envied a few years ago. Under the system introduced by General Wood, who, it may be remembered, is a physician, Santiago is divided into five sections, each one under the general supervision of a medical man, who has under him inspectors of sewers, streets, houses, and dispensaries, and a number of street cleaners. Five hundred cubic yards of refuse are burned daily, disinfectants are distributed wherever they are needed, and a heavy fine is imposed for uncleanliness or for any failure to report unhealthful conditions and deaths. The results are shown in a decrease in the death rate within a month from an average of seventy to one of twenty a day. Among the troops the principal diseases are typhoid, malarial, and yellow fevers, and dysentery. The cases of yellow fever, several of which have been among the so-called immunes, are few in number and the disease is of a very mild type. The mortality from malaria or dysentery is much greater than that from yellow fever. Now that the Spanish troops have all left for Spain, it is hoped that yellow fever can be made still less dangerous through the continuance of Dr. Leonard Wood's good work.

The Utility of First-Aid Packets.—In a report of the medical work at Santiago, made to the surgeon-general by Lieut. Guy C. M. Godfrey, assistant surgeon, United States army, commanding officer of the hospital corps, company F of the first division of the fifth army corps, the writer says that during the battle the first-aid work was very effective and was done mostly by regimental surgeons and their hospital squads. Many dressings were applied by the line officers and soldiers on the firing-line, and in some instances by the wounded men themselves. Major S. Q. Robinson, who commanded the Aguadores dressing-station on July 1st, says that only about ten patients came there who had not been dressed by first-aid packets. Words can hardly express the appreciation which the officers and men of the line have for the first-aid packets. They realize now as never before the value and importance of instruction in first-aid work. The very small number of suppurating wounds can readily be accounted for by the prompt application of these dressings.

Dr. Archibald D. Busby, assistant surgeon of the seventy-first regiment, is at the home of his sister in this city, ill with typhoid fever. He was detailed to care for the members of the regiment who were too sick to leave Santiago with the organization, and arrived in New York only a week ago, having reached Camp Wikoff on the transport *Missouri*.

Winter Hospitals for the Troops.—Workmen have been busy for some weeks, under the direction of the army medical department, erecting a hospital on the government reservation at Fort Monroe, and Lieutenant-Colonel Woodhull, the surgeon in charge, has reported that the hospital is now ready for the reception of troops. There is already at the fort a tent hospital, capable of accommodating five hundred patients. The new hospital is built of wood and contains accommodations for one thousand patients. It is intended for the reception of sick soldiers returning from Porto Rico. Looking ahead to the possibility of an extended occupancy of Cuba by the United States army, Surgeon-General Sternberg is planning for another hospital on an even larger scale at one of the Southern ports, more accessible from Cuba, probably Charleston or Savannah. He has appointed a medical board to make an inspection of the available places, and as soon as a site is selected work will be begun on the buildings.

He's a Real Good Prince.—We are pleased to learn on the best authority that during the past fortnight the progress made by H.R.H. the Prince of Wales has been very gratifying to his surgeons. Indeed, during the five weeks and a few days which have now elapsed since the accident nothing has occurred to interrupt the progress of the case. The local conditions are all satisfactory. . . . The prince is fully aware of the long interval which must ensue before the repair of the injury he has so unfortunately sustained is thoroughly accomplished and is quite prepared to submit to all the restrictions which the need for incessant care entails. The fortitude, good temper, and patience that he has shown under circumstances so trying are admirable, and we feel sure he possesses the sincerest good wishes and sympathy of the entire community.—*The Lancet.*

The Plague in India.—The number of deaths in India from the plague, during the present epidemic, has now passed the one hundred thousand mark. This is only the number of deaths officially reported. It is well known, however, that a great many cases of the disease are never reported, and even the deaths are concealed, being attributed to fever and lung complaints. Hitherto the disease has spared Europeans, with the exception of nurses and others in close attendance on the plague-stricken, but the deaths of two English ladies at a small place on the Western Ghats have caused alarm as suggesting the possibility of an extension of the disease to others than natives. The problem how to fight the plague without offending the religious prejudices of the natives is puzzling the authorities. The natives argue that the system of public hospitals has proved intensely distasteful to all classes, and that some other method must be tried if the officials are to secure the co-operation of the people. In certain villages good results have been obtained by removing the population from an infected area, but this is obviously impossible in capitals like Calcutta or Bombay.

Tri-State Medical Society.—The tenth annual meeting of the Tri-State Medical Society of Alabama, Georgia, and Tennessee, will be held at Birmingham, Ala., Tuesday, Wednesday, and Thursday, October 25, 26, and 27, 1898. The president of the society is Dr. J. A. Goggans, of Alexander City, Ala., and the secretary Dr. Frank Trester Smith, of Chattanooga.

The New York State Medical Association.—The following is the preliminary programme of the annual meeting of this association, to be held in this city on October 18th, 19th, and 20th: "A Practical Demonstration in the Reduction of Infantile Mortality," by Dr. E. F. Brush, of Mount Vernon; "The Pneumogastric Nerve in the Production of Stomach Disease," by Dr. Julius Pohlman, of Buffalo; "The Coccyx," by Dr. J. E. Walker, of Hornellsville; "Drugs *versus* Cardiac Insufficiency," by Dr. O. T. Osborne, of New Haven; "The Passing of Alcohol," by Dr. J. M. Farrington, of Binghamton; "A New Method of Amputation at the Knee-Joint, Applicable in Cases of Senile Gangrene of the Foot," by Dr. Stephen Smith, of New York; "Anthropological Rambles in the Orient, Especially in the Island of Java; Profusely Illustrated with Stereopticon Views," by Dr. H. Ernst Schmid, of White Plains; "Dental Pathology in its Relationship to General Health," by Dr. Dwight L. Hubbard, of New York; "Subnormal Temperature," by Dr. Leroy J. Brooks, of Norwich; "Ancient and Modern Animal Products Used as Medicines," by Dr. T. J. Acker, of Croton-on-Hudson; "The Treatment of Cases of Pulmonary Tuberculosis that Cannot Go away from Home," by Dr. Delancey Rochester, of Buffalo; "Some Observations of General Interest Regarding the Course and Management of Cataract," by Dr. J H. Woodward, of New York; "Technics and Use of Saline Infusion," by Dr. Thomas F. Reilly, of New York; "What to Do to Be Saved, Being the Conclusion of the Inquiry into the Abuse of Medical Charity," by Dr. Thomas J. Hillis, of New York; "True and False Medical and Other Charities," by Dr. Wickes Washburn, of New York; a paper by Dr. Charles Phelps, of New York, title not yet announced; "Genital Neuralgia and the Genito-Reflex Pains," by Dr. F. P. Hammond, of New York; "Lantern-Slide Exhibition," by Dr. S. Alexander, of New York; "A Case of Attempted Obliteration of the Deformity in Pott's Disease," by Dr. Charles Allen Tuttle, of New Haven; "Notes on Neuralgic Affections of the Head," by Dr. Gustavus Eliot, of New Haven; "The Use of Catgut Sutures in Ventrofixation of the Uterus," by Dr. J. E. Janvrin, of New York; "Traumatic Tetanus—Report of a Case Following an Attempted Operation, Treatment, etc.," by Dr. Z. J. Lusk, of Warsaw; "Some Thoughts on Rational Treatment of Disease," by Dr. Chauncy P. Biggs, of Ithaca; "Senility," by Dr. F. W. Higgins, of Cortland; "A Case of Extra-Uterine Pregnancy Operated upon at Term," by Dr. Eli Van de Warker, of Syracuse; "Memoranda," by Dr. H. D. Didama, of Syracuse; "Diagnosis and Surgical Treatment of Renal Calculus," by Dr. N. Jacobson, of Syracuse; "Eye Lesions in Some Diseases of the Kidney," by Dr. H. S. Oppenheimer, of New York; "Insanity Following Surgical Operations," by Dr. W. D. Granger, of Bronxville; "Dermoid Cysts of the Ovary," by Dr. C. E. Fritts, of Hudson; "The Operative Cure of Inguinal Hernia in Men," by Dr. E. D. Ferguson, of Troy; "Urethral Stricture," by Dr. J. W. S. Gouley, of New York. A discussion on intestinal obstruction will comprise the following papers: "Introduction," by Dr. Parker Syms, of New York; "The Causes of Acute Intestinal Obstruction, with the Description of their Mechanism," by Dr. E. D. Ferguson; "The Causes of Chronic Intestinal Obstruction, with a Description of their Mechanism," by Dr. J D. Bryant, of New York; "Intestinal Osbtruction Due to Impaction of Fæces, Gall Stones, Foreign Bodies, etc.," by Dr. J. W. S. Gouley; "The Diagnosis and Indications for Treatment of Acute Intestinal Obstruction," by Dr. J. D. Rushmore, of Brooklyn; "The Diagnosis and Indications for Treatment of Chronic Intestinal Obstruction," by Dr. Leroy J. Brooks; "Intestinal Obstruction Due to Intussusception and Volvulus," by Dr. John F. Erdmann, of New York; and "The Technic of Operative Treatment of Intestinal Obstruction," by Dr. Frederick Holme Wiggin, of New York.

The Responsibility for Injuries Resulting from Hazardous Employments.—A case is reported in the New York *Times* of a man, who was employed as assistant engineer in white-lead factory in Brooklyn, who recently brought suit against the company, charging that, while the business carried on by it was dangerous to the life and health of those employed, the company failed to inform him of such danger, but, on the contrary, told him there was no danger. The plaintiff asserted that he was ignorant of any such dangerous effects, and that his system became thoroughly permeated, impregnated, and saturated with lead poison, so that at the end of a year he was permanently disabled from work. A judgment given in favor of the defendant on the trial has been affirmed by the second appellate division, which held, in an opinion by Presiding Justice Goodrich, that a "person employed in a white-lead factory takes the risk incident to the employment. Where the common knowledge of men and a constant opportunity to see the precautions which were observed in the factory, some of which Berry was directed to observe, the sickness of workmen, and the notice that there was danger from lead dust, showed that he possessed knowledge of the conditions and consequences of his employment, the fact that during the course of such employment he was stricken with paralysis gives him no right of action against his employer. The fact that only two cases can be found in the records of the State in which an action has been brought upon such ground offers a strong presumption that actions of this character are not maintainable."

Texas Fever in California.—It is reported from San Bernardino, Cal., that Texas fever has broken out among the cattle on the Mojave River, near Rock Springs. The supervisors have ordered the county veterinary surgeon to visit the locality, to investigate the report. It is said that the disease was brought from the coast counties.

Dr. William L. Rodman, lately of Louisville, has accepted the chair of surgery in the Medico-Chirurgical College of Philadelphia. He occupied that chair, as well as the chair of surgery in the Kentucky School of Medicine, last year, but has now resigned the latter.

The Assassination of the Empress of Austria.—A post-mortem of the murdered empress has shown that the blow of the assassin broke the fourth rib, the weapon piercing the lung and the left side of the heart and penetrating three and one-third inches. After being stabbed the empress walked to the steamer, a distance of fifty yards, and it was only after reaching the vessel that she fell. The wound in the heart muscle was only a sixth of an inch in length, and the elasticity of the myocardium partially closed this and prevented an immediately fatal loss of blood.

Koch Going to Study.—It is reported that Professor Koch has at last awakened to the fact that his alleged discoveries regarding malaria were discovered long ago, while he was making tuberculin; he has accordingly gone to Italy to spend several months in the study of malaria, and is at present working in the hospitals at Rome. The results of his investigations, remarks an English contemporary, will be awaited with much interest, for it must be confessed that some of his recent utterances on this subject have caused no little surprise, since they appear to have been founded upon a somewhat hasty inquiry.

Obituary Notes.—Dr. Eugene S. Forman, of Auburn, N. Y., died suddenly of apoplexy on September 13th, at the age of fifty-one years. He was a graduate of the medical department of the University of Buffalo in the class of 1870.—Dr. George Trowbridge, of this city, died suddenly on September 10th, at the age of forty-three years. He was a graduate in arts of Yale College in 1878, and in medicine of the College of Physicians and Surgeons in 1881. He retired from practice some years ago.—Dr. E. S. Tyner, acting assistant surgeon in the army, died at Santiago on September 9th, of yellow fever.—Dr. James E. H. Nichols, of New York, died in North Carolina on September 10th, of pulmonary tuberculosis. He was forty-one years of age, and was a graduate of the College of Physicians and Surgeons in the class of 1885. He was a member of many medical societies and was an attending surgeon in the throat department of the Manhattan Eye and Ear Hospital. He went South about a year ago on account of his health, which had been failing for some time.

The American Microscopical Society.—The twenty-first annual meeting of this society was held in Syracuse, N. Y., August 30 to September 1, 1898, under the presidency of Dr. V. A. Moore. The following officers were elected to serve during the ensuing year: *President*, Dr. William C. Krauss, of Buffalo; *First Vice-President*, Prof. A. M. Bleile, of Columbus, Ohio; *Second Vice-President*, Dr. G. C. Huber, of Ann Arbor, Mich.; *Secretary*, Prof. Henry D. Ward, of Lincoln, Neb.; *Treasurer*, Mr. Magnus Pflaum, of Pittsburg; *Executive Committee*, Prof. S. H. Gage, of Ithaca, Dr. A. Clifford Mercer, of Syracuse, and Dr. V. A. Moore, of Ithaca.

Starvation in Russia.—Another famine is imminent in certain provinces of eastern Russia, especially in Kazan. Owing to a prolonged drought, the harvests have failed utterly and fodder for cattle has already become exceedingly scarce. There is scarcely a wisp of hay or straw, and in some parts the cattle are being fed with old material taken from the thatched roofs of the peasants' cottages. What oxen and horses cannot be sold at greatly reduced prices are dying from starvation or from sickness caused by spoiled and unsuitable fodder. There is still enough wheat for present needs, but the distress is expected to be far greater in the coming winter, when the population, already impoverished and exhausted by previous years of want and scarcity, will have little strength to bear the privation of long-continued famine.

A Fund for Women Medical Students.—According to the provisions of the will of Miss Arethusa L. Forbes, which was filed for probate in the surrogate's office in Brooklyn a few days ago, the residuary estate, after a few bequests to relatives, is left in trust with instructions "to apply the net income of all the estate which shall remain after the payment of existing debts to the payment of the tuition and instruction of meritorious young women at the Woman's Medical College of the New York Infirmary."

An Anticigarette Law.—An ordinance has been introduced in the New York City legislature providing that "any person or persons who sell or cause to be sold or given away tobacco or cigarettes, whether composed of tobacco or any other substance, to any child or minor under the age of eighteen years, within the limits of the territory embraced in the city of New York, as now constituted, shall be guilty of a misdemeanor, and upon conviction thereof shall be punishable by a fine of $10 or ten days' imprisonment, or both, within the discretion of the magistrate trying such offence." There is already in existence a State ordinance making it a misdemeanor for any one to sell or give tobacco or cigarettes to a person under the age of sixteen years.

Pictures for Hospitals.—A movement is on foot in Allegheny, Pa., to establish an association for the loaning of pictures to be hung on the walls of the hospitals, the pictures to make the tour of the hospitals and then to be returned to their owners. One of the originators of the movement has offered sixty of the pictures from his home. In a letter accompanying his offer, he said that many persons spend a part of the year out of the city, and during that time the pictures would do much good in the hospitals without in the least depriving their owners of the enjoyment of them.

Health of the Troops at Ponce.—There have been several cases of supposed yellow fever among the American troops quartered at Ponce, Porto Rico. It is not feared, however, that an epidemic of serious proportions will arise. There is an abundance of medical supplies there, and arrangements have been made to send immune surgeons and nurses to Ponce immediately, should the need for them become apparent. There is considerable sickness, chiefly diarrhœa, among the troops on the south shore of Porto Rico, about fifteen hundred men out of a total of eleven thousand being on the sick-list. The number of cases of typhoid fever is decreasing and no epidemic is apprehended.

Clinical Department.

GASTROSTOMY FOR STRICTURE OF THE ŒSOPHAGUS, WITH REPORT OF CASE.[1]

By EARL M. GILLIAM, M.D.,

SURGEON TO ST. ANTHONY'S HOSPITAL, COLUMBUS, OHIO.

FRANK D——, aged fifty-nine, widower, by occupation a laborer, residing at Canal Dover, Ohio, was admitted to St. Anthony's Hospital, October 23, 1897, for treatment of œsophageal trouble. I saw him the next morning and obtained the following history: His health had always been good up to last July, when suddenly he became unable to swallow solid food. This inability grew worse rapidly, and by the latter part of August he was compelled to subsist entirely on liquids. In ten weeks he lost nearly fifty pounds. The family history was good, there being no evidence of trauma, syphilis, or tuberculosis. On the introduction of a bougie into the œsophagus, a stricture was revealed near the juncture of the middle and lower portions of the tract. Daily introductions of the bougie having failed to accomplish the slightest improvement, an operation was suggested, to which the patient readily consented.

On the morning of October 30th gastrostomy was performed by the Sabanajew-Frank method. An incision three inches long was made along the left costal border into the peritoneal cavity. The stomach was drawn out of the opening a sufficient distance, and the abdominal cavity completely shut off from the field of operation by the introduction of interrupted silk sutures through the muscular and peritoneal coats of both the stomach and the abdominal wall. One and a half inches to the left and parallel to the first, a second incision was made, but only skin deep. The two incisions were then connected by tunnelling beneath the integument, and through this passage the tip of the gastric fold was drawn and sutured to the margin of the second opening; meanwhile the first incision was closed. Although the operation consumed but thirty minutes, the patient was greatly shocked; nevertheless applications of hot-water bags and injections of strychnine caused him to rally nicely.

The stomach was opened on the fourth day and a rubber catheter inserted, through which hot water and milk were injected. Three days later a larger tube was substituted for the catheter, and by attaching a funnel to it the patient managed to feed himself. In less than four weeks he gained twenty pounds. Six weeks after the operation he contracted a severe cold and was confined to bed three days, complaining constantly of excruciating pain in the region of the heart. On getting up for the first time he started to walk across the ward, but had taken only a few steps when he suddenly fell to the floor and expired.

A post-mortem examination was held that morning. The heart was found enlarged and covered with a material closely resembling colloid. The lungs, liver, and stomach appeared healthy. The diseased part of the œsophagus was removed for careful examination later on.

I was fortunate in obtaining two photographs of this case. The first was taken on the tenth day following the operation, and the second at the time of the post-mortem. Fig. 1 shows the cicatrix of the first incision and also the tube *in situ:* Fig. 2 clearly demonstrates the successful union between the abdominal and visceral parietes.

FIG. 1.

Dr. Upham, of this city, to whom I am greatly indebted, kindly consented to examine the specimen, and reported it to be malignant.

The lumen at the site of constriction was but one-eighth of an inch in diameter. No rupture was found.

Gastrostomy was suggested by Egeberg, of Norway, in 1837. He believed that in cancerous or cicatricial stenosis of the œsophagus there was a possibility of prolonging life and relieving suffering by establishing a gastric fistula. Nothing was done until 1849, when Sedillot, of Strasburg, performed the first operation. In 1874 Sidney Jones, of London, and Jacobi, of New York, reported the first successful cases; prior results were almost invariably fatal. Gross collected 207 cases, in which 29.47 per cent. of the subjects succumbed to the operation itself. Zesas gathered from different sources 162 cases, showing a mortality of 60 per cent. from cicatricial stenosis and of 84 per cent. from malignant growths. But few of the many methods devised for performing gastrostomy succeed in preventing leakage. This is of the greatest import; not only does the patient's comfort but also his nutrition depend upon it. The methods of Witzel and Sabanajew-Frank are best adapted to combat this disagreeable condition, but unfortunately they are very much restricted, being applicable only in cases in which the stomach walls are lax. Witzel prevents leakage by infolding a tube into the anterior wall of

[1] Read before the Ohio State Medical Society, May 6, 1898.

the stomach, thus establishing a long narrow fistula. The objectionable feature in this operation is that the viscus has to be opened at once, whereby the risk of sepsis is increased.

But must we be deterred from using the method even if the chances of infection are augmented? I answer No. In extreme exhaustion and emaciation it should be done, as the immediate introduction of food is imperative; but when conditions are more favorable for delay, the method *per se* is that of Sabanajew-Frank. In contracted stomachs this operation is proscribed: in fact, it is sometimes almost impossible to bring the viscus to the abdominal wall. No matter what method is used, great care must be exercised in order not to mistake the colon for the stomach; this error has been made by several surgeons. In case of doubt, the best plan to pursue is to search along the under surface of the left lobe of the liver; the first structure touched after leaving it must be the stomach. When the rectus muscle is reached, at the first incision the operator should guard against using the blade of the knife, and substitute its handle for separating the fibres. The object in doing this is to preserve as much contractility of the muscle fibres as possible, and allow it to act as a sphincter to the canal, thus preventing leakage.

E. J. Senn, of Chicago, has recently brought forth a new method, which consists in making a valve of the stomach wall itself. After the abdominal cavity is entered, the stomach is grasped near the greater curvature and pulled out in the form of a cone. Two puckering-strings of chromicized catgut are then placed parallel to each other two and a half inches below the apex of the cone, the sutures including the serous and muscular coats. These sutures when drawn tight form an isthmus. A portion of the gastro-colic omentum is then lifted up and a cuff is sutured over the constriction by means of silk. The stomach is fastened to the parietal wound with silk sutures, which include the upper portion of the cuff of omentum, the serous and muscular coats of the stomach, and all of the abdominal wall except the skin. The skin is closed with silkworm-gut sutures, the portion of the stomach which is to form the valve being left visible. The stomach can be opened at this time or later, as desired. The opening is made in the centre of the portion exposed, and should be one and a half inches in length. A rubber tube having been passed into the stomach, the stomach wall is now inverted, so as to form a circular valve, and the inversion is maintained by Lembert sutures. The author reports one case, in which there was not the slightest leakage. Abbe, of New York, has also performed Senn's operation, and reports that the plan is very satisfactory.

In closing, I desire to state, first, that gastrostomy must be considered a palliative and not a radical operation; secondly, the earlier we operate, the better the chances of success; thirdly, no one method will answer in all cases; the one which seems best adapted to the situation should be selected; and fourthly, great care must be exercised not to mistake the colon for the stomach.

FIG. 2.

INVERTED TYPHOID FEVER.[1]

BY M. GOLTMAN, C.M., M.D.,

SURGEON TO THE SHELBY COUNTY POOR AND INSANE ASYLUM, MEMPHIS, TENN.

ON September 25, 1897, I was called to see Arthur Z——, thirteen years of age, white. He was born and brought up in Memphis, and was bright, exceedingly energetic, and of a very nervous temperament. The mother is very nervous, has suffered a severe attack of nervous prostration (several years ago), has evidence of arthritis deformans in several of the finger-joints, and is, together with the rest of the family with one or two exceptions, subject to tonsillitis. The patient's face was flushed, and the eyes were bright; the tongue was somewhat tremulous, and was coated slightly brown in the centre, with a whitish frothy mucus along the edges. There was no splenic enlargement; the liver, heart, and lungs were normal. The appetite was poor; the bowels were constipated; the urine contained neither albumin nor sugar, was scant and high colored, with the exception of a large quantity, pale and limpid, which was passed about two hours before I saw him. The passage of this urine was preceded by a severe chill, which was followed by fever and sweating. Temperature, 104.4° F.; pulse, 132; respirations, 24.

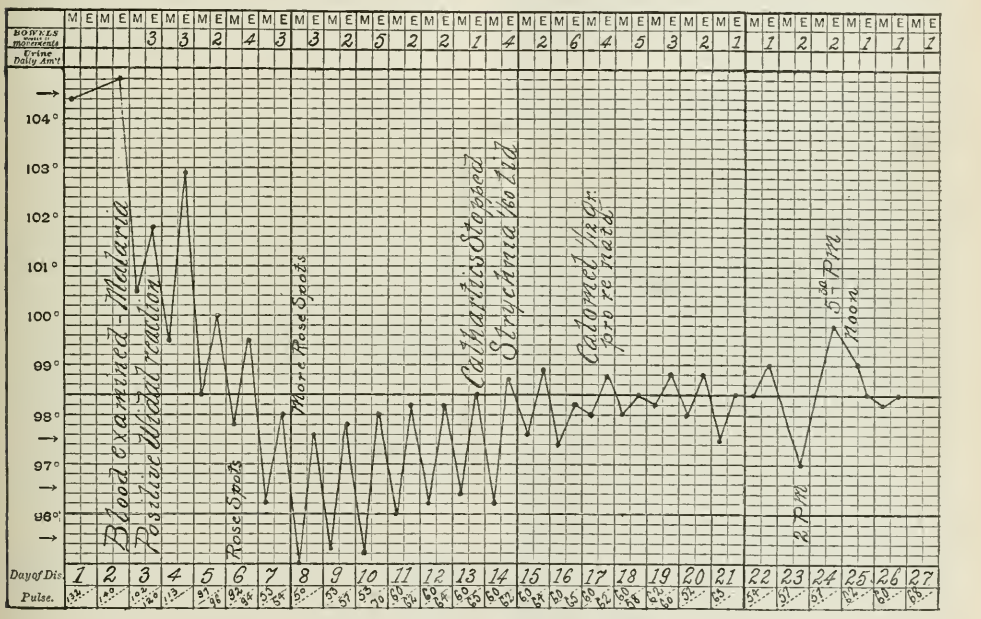
He had been indisposed, more or less, for about two weeks prior to my first visit, complaining of throbbing headaches, which were worse in the afternoon and after exercise; and there were loss of appetite, lassitude, drowsiness, disturbed sleep, constipation, and feverishness. Being an ardent cyclist, he made frequent trips far into the country in the hot sun. He recollected having partaken, on several such occasions, of both milk and water at a roadhouse where there had been sickness in the family for some time.

I diagnosed malaria, and prescribed a saline purge

[1] Read before the Memphis Medical Society, April, 1898.

and quinine in three-grain capsules very four hours, an ice cap to the head, and a cool bath. About six hours later I received word that the patient was resting nicely and was nearly, but not quite, free from fever. On September 26th he had another chill, which was of a much milder character than that of the preceding day. The quinine was continued until twenty-four grains were taken. This kept the patient comfortable, but with a temperature ranging from 99° to 101° F. until September 29th, when he had another violent chill, followed in a short time by fever of 104.8° F. On being informed of this, I made an examination of the blood for malaria. Two slides of fresh blood showed tertian organisms. Two stained specimens corroborated these findings, showing up very nicely and definitely numerous small, slightly pigmented, intracorpuscular parasites. There was no doubt about there being a malarial infection, but the persistence of slight fever for three days, the throbbing headache, anorexia, lassitude, and that "hang-dog" look, all in the face of cinchonism, were symptoms that I did not

trol experiment made on the spot proved negative. Ehrlich's diazo-reaction test proved negative, but this is not surprising, as it rarely shows before the eighth day of the disease. Outside of the slight degree of fever present, the headache, quickened pulse, and that "hang-dog look," there was nothing to indicate typhoid fever, but such was my diagnosis. As will be seen from the temperature chart, 101.5° F., after elimination of the initial malarial manifestations, was the highest point the fever reached, and this on the first and second days. After this it gradually became lower and lower, always showing a characteristic curve, however, until the morning of the 5th, when the temperature was 97.4° F. Characteristic rose spots were for the first time visible on this morning, and slight enlargement of the spleen was made out. From this day until the 13th the temperature ranged from 95° F. in the morning to 98.5° F. in the evening, and the pulse from 53 to 64 a minute. The temperature curve now gradually lessened from the 14th, and hovered between 97.8° F. and normal until the 21st. On the 22d



* Averaged about fifty ounces a day; water was given freely.

like. During the entire time (25th to the 29th) active saline cathartics, giving from two to four movements a day, were employed. Following the chill on the 29th, the administration of quinine was resumed in five-grain doses every six hours until thirty grains had been taken. This produced profound cinchonism; but in spite of it the patient continued to have slight fever until October 2d, when I saw him again. His temperature was then (9 A.M.) 100.4° F.; pulse, 102; respirations, 23. At 2:15 P.M. I made another examination of the blood, and in two unstained specimens found nothing, while three double-stained specimens showed what may have been three intracorpuscular bodies. These not accounting for the symptoms present, I procured two heavy drops of blood under the strictest antiseptic precautions, and submitted them to Dr. Krauss to be examined for typhoid. I was present when the test was made. A twenty-four-hour transplantation bouillon culture being the medium used, with the hanging-drop method typical clumping and arrest of motion took place in fifteen minutes. A control experiment made on the spot proved negative. At 2 P.M. it reached 97° F. On the 23d at 5:30 P.M. it reached 99.8° F. On the 24th at 12 M. it declined to 99° F., and after this became normal.

In a previous communication before this society I discussed the eliminative treatment of typhoid fever very extensively, and urged the adoption of the saline cathartics for the purpose of elimination in preference to anything else. I have no reason to change the opinion then expressed. They are undoubtedly best and safest. The patient may get tired of salts: then, for a day or two, calomel may be substituted in broken doses until the bowels move. A good mixture to employ is a drachm each of Epsom salts, Rochelle salts, and compound licorice syrup, repeated if necessary. Four or five movements a day are desirable. This is my main treatment; everything else is subservient to it. In advocating this treatment I fully appreciate the specific nature of typhoid fever, and while it is impossible to eliminate, *in toto*, the cause of the disease by the use of cathartics, large quantities of mixed organisms are undoubtedly forced from the intestinal

canal, which action cannot do otherwise than lessen the amount of absorption and consequent mixed intoxication. The less the intoxication, the fewer the symptoms of sepsis; and the less the sepsis, the better the chance for the patient's recovery. Elimination, to be a success, however, must begin early, before the organisms other than typhoid have gotten in their deadly work; hence early diagnosis is a *sine qua non*.

Gentlemen, we have here for analysis a case of atypical typhoid fever ushered in by the clear-cut paroxysms of a malarial infection, which was demonstrated beyond the shadow of a doubt by microscopic examination of the stained and fresh blood of the patient. More typical organisms I have never seen, and in this Dr. Krauss will bear me out. I cannot subscribe to the belief of a mixed infection—the hybrid disease, typho-malarial fever. It is, practically speaking, unknown. I am not unfamiliar with the paroxysmal fever sometimes ushering in a typhoid infection, and, being in the habit of diagnosing malaria by means of the microscope in nearly all cases, and having made such a diagnosis in this case, it was somewhat humiliating to be compelled apparently to recede from my position, and inform the anxious family that they had now to nurse a case of typhoid fever. Dr. Pheemster has, however, told me of a similar instance occurring at St. Joseph's Hospital, and the literature of the subject teems with similar cases, which, unlike my own, however, are somewhat lacking in scientific data and therefore of doubtful value. In this climate of ours, where malaria is so common, there is a proneness to consider nearly all fevers as malarial, and when they resist a calomel purge and the action of quinine for three days they are very often pronounced typhoid. It is needless to assert that in either event the liability to error is great and is increased or diminished in proportion to our laboratory knowledge, facilities, and experience. The case before you was diagnosed typhoid by the dried-blood method of Wyatt Johnston, of Montreal, in conjunction with some, if not all, of the classical symptoms; and I bring it before you for discussion for the following reasons: (1) To prove the value of early diagnosis and early elimination in the future course of the disease: (2) to prove the value of the Wyatt Johnston test as the best means of making an early diagnosis; (3) to prove that we may have an Æsculapian paradox—a fever without fever; (4) to prove that malaria may complicate typhoid fever, but only for a time, there being practically no such hybrid disease; the malarial complications may either mask the onset or disturb the convalescence; (5) to prove that much of the pathology of typhoid fever as usually taught is incorrect and not substantiated by the more modern and scientific methods of investigation; (6) to prove that by early and vigorous elimination the disease may be made to run a shorter and a milder course, in consequence, perhaps, of the lessening of the toxæmia of what is, at least in the beginning, a mixed infection.

56 and 58 Continental Building.

REPORT OF A CASE OF ACUTE QUININE POISONING.[1]

By BENNETTA D. TITLOW, M.D.,

Springfield, Ohio.

A tonic containing iron, quinine, and strychnine was prescribed for Mrs. W——. There were ten grains of quinine to a four-ounce mixture, and, as the patient took only one teaspoonful dose, the poisoning was due to less than one-third of a grain of quinine. The medicine was taken after supper. In an hour Mrs. W—— complained of a burning, tingling sensation of the face, and by bedtime the sensation had spread to the entire body. I was called early the next morning, and found the patient's face badly swollen, especially the tissue about the eyes; there was an erythematous rash over the body, most marked on the face, hands, and down the spine. The patient complained of intense itching. I ordered a cooling lotion and free catharsis. In the next forty-eight hours all of the symptoms were intensified. The swelling had involved the areolar tissue about the neck, and the chain of lymphatics along the sterno-cleido-mastoid muscles. The eruption on the face was of a deep purplish color, especially across the cheeks, where a butterfly mark was really erysipelatous in appearance; that on the body was as nearly like a measles rash as anything I can describe. After trying many things without avail, I found immediate relief from a wash of dilute acetic acid. Of course I am justified in calling it a case of acute quinine poisoning only by the history of the patient, who had been poisoned in exactly the same way three times by the external use of quinine—first by a quinine and bay-rum hair wash, the next time was also by a hair wash containing quinine, and the third time by an ointment of quinine.

[1] Reported at a meeting of the Clark County, Ohio, Medical Society.

HISTORY OF A CASE OF HUNTINGTON'S CHOREA.[1]

By HARMON SMITH, M.D.,

House Physician, Kings County Hospital, Brooklyn, N. Y.

To this malady the interest of those present may be more forcibly directed, because Dr. Huntington, who has the merit of first describing lucidly this condition, and for whom it is named, was formerly a resident of Long Island (now of La Grangeville, N. Y.), and the cases he reported were from the eastern end of the island.

The important factors characterizing this disease are: 1st, its hereditary nature; 2d, the mature age, as a rule, at which it is developed; 3d, the coarse irregular movements of certain groups of muscles; 4th, the disturbance of speech: 5th, the gradual dementia which usually follows previous to death; also the immunity which a future generation enjoys if the thread of heredity is once broken. The history of this patient is as follows:

James DeB——, aged twenty-nine years, fair complexion, born in Brooklyn, married, and has two children, ages eight and six respectively, and both healthy.

Family history shows hereditary nature. Paternal grandfather and grandmother died of old age, at ninety-three and eighty-seven years respectively. Maternal grandfather died at the age of sixty-five, of heart trouble. Maternal grandmother died at the age of forty, cause unknown. Father of patient first showed choreic symptoms at the age of thirty-eight. These symptoms increased in severity until his death, aged forty-eight. No history of dementia obtainable. Mother of patient died of heart trouble at the age of thirty-eight. Patient is one of six children, and comes third in order of birth. The oldest child is now a woman of thirty-six, married, has one child; both are healthy. The next is a woman with two children, all healthy. Just younger than himself is a brother, who is now twenty-five years old, and well. Then comes a sister, who, according to the statement of the patient, developed chorea at the age of thirteen, and her condition increased in

[1] Paper read and patient presented before the Brooklyn Society for Neurology, December 30, 1897. The case was from the service, in Kings County Hospital, of Dr. William Browning, with whose consent it was presented.

severity until the age of twenty-one, when she died, having shown all the characteristic symptoms of Huntington's chorea, except the early age at which it developed.

The father had chorea some time previous to the birth of this girl, but did not have it when the patient in question was born. This gives some idea of the hereditary tendency of the disease, although only one of the previous generation and two of the present generation have developed it as yet.

The sister died childless, but in the two children of this patient we may in time be able to trace still farther this inherited tendency.

Previous personal history. At the age of eighteen he had gonorrhœa. Denies specific history and abuse of alcohol. Has used tobacco to excess, often smoking twenty-five cigars a day and several pipes of tobacco. Had scarlet fever when about sixteen years of age. Was also shot in the thigh with a pistol, the ball never having been removed. The patient also gives a history of two attacks of acute articular rheumatism occurring about ten years ago, the first attack lasting three months, the second attack two months.

History of present illness. About eighteen months ago the present trouble began by slight twitching of the fingers of the left hand, followed six months later by a similar condition of the right hand. This twitching movement extended later to the hands and muscles of the forearm. About eight months after these symptoms were first noticed, similar movements began in the toes and feet, extending to the muscles of the calves. These movements in the calves were attended by some pain, and at the same time some pain in the back was noticed. The twitching of certain groups of muscles has been more marked on the left side.

The patient's eyes wander in a restless manner; both lids twitch at alternate intervals, this being more marked on the left side. These twitchings are accompanied with an oblique nodding of the head and peculiar grimaces at times. The pupils respond to accommodation but not to light; slight inequality is apparently present. Before the trouble began the patient affirms that he was an easy talker; now speech is thick, hesitating, and sticky; the tongue apparently refuses to aid in articulating. The patient says he cannot form and pronounce his words as he should like to, or as he did formerly.

Hearing is bad in the right ear, the deafness dating from a scarlet-fever attack. Tactile sense is somewhat dulled; the man is unable to pick up small objects, or to tell if a pin is between his fingers; he is also unappreciative of the touch of a camel's-hair brush. He is frequently unable to hold light objects, and may drop cups and glasses in handling them.

Writing is not much impaired, though it is slower than formerly. The gait is uncertain and hesitating, a trouble apparently due to inco-ordination. The man staggers and sways, frequently making false steps, but never falling to the floor. Standing with eyes open and feet together is accompanied with swaying until the patient falls, and that generally backward. It is apparently impossible for him to stand with the eyes shut. The memory up to the time of the first symptoms was very good, but now it is exceedingly defective.

Upon testing the muscular sense I found the patient unable to appreciate differences of one ounce, but above this he could distinguish fairly well. (An average person with the same tests can easily distinguish the difference of only half an ounce.) The temperature sense was unimpaired. The tendon reflexes were normal. The patella reflexes were slightly increased. Cutaneous reflexes were present. Hyperæmic appearance of skin over thorax and upper extremities, and patient complains of sense of formication over same area occasionally.

There was nothing abnormal in the heart sounds. Pulse, 96; quality good. Blood-vessels in good condition. The respiratory system was apparently normal. The appetite was fair, but digestion was slightly impaired. The patient suffered from nausea at times. Urinary analysis shows a specific gravity of 1.012; normal in other respects.

Pathology. Several varying conditions have been found present in the few cases brought to autopsy, but so indefinite are the conclusions that it may be said that the pathology is generally considered unknown. Some very recent work, however, shows a close parallelism in the pathological anatomy of this disease and that of progressive dementia.

The diagnosis can be made usually upon the hereditary history, age (thirty to forty), coarse irregular movements, sticky hesitating speech, and gradual loss of mental activity.

The prognosis is unfavorable, as the patient usually goes on to dementia, or dies after a progress of eight to ten years of the disease.

A CASE OF SUPERNUMERARY ARTERY OF THE OPTIC DISC PROJECTING INTO THE VITREOUS HUMOR.

By J. HERBERT CLAIBORNE, Jr., M.D.,
NEW YORK.

A YOUNG colored woman, twenty-five years of age, presented herself at the New Amsterdam Eye and Ear Hospital on account of a frontal headache. A slight compound hyperopic error was found, the correction of which relieved her symptoms.

On looking into the eyes, there was found a curious formation of the retinal arteries. A glance at the figure below will give a clear idea of the phenomenon in each eye. In the right eye a supernumerary artery emerges from the upper and inner edge of the disc, runs forward into the vitreous, turns sharply upon itself, and, after pursuing a meandering course returns almost to the level of the disc, whence it is distributed to the retina in a normal manner. In the left eye the erring artery arises from the inner side of the disc just within its boundary, and, plunging forward into the vitreous, turns upon itself, making three loops, and finally is distributed to the retina from a point very near its origin. The artery in each eye was filled with blood, but in the left eye it was larger and more nearly bore the dignity of a central artery. On the right side it was smaller, and had, in fact, a rudimentary look; nevertheless it was filled with blood throughout. To my eye both arteries projected more nearly in a straight line than is indicated by the drawings, so that the foreshortening seemed greater.

I saw the apex of the loop in the right eye with + 4 D, and that of the loop in the left eye with + 3 D. I believe, however, that they projected farther forward than that measurement would indicate.

At the first blush the idea that these arteries were modifications of the fœtal central artery of the vitreous humor presented itself. More careful reflection, however, convinced me of the incorrectness of this view. They are beyond question supernumerary central arteries.

The first view that I entertained led me into a study of the literature of the remnants of the hyaloid artery. The cases of this condition that have been reported are so numerous that it would be neither profitable nor pertinent to review them. David de Beck, in a monograph published by Robert Clarke & Co., Cincinnati, Ohio, 1890, has thoroughly reviewed the subject of persistent hyaloid artery, and has collected

cases illustrating all the modifications of this phenomenon. He divides them into twelve groups. In his eighth division, "strand containing blood," he places twelve cases, to which the following are the references:

1. Liebreich: Trans. Path. Soc., London, 1871.
2. Little: Transactions Amer. Oph. Soc. (17th), 1875.
3. Schapringer: Arch. Oph. and Otol., iii., 1873.
4. Czernak: Centralbl. für Augenh., vii., 1883.
5. Reibau: Charité Annalen, i., 1876.
6. Fournet: Recueil d'Ophthal., ii., 1880.
7. Hirselberg: Centralblatt für Augenh., 5, 7, 9, 1881, 3–5.
8. Callan: Two cases, New York Med. Jour., xxii., 1875.
9. Kip: Arch. of Oph. and Otol., vol. iii., p. 70, 1873.
10. Szili: Centralblatt für Augenh., ix., 1885.
11. Hunike: Am. Jour. Oph., ii., 1885.
12. Frost: Trans. Oph. Soc. United Kingdom, vii., 1887, and a number of others.
13. Moll, later case: Hirschberg's Centralblatt für pr. Augenh., p. 75, 1896.

Referring to these cases, he says: "There is quite a group of cases that have usually been included under the head of persistent hyaloid vessels, which, if included here, would swell this group to very considerable proportions. These are the cases where a vessel containing blood emerges from the disc, passes a

A. B.

Upright Image. An artery emerging from each disc extends in a spiral loop forward into the vitreous, and re-entering the disc passes out into the retina. *A*, right; *B*, left.

greater or less distance into the vitreous, and then turns upon itself to pass back again to the disc or retina. It either disappears in the disc or is distributed to the retina. It is manifestly erroneous to include these cases under the head of persistent hyaloid vessels. They have no genetic claim here. Only the most superficial consideration, misled by position alone, can regard them as belonging to the class of persistent hyaloid artery."

This monograph can be found among "American Ophthalmological Monographs," No. 1, vol. iii., 1890.

The views expressed above so fully set forth my own that I have transcribed them bodily. The condition in Liebreich's case, No. 1 cited above, bears considerable likeness to the right eye of my patient. That in Little's, No. 2, is very similar to the left eye of my patient. Schapringer's likewise resembles the latter. All these observers expressed the view that the formation was a modification of the persistent hyaloid artery. In a personal communication to me, Dr. Schapringer has expressed a doubt as to the correctness of his former views.

It seems to me high time that we should no longer swell the literature of persistent hyaloid artery by reporting these cases under that head. It seems to me they should be grouped under this head: Supernumerary arteries of the optic disc.

I wish to express my indebtedness to Dr. Ward A. Holden, who has made the drawing for me; and to Dr. A. Schapringer, who has furnished me with references to the literature of the subject.

29 West Thirty-Sixth Street.

HYDRAMNIOS AND TWIN PREGNANCY.[1]

By J. T. JOSEPH BIRD, M.D.,

NEW YORK.

The condition of hydramnios is of such infrequent occurrence that this fact must be my only excuse for reporting this case. Mrs. W. P—— consulted me on November 2, 1897, with reference to her approaching confinement, and gave the following history: She is thirty-three years of age, married eight years, and has given birth to three children, two of whom are now living, one having died of pneumonia at two and one-half years. Since her tenth year of age she has had several attacks of rheumatic fever of sufficient severity to confine her to bed on each occasion. Following her first attack of rheumatism she had chorea. The patient has never enjoyed vigorous health, though this has improved since her marriage.

Shortness of breath on slight exercise has been noticed of late. There is no history of syphilis or alcoholism. There has always been some dysmenorrhœa. The last regular menstruation occurred six months ago, May 20th, though there has been a very slight flow for two or to three hours at each recurrent period since that date.

Noting an excessively large abdomen for a six months' pregnancy, I asked for an immediate examination, with the following result: The breasts are enlarged and give colostrum. The abdomen is dome-shaped, evenly enlarged, and offers a symmetrical tumor extending from the pubes to the ensiform cartilage; the umbilicus is slightly protuberant, lineæ albicantes are present, there is some pigmentation, and the superficial abdominal veins are prominent. The tumor is elastic on palpation, and gives a well-marked fluctuation wave noticeable in all directions through the abdomen. No fœtus is discernible, no fœtal heart sounds are heard, nothing like a uterine tumor can be mapped out.

The vaginal veins are enlarged, the membrane is very blue, the cervix soft, and examination for ballottement is negative. Both legs are œdematous, the left more so than the right. The veins of both extremities are enlarged, those of the right side being more noticeably so. In the sitting posture the abdominal enlargement extends to within an inch of the ensiform cartilage. The heart examination gives aortic stenosis and mitral insufficiency.

With this history and these physical signs present, the interesting question is, What is the diagnosis? Of the question of pregnancy there can be little doubt, for we have a history of amenorrhœa for six months, mammary changes and darkened areolæ, marked blueness of the vagina with distended veins, and marked softening of the cervix, though no uterine tumor can be felt, no fœtal heart sounds are heard, and no ballottement is present. Then what is the attending complication? Is it an ovarian tumor, hydramnios, ascites, or a distended uterus?

As regards an ovarian cyst, the patient did not notice any lateral enlargement of the abdomen previ-

[1] Reported at a meeting of the Harlem Medical Society, May 9, 1898.

ous to the suspension of menstruation, and the growth enlarged more rapidly and uniformly than an ovarian tumor commonly does. Besides this, we have a tumor of the same consistence throughout the abdomen, and no sulcus to suggest the presence of two growths. The percussion wave, also, extends in all directions through the abdomen, and is not limited, as we should expect to find it, in a cyst of the ovary.

A uterus distended with fluid enlarges slowly, and gives none of the positive signs of pregnancy.

Hydramnios. In favor of this condition we had a large elastic tumor, but no recognizable uterine walls, no fœtal mobility, and fluctuation was very well marked.

Ascites. The symmetrical enlargement of the abdomen, the wave of fluctuation well marked in all directions throughout the abdomen, the umbilical protuberance and prominent abdominal veins, all made this the most likely complication, though there was no manifest cause for that condition in the liver; and while the patient had an endocarditis, there were not the general œdema and albuminuria that accompany ascites of cardiac or renal origin. This opinion was concurred in by a well-known gynæcologist and by a general practitioner, an honorable member of this society.

Acting on this diagnosis, I did a paracentesis, following the method and antiseptic precautions usual in such cases. The fluid first withdrawn was clear and quite transparent, and was followed by a flow of fluid blood that continued for an instant only and then suddenly ceased. A catheter was passed through the cannula and a small quantity of bloody fluid withdrawn. In all a pint of fluid was obtained and the size of the abdomen was reduced from forty to thirty-nine inches. This was not considered a satisfactory result. No untoward symptoms followed, and after four days' rest in bed, the patient was up and about feeling very well.

Ten days later premature labor came on, and the patient was delivered of two dead fœtuses. In the case of one the integument was very dark, the cord was black and much attenuated, and presented the appearance of having been constricted by that of its fellow. For two days the fundus remained as high as the umbilicus, a condition probably due to the overdistention of the uterine walls. Recovery was most satisfactory; and it is hardly necessary to add that no signs of fluid remained in the abdomen post partum.

The Consequences of Nerve Section. — Division of a nerve has for its consequences in order of time: (1) Paralysis of motion or of sensation, or of both, according as the nerve cut is motor or sensory or mixed; this paralysis is immediate and local; (2) loss of excitability of the nerve, coming on gradually and becoming complete within a few days: direct muscular excitability persisting for an indefinite time, especially to the galvanic current; (3) degeneration of the peripheral end of the nerve, also a gradual process, visible within a day or two, well marked at the end of three or four days, complete in about ten days; (4) regeneration of the previously fully degenerated peripheral end of the nerve, a still more gradual process, commencing indefinitely, but clearly visible about a month after the lesion has been produced and requiring from three to six months to complete itself, resulting in (5) restored motility, sensibility, and excitability. These statements refer to the results of experiments upon warm-blooded animals; in cold-blooded animals the last four stages are much more slowly consummated; in young warm-blooded animals, on the contrary, the processes are accomplished more rapidly.—Dr. Augustus Waller, "An Introduction to Human Physiology," page 354.

Surgical Suggestions.

Operations upon Albuminurics.—Dr. Mongour (*Le Scalpel*, June 19th) has investigated the question of operations in the presence of albuminuria. Surgeons do not agree on this question: some few declare that they pay no attention to this condition; others have fixed an arbitrary quantity of albumin (generally from five to six grams to the litre), in excess of which quantity they do not operate; again some institute a course of medical treatment and do not intervene until the albuminuria falls within the prescribed amount. Dr. Mongour divides this class of patients into three categories: (1) Albuminuria, constituting the only symptom of renal lesion, is no contraindication for operations. (2) Albuminuria, whatever may be the quantity, coexisting with signs of Bright's disease (auditory and visual troubles, vertigo, etc.), is a formal indication for reducing to a minimum the work of the kidneys by prescribing a milk diet. If under this treatment functional signs disappear, any intervention is legitimate. If, on the other hand, there is no improvement, we should abstain from all operative interference unless immediate death threatens. (3) Albuminuria, whatever may be the quantity, existing in conjunction with marked signs of renal insufficiency (œdema, ascites, etc.), if coming on in the course of a subacute nephritis, precludes operation until after treatment has been undergone. If the results are favorable intervention is legitimate, otherwise no operation should be undertaken, unless it is a question of life or death. In this category of patients the author makes one reservation: cases in which nephritis is accompanied by all the classical signs of Bright's disease, which seem to be daily aggravated by a suppurative lesion.

Celluloid Bandages.—Dr. Walravens has reported his experience with these bandages (*Le Scalpel*, June 19th), which possess the advantage of being very light. A celluloid corset weighs three hundred grams, while one of plaster weighs two kilograms three hundred grams. The solidity and rigidity of celluloid are at least equal to those of plaster. It is impermeable to perspiration, urine, or pus, while these excretions macerate plaster. It is elastic, and as it neither breaks nor cracks it permits of massage. Used with steel articulations or with celluloid itself, it is superior to even the most complicated bandages. As celluloid is softened by a moderate degree of heat, the form can be corrected if necessary. The only serious inconvenience of celluloid is that it does not harden so quickly as plaster, requiring two or three hours. Dr. Walravens thinks its inflammability has been exaggerated, and that in this respect celluloid is no more dangerous than clothing. As it is impermeable, openings should be left here and there for the evaporation of the perspiration. As celluloid solidifies so slowly, it is necessary to use a mould. Make a solution of one part celluloid to three parts acetone in a vessel with a large opening, and stir from time to time. The more readily the acetone evaporates the more homogeneous will be the solution. It should be sufficiently liquid to thread when dropped from the spatula. If too dense it is difficult to spread. The surgeon should wear gloves or else anoint the hands with vaseline. Dr. Walraven completes his dressing as follows: After steeping the bandages in acetone he places them in a solution of celluloid, which easily penetrates. He then rolls them on the mould, adds one or two layers of celluloid and allows it to dry. If it is not sufficiently thick when dry, as many more layers as are necessary may be added. One may place a jersey on the mould and apply acetone and then celluloid and allow it to dry; if necessary this process may be repeated.

Radical Cure of Umbilical Hernia.—Dr. Focas, in an article on this subject (*Archives Provinciales de Chirurgie*, July 1st), advises the following method of procedure, for which he does not claim any novelty, but holds that there is an advantage in working from behind forward; that is, from the peritoneum toward the skin, cutting at one time all that is to be cut and reducing by traction all that should remain. He divides this operation into two steps: "First, make a small medial classical laparotomy in the healthy wall of the abdomen, between the hernia and the xiphoid appendix. We thus make a peritoneal opening just sufficient to admit the left index finger, which explores the neck of the sac. This exploration will show the nature of the organs penetrating the hernia, whether epiploon or intestines. Without removing the finger incline it to the left outside the sac and on the finger, acting as a cannula sound, open the abdominal wall with a pair of scissors, following a curved line with the concavity inward. Compresses protect the abdominal cavity already opened. The finger after again reaching the neck explores the right side of the sac to its limit and the wall is incised from this side, following a curved line symmetrical with the first. The umbilical region (skin, umbilicus, sac, and hernia) then forms a flap with the pedicle below. This flap can be turned back so as to expose the peritoneal space with the umbilical ring, giving passage to the omentum or the intestines. The motion of this flap is sufficient by the attraction it gives to the contents of the sac to reduce all that can be reduced—that is, all that is not adherent or strangulated. Any epiploic portion which has not been reduced by this method is adherent to the sac and must be removed. It suffices to cut the epiploic cord after ligating and to cut the inferior pedicle of the flap. Every intestinal portion that has not been reduced in the same way must be reinstated, and to do this it suffices to force the intestine back through the neck of the sac. After the contents of the sac have been disposed of, the entire flap is cut away, the peritoneal cavity being protected by aseptic compresses. Second, divide the walls, isolate the peritoneum to find under it in uncovering the right muscles that we do not easily find in working from the front backward. Take the edges and proceed to suture in three layers. Have recourse to Quenue's method if it is appropriate."

Peritonitis.—In the early stages, when operative interference is advisable and not without hope, the symptoms may be grouped as follows: (1) Pain general, becoming local, or local, becoming general; (2) tenderness, general, becoming local, or local, becoming general; (3) rigidity of the abdominal muscles; (4) vomiting, green; (5) rise of pulse and temperature; (6) shock, varying in depth; (7) diminished peristalsis. In fully developed peritonitis, in which the wisdom of interference is questionable, the symptoms are: (1) Pain lessened or absent; (2) tenderness general; (3) distention excessive, replacing rigidity; (4) vomiting excessive, dark or fæcal; (5) obstipation, peristaltic movement not heard; (6) rapid and feeble pulse; (7) high or low temperature; (8) lividity of abdominal skin, cold extremities; (9) peritoneal facies; (10) mind clear. In hopeless cases the above symptoms are increased with collapse; the patient is moribund.—Drs. Richardson and Cobb, "Parke's System of Surgery," p. 386, vol. ii.

Vaginal Cocci.—All seem to me agreed that the streptococci and staphylococci which are found in the vagina by no means have their normal virulence, but that favorable conditions increase their virulence.—Veit.

A Consideration of the Urinary Distance as a Diagnostic Factor of Prostatic Hypertrophy.—(1) The urinary distance varies in the adult healthy male from something over six inches to something under ten inches, but may be averaged at eight inches. (2) The shorter lengths are found in short individuals having a small penis. A large organ naturally contains a long urethra, and this is most certainly the case if the individual be tall. (3) The age of the individual seems to cause a very moderate increase in the urethral length, irrespective of disease. (4) In prostatic hypertrophy the urinary distance averages more than eight inches, and is longer in cases of peripheral general hypertrophy than when the enlargement is median or in cases of bar. (5) In a doubtful case, a consideration of the urinary distance may become an important element in the diagnosis.—Dr. E. L. Keyes, *Journal of Cutaneous and Genito-Urinary Diseases*, August.

Are Complete Castrates Capable of Procreation?—(1) In animals, for a varying period after complete castration, normal spermatozoa are found in the contents of the seminal vesicles. (2) This period varies in different animals, being six days for the dog, seven days for the cat, and fourteen for the guinea-pig. (3) In man, clinical cases are recorded in which fecundation of the female has occurred after coitus with a male who had been completely castrated, but in accepting the correctness of such statements we must remember the adage that "accidents may happen in the best regulated families." Still, Princeteau's case (if correct) proves that spermatozoa do exist for a certain time in the seminal vesicles of a eunuch, and, arguing from analogy of what occurs in animals, this is quite probable. (4) Still pursuing the analogy in man, as in the dog and cat, a complete castrate may be capable of procreation, providing the coitus occurs within the first seven days after the castration.—Dr. Frederick R. Sturgis, *Journal of Cutaneous and Genito-Urinary Diseases*, August.

Urethral Fever.—Tying a catheter into the urethra is one of the most effectual methods of preventing the occurrence of rigors, a fact that is quite inexplicable if rigors are caused by reflex irritation of the deep part of the urethra.—Moullin.

The Treatment of Hemorrhoids.—Dr. Coston (*Medical and Surgical Reporter*) gives these points in favor of the clamp and cautery: 1. In the operation with the ligature you tie up the most sensitive of all nerve ends, and there is intense pain, which will be kept up until the stump sloughs and the ligature comes off. In the cautery operation the nerve end is simply cut away and cauterized, and there is nothing left for it to do but cicatrize, and it is left in the very best possible condition for this. 2. The ligature may slip off and secondary hemorrhage occur; after the clamp-and-cautery operation there is no danger of secondary hemorrhage. If hemorrhage occurs, it does so immediately, and the operator can blame only himself for it. 3. There is no danger of a recurrence. Kelsey, of New York, and Smith, of London, who have a large experience with operations, support this statement. It will be admitted that recurrences do follow the ligature operation. 4. Convalescence is much more quickly completed, for the reason that it begins at once under the eschar produced by the cautery, and would be completed by the time the ligature came away should the two operations be used on separate tumors in the same case. 5. The mortality following the clamp-and-cautery operation is practically *nil*. 6. The clamp-and-cautery operation requires less after-care from the operation. 7. There are no unpleasant sequelæ.

The Treatment of Penetrating Wounds of the Abdomen.—Vulliet (*Revue Médicale de la Suisse Romande*, after an analysis of three hundred and fifty-five cases, seventy-seven of which were treated on the expectant plan and two hundred and fifty-eight by laparotomy, draws the following conclusions: 1. To establish the fact of penetration the wound must be enlarged, probing being insufficient. Exploratory laparotomy must be performed at once in case of perforation. 2. It is often impossible to decide from the symptoms whether the intestine is perforated or not; symptoms of peritonitis often accompany slight cases, while they may be absent in multiple perforations. 3. Sure signs of perforation of the intestine, as fistula or evacuation of a bullet per rectum, are very exceptional. 4. Exploratory laparotomy is without danger. 5. Both statistics and experiments show that spontaneous healing of intestinal perforations without septic peritonitis is rare. 6. Early operation aids in the prevention of peritonitis, which, when once established, nearly always ends fatally. 7. Even when death does occur, it need not be attributed to a long and difficult operation; it may have been due to the gravity of the lesions. Operation has certainly saved many who otherwise would have died. 8. If there are no abdominal symptoms present forty-eight hours after the infliction of the wound, perforation of the intestine can be excluded almost with certainty; if there are signs of peritonitis, abdominal section and washing out give the only remaining chance for recovery. Deaths in the latter case are due to the expectant treatment and not to the operation. 9. Shock is no contraindication to operation; it is often caused by severe hemorrhage, and the fear that the patient may die on the table must not preclude an operation which has saved life. In these cases stimulants and intravenous saline injections should be given freely. 10. The incision should be median and long in the majority of cases, as this facilitates exploration. The cavity should be washed out and drained. 11. The above conclusions apply only in civil life, when it is possible to use all aseptic precautions; in war the question of operation *versus* expectant treatment must be considered as still unsettled.

Vaginal Hysterectomy.—We may say that practically vaginal hysterectomy has no mortality, and abdominal to-day gives us quite the same guarantee. But we are convinced that the mode of operating is of no consequence in cancer. It may finally be said that, wherever cancer is situated, after extirpation relapse is inevitable in the present state of our knowledge of its therapy, and radical cure to-day is the "exception." Operation, as it stops hemorrhage, relieves pain, and suppresses the ichorous discharge, should not be refused the patient. Cancer of the uterus, however treated, is progressively fatal, although, everything considered, hysterectomy is perhaps among the best of palliative remedies.—Dr. Jacobs, *Gazette de Gynécologie.*

Thyrotomy for Tuberculosis of the Larynx.—Dr. Castex (*Le Scalpel*, January 1, 1898) some years ago proposed an operation for the purpose of arresting the progress of phthisis of the larynx; this is thyrotomy. Dr. Goris, of Brussels, has performed some operations of this kind. He opens the larynx, curettes the tubercles, and cauterizes them with the thermocautery. After this he closes the larynx. He thinks that thyrotomy is an operation which involves little danger and admits of bettering the condition when the two parts of the larynx are much retracted. The voice returns soon after the operation and the consecutive dysphasia does not last more than a few days.

Gunshot Wounds.—(1) In theory and practice military surgery is equivalent in every respect to emergency practice in civil life. (2) The wounded soldier is entitled to the same degree of immunity against infection as are persons in civil life suffering from similar injuries. (3) The fate of the wounded rests in the hands of the one who applies the first dressing. (4) The first dressing should be as simple as possible, including an antiseptic powder (composed of boric acid, four parts; salicylic acid, one part), a small compress of cotton, safety pins, and a piece of gauze forty inches square. (5) Any attempt to disinfect a wound on the battlefield is impracticable. (6) The first-dressing stations and the field hospitals are the legitimate places where the work of the hospital corps and company bearers is to be revised and supplemented. All formal operations must be performed in the field hospitals, where the wounded can receive the full benefits of aseptic and antiseptic precautions. (7) Probing for bullets on the battlefield must be absolutely prohibited. (8) Elastic constriction for the arrest of hemorrhage must not be continued for more than four or six hours, for fear of causing gangrene. (9) The *x*-ray will prove a more valuable diagnostic resource than the probe in locating bullets lodged in the body. (10) Gunshot wounds of the extremities must be treated upon the most conservative plan, the indications for primary amputation being limited to cases in which injury of the soft parts, vessels, and nerves suspends or seriously threatens the nutrition of the limb below the seat of injury. (11) Operative interference is indicated in all penetrating gunshot wounds of the skull. (12) Gunshot wounds of the chest should be treated by hermetically sealing the wounds under the strictest aseptic precautions. (13) Laparotomy in penetrating gunshot wounds of the abdomen is indicated in all cases in which life is threatened by hemorrhage of visceral wounds and the general condition of the patient is such as to sustain the expectation that he will survive the immediate effects of the operation.—Dr. Nicholas Senn, *Journal of the American Medical Association*, July 9th.

Cancrum Oris.—This is now fortunately a rarely seen form of gangrene. In its treatment fuming nitric acid was found superior to carbolic from the outset.—MacMasters, *Australasian Medical Gazette.*

Fracture of the Inferior Maxilla.—Dr. Moriarty (*Boston Medical and Surgical Journal*) makes impressions of both jaws, the fracture being unreduced; then plaster casts, indicating the line of fracture, which is cut through with a fine saw, are made. The deformity is then corrected, and a vulcanite splint, from each side of which a wire projects, is made; these wires are joined behind the head by a bandage. The jaws are fitted to a splint and a bandage connecting the side wires is run under the chin to support the jaw. When greater pressure is desired, a metal chin piece, fastened to the side wires by screws, may be utilized. If the symphysis be the seat of fracture, a continuous cap of gold or aluminium may be cemented to the lower central teeth.

Indications for Venesection.—1. In affections of the central nervous system, such as cerebral hyperæmia, apoplexia cerebri, inflammation of the cerebral membranes. 2. Kidney diseases in the stage of œdema and uræmia (Saccharjin and Hoffmann). 3. Cardiac disease of valvular origin. In great disturbances of circulation in which the venous system is overtaxed and the arterial pressure raised (Liebermeister). 4. In pneumonias with an exceptionally severe onset, absolutely in the first stage. 5. In various stages of chlorosis (Dyes, Wilhelmj). — Dr. Moritz Kácser, *Wiener klinische Rundschau.*

Abscess of the Liver.—Medical treatment of liver abscess is only palliative. When rupture has occurred in any direction, as long as the abscess is properly or satisfactorily evacuated, interference is not advisable. Should the evacuation be unsatisfactory, resulting in hectic fever, emaciation, and generally bad progress, a counteropening through the side should be attempted. The trocar or aspirating needle is very valuable, it may be said indispensable, in diagnosis, but comparatively useless in treatment. The best results ever obtained have been those that followed free evacuation with the knife. When pus has been located by needle or otherwise, the knife should be boldly and freely used. There is little to be gained and possibly much to lose by waiting for nature by inflammation to form protecting adhesions. The point of election is the most dependent part of the collection, or the point showing a tendency to rupture. In absence of this the points of election are just below the ribs, or in the seventh intercostal space in midaxillary line. In early operations, or before adhesions have formed, it is advisable to open the peritoneal cavity first, and pack it off by gauze preliminary to opening the abscess. The subsequent management is similar to that of abscesses in general. —*Toledo Medical and Surgical Reporter.*

The Treatment of Fractures.—1. Unless a fragment is threatening to break through the skin, the fracture should never be reduced except by a physician, and then only when apparatus is at hand to keep the parts in permanent apposition. 2. Men carrying an injured person should not keep step, as the jar to the wounded part is much greater. 3. Strychnine for shock, morphine for pain, but no alcohol. 4. Always give anæsthetics for reduction of a simple fracture. It is better and easier to reduce and set compound fractures without anæsthesia. 5. It is very rarely necessary to make a patient go through the double agony of temporary and permanent setting of the broken bones. 6. In simple fracture gentle rubbing of the ends will assist in getting rid of shreds of tissue which invariably are caught there. 7. Nowadays a surgeon will rarely be satisfied that a bone is properly set, until he has verified by the *x*-rays. 8. Plastic splints, preferably plaster of Paris, are surely the best apparatus when they can be applied. 9. Ambulant treatment is coming more into vogue. No simple fractures require constant confinement to bed, except of the innominata and upper third of the femur. 10. It is not necessary and sometimes is very harmful to wait for swelling to disappear before a permanent dressing is put on. 11. A well-applied splint with good apposition of fragments should not be removed too early. It is not necessary to apply massage early in ordinary cases. 12. Proper time for massage is two or three weeks after fracture of upper extremities, and four or five weeks for lower extremities—if the bones are slow to unite firmly.—W. L. Estes, *International Journal of Surgery.*

Some Clinical and Pathological Phases of Gall Stones.—(1) Cholelithiasis is of frequent occurrence and usually gives rise to symptoms either severe or obscure. (2) Cholesterin as a gall-stone-producing agent must be present in an abnormal quantity. (3) Cholesterin is in a great measure a product resulting from the destruction and disintegration of the epithelium of the biliary ducts and gall bladder. (4) Bilirubin-calcium, an insoluble compound formed by the union of bilirubin and the lime salts, forms the nucleus of most of the stones formed in the gall bladder. (5) Jaundice, ptomain poisoning, and suppuration are late symptoms of cholelithiasis. (6) Dyspeptic symptoms, swarthy skin, uneasiness in the region of the gall bladder (congestion of liver), and loss of weight are some of the remote and local symptoms of the presence of gall-stones. (7) Inflammatory diseases of the duodenum and bile passages are the most direct causative factors in the production of gall stones. (8) The surgery of these cases is especially difficult and the inexperienced should not undertake it. (9) A ball-valve stone usually continues to give rise to symptoms until removed by surgical means. (10) Stones in the gall bladder, producing septic symptoms, should be removed.—Dr. A. H. Cordier, *Journal of the American Medical Association*, July 9th.

Modified Dobell's Solution.—

℞ Sodii boratis,
Sodii bicarbonatis ..... āā ʒ ij.
Glycerini ..... ♏ cc.
Acidi carbolici liquefacti ..... ♏ l.
Aquæ calidæ ..... ʒ xvi.

The original calls for the glycerite of carbolic acid of the British Pharmacopœia.

Tuberculous Infection.—Antecedent inflammatory affections and trauma are the etiologic conditions that most frequently determine tuberculous infection. —Senn.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE HEAT-WAVE PASSING—THE PRINCE'S CASE—EPIDEMIC AT BELFAST—MAIDSTONE HEALTHY—THE CONGRESS OF PUBLIC HEALTH—SIR CHARLES CAMERON'S ADDRESS—VACCINATION OR VACILLATION ACT—A JOURNAL OF TROPICAL MEDICINE.

London, August 12, 1898.

The heat wave continued into the present week and caused considerable distress and disease. There was an appreciable diminution of the temperature on Tuesday, and fewer applications for admission to the hospitals were made. The thermometer, in fact, showed a fall of twelve degrees, it marking only 77° F. in the shade, though in many localities the fall was less. With variations since there has been a decided decrease in sudden attacks and in fatalities, but other summer diseases are very numerous and keep the profession busy, and will, no doubt, affect the death rate later. The lower temperature has been generally marked and to-day there is a further fall.

The Prince of Wales has made steady progress and the surgeons in attendance are quite satisfied with his condition. There are but slight effusion in the joint and not much swelling in the surrounding tissues. The separation between the fragments of the patella does not exceed a quarter of an inch. Some passive movements of the joint have been made without giving rise to any pain or inconvenience. Of course the upper fragment has been carefully controlled on these occasions. Gentle massage has been for some time used to the muscles. In another two or three weeks it is hoped that a check splint will be employed, by the aid of which the patient may venture on crutches. The Prince has had some pleasant trips on his yacht, and a longer cruise is projected for him, when it is hoped he may be carried ashore at some of the towns and have carriage exercise.

Belfast is suffering from a serious epidemic of typhoid fever. Last week 257 new cases were notified, making a total of 605 cases during the first three weeks of August. At the weekly meeting of the poor law board on Tuesday, Dr. Biggar reported that the epidemic was rapidly increasing. More than 100 cases had been admitted to the workhouse since the previous Tuesday, and additional accommodation and

more nurses were urgently needed. The fever hospital was also overcrowded; 22 cases had been admitted on the previous evening and a larger number might be expected that night. There were 300 cases in the Workhouse Hospital, and some of the nurses had broken down under the pressure of the extra work.

The board decided to engage twelve extra nurses and two doctors.

A special meeting of the public health committee of the dispensary medical officers was held in the afternoon, to consider what steps should be taken to deal with the epidemic. It was decided to have a bacteriological investigation, with a view of tracing the origin of the epidemic and determining the best method of suppressing it. In the mean time the inhabitants are being warned to consume no milk or water until after it has been boiled.

There have been rumors of another outbreak at Maidstone, but they appear to be unfounded, for at the meeting of the town council the medical officer reported that during the first three weeks of this year, during which the great epidemic came to an end, there were fourteen cases, but during the subsequent twenty-five weeks there had been only five cases, and of these three had been in all probability imported.

On Saturday the lord lieutenant of Ireland attended a dinner to the executive committee of the Health Congress at the Royal College of Physicians in Dublin. Sir C. Cameron presided, and, in proposing the usual loyal toast, alluded to the accident to the Prince of Wales. In replying, the lord lieutenant expressed his pleasure at the progress made in sanitary science in Ireland, and especially in Dublin, where he found the drainage system and the housing of the working-classes greatly improved.

This congress was promoted by the Royal Institute of Public Health, and attracted a large number of visitors to Dublin. It extended from the 19th to the 23d inst.

The presidential address by Sir Charles A. Cameron dealt in a masterly manner with topics of general and local interest in regard to public health. Thus, after considering the causes of the high urban death rate and the encouragement afforded by the improving sanitary state of towns, as seen in the results that have already accrued, he went on to show that the increase in the English urban population has not caused an increased death rate. In fact, the increased density of population, though unfavorable to health, has not sufficed to counteract the good effects of improved public and private hygiene. London has doubled its population since 1851, and Sir Charles said it was truly wonderful that its vast population should in 1897 have had so low a death rate as 17.7 per 1,000.

That the health of English towns continues to improve is clearly proved by statistics, from which Sir Charles found that in the period 1851 to 1870 the deaths in towns were twenty-five per cent. greater than the deaths in the country for equal numbers of people; but in the period 1871 to 1896 the excess was reduced to 13.5 per cent., or nearly one-half. Here he remarked, *en passant*, that the rate was lower among females than males, and as an encouragement to intending benedicts told them that the duration of life was greater among married men than among celibates. No doubt, he said, the former were taken better care of.

Sir Charles then proceeded to describe at considerable length the state of public health in Dublin, where the congress he was addressing was assembled. He showed what had been done, what remained to be done, and urged that sanitary efforts might not be relaxed. He observed that the "good old times" so often commended were by no means happier than these, but rather the reverse. "Leprosy and malarial fevers," he said, "have vanished from these countries. Typhus fever, which once filled the wards of the Dublin fever hospitals with patients, is now rarely met with. Fifty years ago people disfigured by small-pox might be seen in every street; now that loathsome disease is disappearing under the influence of vaccination and the improved hygienic condition of towns and people.

"In this connection I must express my satisfaction that vaccination is still compulsory in Ireland, although no longer so in England. I believe that the medical profession is practically unanimous in regretting that the vaccination act, just passed, permits in England and Wales the so-called 'conscientious objector' to refuse to have his child vaccinated. In Ireland, if vaccination is sometimes neglected, it is not from want of belief in its efficacy or contempt of the law."

With reference to this it should be observed that throughout the congress the same view was held by every speaker who had occasion to allude to the subject.

In fact the new measure, which is getting the nickname of the "vacillation act," has brought much discredit on the government, and the so-called conscientious objector is becoming ridiculous, although he has put in an appearance already before the magistrates, one of whom said he had no means of satisfying himself of the objector's conscientiousness, while others have postponed the consideration of these cases.

The *Journal of Tropical Medicine* has been started, under the editorship of Mr. James Cantlie, formerly of Hong Kong, and Dr. W. J. Simpson, lately medical officer of health for Calcutta. The first number is dated August 15th, and it is proposed to issue the journal on the 15th of each month. This number contains a full report of the tropical section of the Edinburgh meeting, besides original communications, leading articles, reviews, and other material of a medical monthly. There seems to be room for such a publication, and the revived interest in tropical medicine makes its appearance timely. The subscription is 17s. a year, post free.

FLIES AS SPREADERS OF SICKNESS IN CAMPS.

To the Editor of the Medical Record.

Sir: The recent discussion of the spread of fevers and dysentery in the army has assumed the proportions of a national scandal. There is incessant talk and yet the difficulty does not abate perceptibly. There is a great outcry in reference to the necessity for pure water especially, although much is said in regard to the character of the food and the need of medical and other supplies. Under such a blaze of indignation and criticism as has flared up from one end to the other of the entire country, there is no doubt that the authorities have been stimulated to do their very best. Every effort has been made and vast sums have been expended by public and private generosity, and yet the evils complained of are mitigated only in part if at all. The hospitals remain full and the soldiers are being mustered out of service hurriedly in a sort of panic, to get them away from the centres of infection. If the war were to continue it would not be possible to secure relief in this way, except partially and incompletely by constantly changing the location of encampments, as has been done so frequently and with so much recrimination the past few months. Apparently it requires only a few weeks at most for a camp to become "stale" and all the water anywhere within reach unfit for use, and then the location must be changed absolutely and entirely, according to current ideas of such matters.

It is not to be denied that there are dangers in connection with water supply, but they are not the only or the chief ones in the case of encampments. To illustrate, the writer has seen fæcal matter in shallow trenches open to the air, with the merest apology for disinfection and only lightly covered with earth at intervals of a day or two. In sultry weather this material, fresh from the bowel and in its most dangerous condition, was covered with myriads of flies, and at a short distance there was a tent, equally open to the air, for dining and cooking. To say that the flies were busy travelling back and forth between these two places is putting it mildly. I presume that in the very case just mentioned, a microscope would have revealed fly tracks of more or less fresh excrement across the meat and bread and sugar and in the milk pitcher and water jar; the excrement so deposited doubtless contained the colon bacillus and the typhoid bacillus, as well as other varieties less harmful. Even in a private house, not at all uncleanly, I have seen typhoid dejections emptied from a commode, and the latter thoughtlessly left standing without disinfection within a few feet of a pitcher of milk just left at the door, both the commode and the pitcher attracting the flies, which swarmed about and went from the one to the other. Is it strange that there were numerous cases of the disease in that house and others in the house next to it? I have seen a shallow old-fashioned watercloset fairly buzzing with flies on a hot day, and all around it open windows and doors leading into kitchens and pantries and dining-rooms. A single case of typhoid would start a severe local epidemic under such conditions. Indeed, such observations have been made only too frequently. In encampments it is the common thing.

To clinch the argument, and apparently leave no loophole for escape, I have made cultures of bacteria from flytracks and from the excrement of flies, and there seems to be not the slightest difficulty in so doing. Indeed, the evidence of every sort is so clear that I have about reached the conclusion that the conveyance of infection in the manner indicated is the chief factor in decimating the army. Certainly, so far as is known to the writer, nothing adequate has been said about it in current discussions. On the contrary, there have been intimations of the existence of ideas that are positively dangerous, if what has been here said is true. There is no doubt that air and sunlight kill infection if given time, but their very access gives opportunity for the flies to do serious mischief as conveyers of fresh infection wherever they put their feet. In a very few minutes they may load themselves with the dejections from a typhoid or dysenteric patient, not as yet sick enough to be in the hospital or under observation, and carry the poison so taken up into the very midst of the food and water ready for use at the next meal. There is no long, roundabout process involved. It is very plain and direct, and yet when thousands of lives are at stake in this way the danger passes unnoticed, and the consequences are disastrous and seem mysterious until attention is directed to the point; then it becomes simple enough in all conscience.

As regards the precautions to be taken, it is not necessary to enter into detail. Personally the writer has insisted that disinfecting solutions, preferably that of blue vitriol, be kept constantly in chamber utensils, so that all infection may be at once destroyed where there is typhoid or dysentery. The use of this same solution in waterclosets generally is found to be very satisfactory, destroying all smell and causing the flies to cease their visits. Other measures will readily suggest themselves. The important point is that the danger be fully and adequately recognized.

M. A. Veeder, M.D.

Lyons, N. Y.

APOMORPHINE.

To the Editor of the Medical Record.

Sir: I read with interest Dr. Van Dyke's note upon the use of apomorphine with negative results in two cases of morphine poisoning. Dr. Van Dyke gives as the reason why the apomorphine did not produce vomiting that the opium, in his opinion, had deadened the vomiting centre. I am surprised that Dr. Van Dyke should have used an emetic in these cases, as the morphine was entirely absorbed, and one cannot vomit morphine or any other poison out of the circulation. I have never had any but good results with apomorphine, either as an emetic or as an antispasmodic, and I always use it when indicated. Dr. Van Dyke says that ipecac and sulphate of zinc in warm water caused vomiting when the apomorphine failed. But when the reflexes are deadened to one emetic, surely they are to the others. Perhaps the apomorphine used in these cases had been kept on hand for some time and had lost its properties.

S. A. Visanska, M.D.

66½ Whitehall Street, Atlanta, Ga.

EARTH CLOSETS IN THE ARMY CAMPS.

To the Editor of the Medical Record.

Sir: Dr. B. T. Kneeland, formerly surgeon of the one hundred and thirtieth New York infantry, and who is still at the age of seventy in active practice at Dalton, N. Y., relates the following, which might with profit be brought to the attention of some in charge of our army camps to-day.

When located in camp at Suffolk, Va., in 1861, he asked for and was given a detail of five men from each company. These he directed each morning to cover with two inches of fresh earth the daily accumulation in the sinks. Before this various "deodorizers" had been employed, which had proven comparatively ineffective.

The colonel of the regiment, a man generally well informed and who especially prided himself on his fair knowledge of affairs pertaining to medicine and sanitation, at once missed "Uncle Sam's regulation odor," as he termed it. On making inquiry he was reminded by the doctor that one other authority on such matters should have been included in his reading, and was referred to Moses.

This practice, which afterward was generally employed in the army, Dr. Kneeland claims had its inception as above described.

F. J. Bowen, M.D.

Mt. Morris, N. Y.

ANÆSTHESIA AND ITS ADMINISTRATION IN GREAT BRITAIN AND IRELAND.

To the Editor of the Medical Record.

Sir: My attention has been drawn to an article which appeared in your issue of November 13th last, under the title of "Anæsthesia and its Administration in Great Britain and Ireland," by Prof. George Bell Todd, of Glasgow, and in which I am made to say that the Women's Hospital, Euston Road, London, "is remarkable for the failures in administering chloroform correctly."

The article in question was a private communication from myself to a friend, and published without my knowledge or consent.

With reference to the extract above quoted I would remark that information has been furnished to me by the authorities of the said hospital, from which it appears that between January 1, 1894, and December 31, 1897, anæsthetics were administered thirteen hundred times at the said hospital, that there were during

that period two deaths on the operating-table. Inquests were held in both cases, and in one instance only was a verdict of "death from chloroform" returned. This shows that the above-quoted statement is unfounded and incorrect, and I regret that the same should have appeared in the article referred to.

GEORGE BELL TODD, M.B.

GLASGOW, August 25, 1898.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending September 10, 1898:

	Cases.	Deaths.
Tuberculosis	159	172
Typhoid fever	143	49
Scarlet fever	61	4
Measles	41	5
Diphtheria	86	13
Chicken-pox	1	0
Cerebro-spinal meningitis	0	5
Laryngeal diphtheria (croup)	2	2

A Rat-Plague Bacillus.—Dr. Isatchenko, of the bacteriological laboratory attached to the agricultural department of the Russian government, has just made a preliminary communication on a new microbe pathogenic to rats, which he has discovered. A disease which assumed epidemic proportions broke out among the rats kept for experimental purposes in the laboratory, and from the liver and spleen of affected animals a bacillus was isolated which proved on inoculation to be extremely fatal as regards both rats and mice. Receiving food infected with this organism rats and mice invariably succumbed, the former after from eight to fourteen days, the latter after from four to eight days. Following Pasteur's example in the case of a bacillus similarly fatal to rabbits, attempts were made to turn this new microbe to practical account and utilize it as a living rat poison. The results so far have not been very encouraging, but further experiments are being made in this direction.—*Nature.*

Vegetables in Gout.—Some discussion has taken place of late in connection with the use of rhubarb as an article of diet in rheumatism. Little authoritative reference can be found to the subject in books on diet. The use of rhubarb in kidney troubles is certainly contraindicated, because rhubarb contains oxalate of lime, and for gouty persons it is regarded as inadvisable for a similar reason. In gout it is considered that rhubarb may tend to increase or to favor the production of uric acid. But doctors differ on spinach, which also affords oxalic acid, and tomatoes, that contain it in but small quantity, are allowed to figure in the gouty man's diet list. At a recent meeting of the Royal Medical and Chirurgical Society Dr. Luff read an interesting paper on the minerals of vegetables, with reference to gout. The general result of his investigations is that the minerals in spinach, Brussels sprouts, French beans, winter cabbage, turnip tops, turnips, and celery are all beneficial to a gouty person. Their minerals act chemically in preventing the deposition of gouty matter in the tissues, and spinach is said to occupy the foremost place in the list in respect to this action. These researches are interesting, because they lead us nearer to the reason why a vegetable diet should benefit a gouty man. In other words, science comes to explain the meaning of a practice which, dating from very early periods, was founded entirely upon empirical data.

The Loss from Typhoid Fever.—In the United States the loss through typhoid fever and other diseases whose germs are disseminated by our sewage-polluted water supplies is almost incomprehensible. It is within bounds to estimate the number of persons annually thus afflicted at three hundred thousand, of whom fifty thousand die. At the lowest legal valuation set upon human life, the enormous total of $278,000,000 is found to be the equivalent cash loss. If by improvement of the water supply the death rate could be reduced eighty-five per cent., $236,000,000 would remain for this purpose, and this amount at five per cent. annually for interest and sinking-fund charges for forty years, would justify an outlay of no less than $4,054,671,000 for water purification.—*The Sanitarian.*

The Surgical Treatment of Insanity and idiocy has gone out of fashion. Craniotomy may be practically excluded nowadays from the therapeutics of either microcephalus or hydrocephalus. Indeed, a celebrated surgeon has recently declared that the only thing in favor of the operation is the fact that a fair proportion of patients happily die in consequence. Trephining in general paralysis has been replaced by vertebral puncture with equally doubtful results. The gynæcologist, however, rushes in where the ordinary surgeon fears to tread, and Dr. Hall, of British Columbia, influenced by the work of Dr. Hobbs, of London, and Dr. Roche, of Baltimore, has come to the conclusion that a very large proportion of female lunatics suffer from diseases of the pelvic organs, and that careful gynæcological examination "would send at least one patient to the hospital for every two sent to the asylum." Four inmates of the provincial asylum (all he has hitherto examined) were so affected. In one he removed the appendages and curetted the uterus and she recovered perfectly, physically and mentally, in two months. As a rule, the patients are ignorant of their physical condition and do not complain of pelvic pain or inconvenience. He concludes: "It would be interesting to continue the analogy in the treatment of the opposite sex. A very limited experience has shown a striking parallelism."—*Canadian Practitioner.*

The Electric Hæmostat.—Successful demonstrations are reported to have been given in London by Lawson Tait with his electric hæmostat, an instrument which, as its name denotes, is intended for the arrest of bleeding in surgical operations. A platinum wire arranged to carry a current is inclosed in the blades of a pair of steel forceps or any other requisite utensil, the wire being insulated by a bed of burnt clay. In practice a current of suitable voltage is turned on, the artery seized and compressed, and in a few seconds the tissues and arterial walls are so agglutinated that the passage of blood is rendered impossible. The temperature employed is about 180° F., showing a great difference between this and the electrical cauterizing instruments, and the necessity for a ligature is removed.

Trained Nurses in Jamaica.—Major-General Hallowes, who is commanding the troops in Jamaica, is endeavoring to raise money to provide two trained nurses for the military hospital there, the dearth of trained nurses having been severely felt during the late outbreak of yellow fever.

The Human Brain.—A German biologist has calculated that the human brain contains 300,000,000 nerve cells, 5,000,000 of which die and are succeeded by new ones every day. At this rate, assuming the correctness of the German's guess, we get an entirely new brain every sixty days.

Anecdotes of Syme.—Malcolm Morris relates the following story of Syme, at once showing the honesty of the man and his ready tact. He was fond of impressing on his pupils the propriety of always making an exploratory puncture before proceeding to remove the breast. On one occasion, before operating on a woman with a breast of stony hardness, he repeated his customary warning, adding that although in the case before them there could be no doubt that the disease was scirrhus, he would yet by way of showing an example of obedience to a salutary precept take the precaution which he wished them to employ in similar cases. Accordingly he plunged the needle into the patient's breast, with the result that a gush of pus took place. Instead of being disconcerted, Syme turned to the class and, with a little bow, said: "There, gentlemen, that points, in a manner which I didn't expect, the moral I wish to impress upon you." So struck were the men by the utter freedom from humbug thus displayed that they cheered the teacher who had turned his own mistake into a profitable lesson for them. Medical students are the most ruthless of critics, and only a really great man could have done this. Dr. Donald Maclean, of Detroit, an old pupil of Syme, says that Syme, though a most abstemious man himself, disliked the "unctuous rectitude" of perfervid teetotalers. Dr. Maclean remembers the case of a boy of not more than twelve years of age who appeared at the clinic, suffering from a peculiarly loathsome form of disease. Syme, with an expression of infinite disgust on his face, asked the youthful sinner the question, "Are you a teetotaler?" to which the little hypocrite replied, "Oh, yes, sir." "I thought so," quietly remarked Syme, with an expressive twinkle in his eye.

Bismarck's Physician.—Mr. Sidney Whitman, according to an English weekly, says that Schweninger's relations with Bismarck were even closer than those which united Gladstone and Sir Andrew Clark. Mr. Whitman, who met Dr. Schweninger at Friedrichsruh, says that there is something about the personal appearance of the professor—his dark searching eyes, his broad smile revealing a powerful set of small faultless teeth—which gives one the idea that the prowling man with the scythe is fain to slink off reluctantly when he encounters him. There is something in the grip of his hand which inspires confidence, and his jovial laugh is a tonic for any complaint. The fact that Schweninger did not despair of Bismarck's recovery from what was said to be a mortal illness by the great medical authorities of Germany some years ago, is alone sufficient to explain the reason of the affection Bismarck felt for him.

Longevity of Musicians.—A writer in a French newspaper the other day made an interesting announcement respecting the longevity of musicians. As a matter of fact, though a few of the most noted musicians of the world have died young—to wit, Mozart at thirty-five, Schubert at thirty-one, Bellini at thirty-three, Mendelssohn at thirty-eight, and Weber when he was but forty—quite a large number have lived to be very old men. Those who died between sixty and seventy years of age include Bach, Bulow, and Rubinstein. Living beyond seventy years came Gluck, Gounod, Handel, Liszt, Meyerbeer, Rossini, Spontini, and Wagner, while the great age of eighty-nine was attained by Auber and others. Dying at past eighty were Cherubini, Cramer, Lachner, Palestrina, Rameau, Schutz, and Taubert. The average age of musical celebrities is about sixty-seven years.

Colonization in the Tropics.—Benjamin Kidd, writing to the London *Times*, says: "The attempt to acclimatize the white man in the tropics must be recognized to be a blunder of the first magnitude. All experiments based upon the idea are mere idle and empty enterprises foredoomed to failure. Excepting only the deportation of the African races under the institution of slavery, probably no other idea which has held the mind of our civilization during the last three hundred years has led to so much physical and moral suffering or has strewn the world with the wrecks of so many gigantic enterprises."

Napoleon as Schenck's Predecessor.—Napoleon's opinion on the determination of sex was less prolix and more easily followed than the present theory of Dr. Schenck's, with which we are all familiar, if we may judge from a letter dated August 31, 1806, addressed to the Princess Augusta, the wife of Prince Eugene. In this epistle the emperor advises his sister, who was then in an interesting condition, to take good care of herself, and adds: "Try not to have a daughter. I will give you a receipt to this end, but you may not believe in it; that is, drink water and wine daily." This receipt is simple and much easier to follow than Dr. Schenck's. It appears, however, that it is either not infallible or else the princess did not follow it, for she had a girl.—*Le Nord Medical.*

Diagnosis of Infectious Diseases.—I believe the day is not far distant when the physician will diagnosticate the infectious disease to which he is called, not by the fever chart but by the chemical analysis of the urine, which carries off the bacterial alkaloids in solution, and he will treat and cure his patient by the hypodermic administration of the physiological and chemical antidotes of the known bacterial alkaloids.—Dr. Ernest S. Pillsbury, *Pacific Medical Journal.*

Health Reports.—The following statistics concerning small-pox, cholera, plague, and yellow fever have been received in the office of the supervising surgeon-general of the Marine Hospital service during the week ending September 10, 1898:

Small-Pox—Foreign.

		Cases.	Deaths.
New York, Livonia	During month of July	1	
Waverley	During month of July	5	
New Mexico, Albuquerque	August 2d to September 4th	52	
Ohio, Put-in-Bay	September 6th	26 *	

* Originated among negroes brought from Asheville, N. C.

Small-Pox—Foreign.

Belgium, Antwerp	August 6th to 13th	1	
Antwerp	August 13th to 20th	2	1
Brazil, Rio de Janeiro	July 22d to 29th	2	
India, Bombay	August 2d to 9th	..	1
Madras	July 23d to July 29th	..	1
Japan, Awamori Ken	July 23th to August 16th	44	9
Fukushima Ken	July 28th to August 16th	1	
Oita Ken	July 28th to August 16th	1	
Yamagata Ken	July 28th to August 16th	1	
Norway, Christiania	August 13th to 20th	1	1
Russia, Odessa	August 13th to 20th	2	
St. Petersburg	August 6th to 13th	1	
Warsaw	August 6th to 13th	..	6

Cholera.

India, Calcutta	July 16th to 23d	..	6
Madras	July 23d to 29th	..	36
Madras	July 29th to August 5th	..	38
Japan, Aichi Ken	July 28th to August 16th	8	5

Plague.

India, Bombay	August 2d to 9th	..	85
Calcutta	July 16th to July 23d	..	4

Yellow Fever—United States.

Louisiana, Franklin *	September 5th	1	
Franklin †	September 6th and 7th	6	
Franklin ‡	September 8th	..	1
Mississippi, Orwood	September 3d	9	
Orwood	September 5th	3	
Orwood	September 6th	3	
Taylor	September 5th	6	
Taylor	September 6th	4	
Taylor	September 7th	3	

* To date, 12 cases and 1 death. † In camp 3, in town 3. ‡ To date, 30 cases and 2 deaths.

Yellow Fever—Foreign.

Brazil, Rio de Janeiro	July 23d to 29th	18	13
Costa Rica, Port Limon	August 16th to 24th	..	2
Jamaica, Kingston	July 31st to August 6th	1	1
Mexico, Tampico *	August 21st to 28th	..	40
Vera Cruz	August 28th to 25th	..	4

* Number of cases not reported.

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Original Articles.

STATE AND MUNICIPAL CARE OF CONSUMPTIVES.[1]

BY S. A. KNOPF, M.D.,

NEW YORK.

MR. PRESIDENT, MEMBERS OF THE CONFERENCE OF STATE AND PROVINCIAL BOARDS OF HEALTH OF NORTH AMERICA: Your invitation to address you on the important subject of State and municipal care of consumptives, extended to me as one of the general profession in no wise connected with any State, provincial, or city board, has been a pleasant surprise to me. While I thank you for the high honor you have conferred upon me individually, I feel deeply the significance of your generous act, being fully aware that you wished above all to honor thereby the general medical profession. There has been of late years growing up in some parts of our country a certain antagonism between the appointed sanitary authorities and the profession at large. Your wish to listen to a humble representative of that great body of American physicians who are on the other side of the camp, who occupy no official position, who are, in other words, simply practising their profession, is perhaps the best evidence of your earnest wish to co-operate with the general profession in all that concerns the interest alike of patient, physician, and the public health.

For this I thank you, because it makes my task easier. To my mind there is nothing more difficult than to talk about tuberculosis, its cure or its prevention, without taking as the basis of one's discourse the absolute assurance of the co-operation of the general profession and the sanitary authorities. So in this spirit of harmony let us enter upon the consideration of our subject proper.

In a paper on the prophylactic treatment of pulmonary tuberculosis, read before the American Climatological Association at the meeting of the last medical congress in Washington, in 1897, I said: "To prevent pulmonary tuberculosis we must begin with treating the child *in utero*."[2]

Mr. President and gentlemen, the State and municipal care of consumptives must also begin with the child *in utero*.

This is not the place to discuss the prophylaxis in regard to the procreation of a tuberculous progeny, which must, according to our present conceptions of law and ethics, remain the delicate task of the family physician. The duty of the sanitarian and the government in regard to the consumptive poor commences with the care of the tuberculous mother after conception. All I may be privileged to say here is that, according to the experience of prominent obstetricians (foremost among whom I wish to mention my two late and much-regretted teachers: Professor Lusk, of New York, and Professor Tarnier, of Paris), intervention after a tuberculous conception for the purpose of cutting short the duration of gestation, and thus saving the mother's life, has proved disastrous in the majority of cases.

During my visits, some years ago, to many of the sanatoria[1] for consumptives of Europe and of our own country, I inquired into the results obtained by the hygienic and dietetic treatment in those places in cases of pregnant tuberculous patients, and I learned, to my surprise, that a goodly number of these women not only did remarkably well during their pregnant state, but bore healthy children and continued to improve generally. Dettweiler, Römpler, and Wolff[2] have kept some of these tuberculous mothers under their observation for years, and no relapses were noted. The only conditions, *sine qua non*, in such cases are the artificial feeding of the child, or, better yet, giving the latter the benefit of a healthy wetnurse, and a prolonged and persistent treatment of the tuberculous condition of the mother under the best hygienic surroundings. Thus, it seems to me, the best policy for the government would be to create institutions, which might perhaps justly be called "maternity sanatoria," where the tuberculous mother, coming from our tenement districts, should be taken at least a few months before her delivery, and should remain until some time after complete recovery from her childbed.

The beneficial effect on the woman's and child's constitutions through such an arrangement can hardly be overestimated. Leaving aside the physical well being thus largely assured to mother and child at a period when their organisms need the most tender care, the hygienic training which the mother will have received in such an institution will be of lasting utility to herself and child, to the family, and to the community.

These maternity sanatoria need not be situated at a great distance from the city. All that would be essential is that they should be erected on good porous ground, preferably somewhat elevated, and in a locality where the atmosphere is as pure as possible. The buildings should be constructed according to the principles of modern obstetrical science and modern phthisio-therapy. The physician in charge should be experienced in both these branches of medicine.

The knowledge gained by the mother in the maternity sanatorium will, in all probability, suffice for her to bring up the infant as a relatively strong child and protect it from the dangers of tuberculous infection. But the inherited predisposition may still remain, and at the time the child begins to go to school the State should again make provisions. I have learned by private inquiry that a pregnant woman who has the misfortune to be syphilitic or tuberculous has great difficulty in gaining admittance to maternities supported

[1] Address delivered by invitation at the thirteenth annual meeting of the Conference of State and Provincial Boards of Health of North America, at Detroit, Mich., August 11, 1898.

[2] "Aero- and Hydrotherapeutics in the Treatment and Prevention of Pulmonary Tuberculosis." N. Y. Med. Journal, July 24, 1897; and Transactions of the Am. Clim. Assoc., vol. xiii.

[1] Contrary to the custom of many English-speaking people, especially in the United States, I call these establishments *sanatoria* and not *sanitaria*. The former (sanatorium), from *sanare*, to heal, gives a better equivalent to the German "Heilanstalt," the word used by the originator of this system (Brehmer). Secondly, the word sanitarium, from *sanitas*, health, is usually employed to designate a place considered simply as especially healthy, a favorite resort for convalescent patients.

[2] Answer to personal inquiry.

by private contributions. I know from official sources that tuberculous children are not only unwelcome in public schools, but are not infrequently refused admittance, on the ground of being afflicted with a contagious disease. If I am not mistaken, it was in Toronto[1] that the right of the municipality to refuse a tuberculous child admission to a public school was tested for the first time before a court, and sustained on the ground of the contagious nature of the disease.

I do not wish to question the wisdom of this judgment, but I should like to know what is to become of the child if its parents are too poor to pay for private instruction? The child cannot return to the public schools, for its disease is a chronic one and may last for years. If the municipality refuses the benefit of an education in the ordinary public schools to such a child, does it not become an imperative duty to provide special schools for tuberculous children?

Schools, however, in the ordinary sense of the word, would do but little good to such a child. In France, Belgium, and some other European countries, there have existed for years sanatoria for the treatment of tuberculous children, maintained by the municipalities. Attached to all these institutions are regularly established schools. To provide a place where tuberculous children and the children of tuberculous parents—the weaklings of the flock, as they are graphically called by my friend, Dr. Irwin H. Hance, of Lakewood—shall be taken care of becomes the duty of the government. In these school sanatoria the children will have a chance to be cured, if possible, of their disease or their predisposition, and at the same time they will receive the education which the State owes to all the children of the community. The majority of these school sanatoria may be advantageously placed on the seashore, for it seems a well-established fact that the tuberculous manifestations in childhood, which are most frequently observed as joint tuberculosis or tuberculosis of the bones or of the glands, do remarkably well in marine climates.

The selection of such children for sanatorium treatment would be the task of the school physician, and one should be attached to every public school. He, seeing the children daily, in order to prevent the introduction and propagation of acute diseases, will soon discern between the robust and well-nourished and the weak, dyspeptic, and not infrequently underfed pupils. These latter will, *ipso facto*, always be or become candidates for tuberculosis. If they are placed in time under good hygienic care, their chances of becoming strong and healthy citizens will be materially increased. For children suffering from pulmonary tuberculosis an institution could easily be annexed to each of the larger mountain sanatoria for consumptive adults, of which I shall speak presently.

But before doing so let us ask ourselves: Is there really need of the State and municipality taking care of the tuberculous poor adult? This question has been answered by the greatest sanitary authorities of all civilized countries with a most emphatic yes. Dettweiler,[2] Leyden,[3] and Liebe[4] have spoken for Germany; von Schrötter[5] for Austria; Grancher,[6] Letulle,[7] and Petit[1] for France; Weber,[2] Lindsey,[3] and Walters[4] for England; Hansen[5] and Saugmann[6] for Denmark and Sweden; and in the United States we have in Bowditch,[7] Hamilton,[8] Biggs[9] and Prudden,[10] Lee, Trudeau,[11] Flick,[12] Hinsdale,[13] Otis,[14] Shrady,[15] and others[16] strong advocates for the establishment of State and municipal sanatoria for the care and treatment of the consumptive poor.

The crowned heads of Europe, such as the Czar of Russia, the Empress of Germany, the Emperor of Austria, the King of Saxony, the King of Sweden, and the young Queen of Holland have placed the sanatoria for the consumptive poor under their high protection, and have opened their private purses for their support. The nobility and the leaders in finance, art, and literature have been eager to imitate the noble example set by their sovereigns, and the latter, too, have given freely toward the erection and maintenance of such institutions. Thus, in the countries just mentioned a number of establishments now flourish which are doing a world of good by curing the curable tuberculous cases and taking care of the hopeless ones, thus diminishing countless centres of infection. Let me advise again, as I have before,[17] the statesman, physician, or philanthropist who doubts the need of such institutions in the United States to visit the consumptive poor in the tenement districts of our large cities, and study the hygienic and social conditions of these sufferers in their surroundings. Let him watch some of the tuberculous families. After lingering a year either the mother or father dies of consumption, and the remaining partner, having become infected by nursing the companion, dies a year later, after having buried half of the children, who have succumbed to tuberculous meningitis.

I am sure these visitors will emerge from the dark, dreary rooms and the crowded, unclean houses which serve as habitations for millions of poor people thoroughly convinced of the urgent need of measures to

[1] Medical Week, Paris, September 14, 1894.

[2] Dettweiler: "Mittheilungen über die erste Volksheilstätte für unbemittelte Lungenkranke in Falkenstein i. Taunus." Deutsche med. Wochenschrift, 1892, No. 43.

[3] Von Leyden: "Ueber die gegenwärtige Behandlung Tuberkuloser und die staatliche Fürsorge für dieselben." XII. International Congress, Moscow, August 25, 1897.

[4] Liebe, Georg: "Die Bekämpfung der Tuberculose." Deutsche Vierteljahrsschrift für öffentliche Gesundheitspflege, 1898.

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[10] Lee, Benjamin: "Present Attitude of Sanitarians and Boards of Health toward Pulmonary Consumption." Paper read before the section of State medicine of the Am. Med. Assoc., June 3, 1897.

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[12] Flick: "Special Hospitals for the Treatment of Tuberculosis." Times and Register, March 15, 1890.

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relieve these consumptive sufferers. Let these doubters also experience the difficulty of gaining admittance as a tuberculous patient into a general hospital supported by private charity, or let them watch the rapid decline the poor consumptive often makes, even if he has been fortunate enough to be admitted to a general public hospital, and they will become still more convinced of the urgent need of creating special institutions for this class of patients.

It will be clear to them that something must be done in the interest of the sick as well as in the interest of the still healthy portion of the community.

But how can this be done, and done effectually? What class of patients should the State or municipality take care of? Only the curable or only the incurable ones? Only the poor or also those of moderate means?

If any government is in earnest in its endeavor to combat tuberculosis effectually, besides its regularly enforced laws against bovine tuberculosis, its thorough hygienic and prophylactic measures against tuberculosis in man through sanitary regulations and public instruction, it must take upon itself the care and treatment of the curable and incurable cases of tuberculous patients, among the poor and among those of limited means. I mean here by limited means a financial condition which does not permit a tuberculous patient to enter a private sanatorium or to have at home such medical, hygienic, and dietetic care as will assure him the best possible chance of recovery.

The next point to be considered would be how to recruit the patients, and how to discriminate between the proper and improper cases, and thus avoid increasing the dreadful and degrading abuse of medical charity, from which we all, and especially the general practitioners, suffer so much in these days.

Permit me to present to you a few suggestions in connection with these problems. Just as there exists in nearly all States or municipalities a commission or a number of special examiners for the purpose of determining who is a proper subject for State care in an asylum for the insane, so should there exist a commission for the determination of admission to a municipal or State institution for consumptives.

Such a commission, composed of a certain number of general practitioners and health officers, should be aided in its work by the charity organizations. Each and every case should be investigated by a combined committee of physicians and laymen, for the following purposes:

1. To determine the applicant's condition by a medical examination.

2. To visit his home if he has been found tuberculous, and to institute such hygienic measures as seem necessary (distribution of pocket spittoons, disinfectants, etc.).

3. To examine the other members of the family in order to find out if any of them have also contracted the disease, and if so, to counsel proper treatment.

4. To report in full to the sanitary authorities concerning the condition of the patient's dwelling. Its renovation or even destruction may become imperative when it is evident that tuberculosis has become "endemic" there, owing to the condition of the soil or to other sanitary defects.

5. To determine the financial condition, whether the patient is or is not able to pay, and whether or not by his being taken to an institution the family will become destitute.

If the latter should be the case, it would become an imperative duty for the municipality to provide for the family. In many cases a letter of inquiry, sent to the former medical attendant of the patient, would materially aid the work of the investigation committee.

Any individual should have the right to present himself for examination, and every physician should be at liberty to recommend any person for examination to the board of his precinct or district.

The institutions needed to carry out this plan would be:

1. A centrally located reception hospital and dispensary. The dispensary should treat the ambulant tuberculous patients, whose admission into the sanatorium is impracticable or has to be delayed for want of room. These dispensaries should also serve the patient discharged from the sanatorium as a place to seek counsel, and thus aid in his continued improvement or guard against approaching relapses.

2. One or several city sanatoria, located in the outskirts and if possible in a somewhat elevated region where the atmosphere is known to be pure. Here all patients should pass through a preparatory sojourn before being sent to the mountain sanatorium. The more advanced cases would all be retained here.

3. One or several mountain sanatoria at no greater distance from the city than three or five hours by rail, at an altitude, if possible, of between one thousand and two thousand feet, on porous ground with southern exposure, and as nearly as possible protected against the coldest winds, preferably surrounded by a pine forest. A farm in the vicinity, where the thoroughly convalescent patients could do light work, might make the institution in a measure self-supporting. To this place the selected incipient and the improved cases from the city sanatorium should be sent to complete their cure. To the mountain sanatorium there should also be attached a department for children suffering from pulmonary tuberculosis.

4. Several seaside sanatoria for the treatment of children afflicted with tuberculous diseases of the joints and other tuberculous (scrofulous) manifestations.

5. A maternity sanatorium. Of the requirements of such an institution I have already spoken.

By this plan you will see that I am in favor of treating tuberculous patients near their homes, and in the same or nearly the same climate as that in which they will have to live and work after their restoration to health. My reasons for advocating such principles are founded on the experience of all modern phthisio-therapeutists, who have demonstrated that the hygienic and dietetic treatment in closed establishments is feasible and successful in nearly all climates. I know from personal observation that cures of pulmonary tuberculosis effected in our ordinary home climates, which are in the average not considered as especially favorable to this class of sufferers, have been more lasting and more assured than cures obtained in more genial climes. And I may perhaps say right here that, with all due deference to the opinion of others, I do not believe there exists any climate which has a specific curative quality for any form of pulmonary tuberculosis. Climate can only be considered a more or less valuable adjuvant in phthisio-therapeutics, but not a specific.

It is, furthermore, my firm conviction that for social and economic reasons the majority of tuberculous patients will have to be treated near their homes. Only by adhering to this principle can we expect to cope successfully with tuberculosis—this disease of all climes, but which is most prevalent in large centres of population, where civilization has seemingly attained the highest standard. For this reason a corresponding development of sanitary science and the widest diffusion of the knowledge of hygiene are indispensable wherever men mass themselves together in large urban communities.

That through the presence of properly conducted sanatoria for consumptives not the least danger can arise to the vicinity where such institutions may be placed, I have endeavored to demonstrate in several of my previous writings[1] by citing the official statistics concerning the mortality from tuberculosis for forty and for one hundred years, respectively before and after the establishment of sanatoria for consumptives in certain villages in Germany. To be brief, I will only summarize these statistics here by saying that in the two villages, Goerbersdorf and Falkenstein, where five of the largest sanatoria are situated, the mortality from tuberculosis has actually decreased among the village people more rapidly and more largely than anywhere else, it being now one-third less than before the establishment of those institutions. Thus we see that properly conducted sanatoria for consumptives not only serve as hygienic educators to individuals and families, but as instructors in hygiene to whole communities. The example in scrupulous cleanliness set by employees and inmates of such sanatoria thus bears the best fruits. The same cannot be said of open health resorts, where the regulations concerning the expectoration are less severe. In these places the mortality from tuberculosis has increased among the native population since they have been frequented by consumptives. I am able to substantiate this statement by letters addressed to me by Dr. Ballestre, of Nice, France, and Dr. Atkins, of Las Vegas, New Mexico, both health officers of their respective localities. Recent personal inquiries in some of the boarding-places in the Adirondacks where consumptives congregate, outside the jurisdiction of the sanatorium, indicate, I am sorry to say, the same condition there.

And now, Mr. President and gentlemen, let us in conclusion treat the most difficult part of our discourse, that is to say, the social and economical aspect of the tuberculosis problem.

Let us take for illustration a community of 1,000,000 inhabitants. With an average death rate of 25 per 1,000, one-fifth of whom die from tuberculosis, the community would lose 5,000 a year from this disease.

Some sanatoria claim as many as seventy per cent. of cures[2] when the patients are admitted to treatment in the incipient stages, and I have reason to believe that these figures are exact, for pulmonary tuberculosis in the earlier stages is indeed one of the most curable of all chronic diseases. But let us presume a percentage of fifty only. Thus if these 5,000 had been placed at the onset of their disease under proper treatment in sanatoria, 2,500 human lives would surely have been saved. Statistics have amply shown that tuberculosis is most prevalent among the poorer classes. The relation is about as two to one. So I believe that I am nearly right when I say that of those 5,000 over 3,000 at least are of the poorer classes, and of these 2,000 have died most likely in public institutions.

From personal experience gained in some of the larger general hospitals in Europe and in the United States I have learned that a tuberculous patient rarely makes a continuous stay in one hospital. He usually improves after his first sojourn and leaves, only to turn up after a few months in the same or another hospital for a second period of rest, and so on. But, all in all, the time he spends in general hospitals, to which he is usually admitted when in the advanced stage, is rarely less than fifteen months.

[1] "Are Sanatoria for Consumptives a Danger to the Neighborhood?" MEDICAL RECORD, October 3, 1896. Revue de la Tuberculose, Paris, vol. iii., pp. 313–319.

[2] Semiannual report of the Loomis sanatorium for consumptives, 1898.

According to the last published annual report of the commissioners of public charities and correction of the city of New York for the year 1895, the daily expense per capita in the general hospitals of that city is $1.16. Thus the patient costs the municipality up to his death $522, aside from the money expended on the family of the patient, should the latter have been its only bread winner.

The general hospitals claim few cures of pulmonary tuberculosis, and it seems almost as if this money had been uselessly spent, since a general hospital cannot even be considered a safe place for isolating a consumptive. If the same patient had, for example, been treated at the Adirondack Cottage Sanatorium or at a similar institution, and been sent there at an early period of his disease, he would have had sixty per cent. more chances of recovery, and would have cost only $1 a day, and that during a period of perhaps only six or nine months.

Thus two thousand tuberculous patients treated in the general hospitals in the city of New York, with very little chance of being cured, but with much chance of doing harm to their fellow-patients suffering from acute diseases, cost the city $1,044,000. Treated in sanatoria or special hospitals, with twenty to fifty per cent. of chances of recovery, according to the stage of their disease, and even if we should allow them just as long a stay in the special institution as we grant to the advanced cases in general hospitals, the cost would be only $890,000. Thus with a saving of at least $150,000 and the saving of hundreds of lives, countless centres of infection would be extinguished, which otherwise would endanger the families and neighbors of these tuberculous invalids.

But aside from that, think of the gain to the commonwealth by restoring to health the many bread winners whose families, under the present conditions, might become a burden to the community.

As stated above, these institutions should be open not only to the poor but also to those in moderate circumstances who can pay part of the expense. For this latter class of patients, many of whom for reasons of a noble feeling of independence hesitate to accept public aid, I have often wondered if a plan, something similar to the State invalidity insurance companies of Germany, could not be inaugurated in this country. There the moment an individual enters upon the career of an ordinary laborer or servant he is obliged to be insured against sickness, accidents, and old age. If he develops tuberculosis he is immediately sent to one of the many sanatoria of that country. The government authorities, who are at the head of this State insurance company, have long since learned that, through a timely treatment in a sanatorium, the tuberculous individual is most speedily and lastingly cured, and consequently with the least expense.

Dr. Weicker, of Goerbersdorf, to whose institution a great many such patients are sent by the government, writes me that the percentage of cures among these is higher than among the private patients. His latest statistics give a percentage of eighty of established cures, with only an average of seventy-six and one-half days of sojourn in the sanatorium. This marvellous result is to be explained by the fact that the government insurance officials send their patients to the sanatorium at much earlier periods than a private physician is likely to do.

Thirty-seven of these government insurance companies have, according to their published figures for 1897, collectively assisted 4,480 consumptives, of whom 4,432 were sent to subsidized sanatoria. Nearly all these State insurance companies contribute to the funds of such establishments; some have found it to their advantage to erect special sanatoria of their own. For the year 1897 these State insurance socie-

ties of Germany invested altogether 1,300,000 marks in sanatoria for consumptives, and for 1898 a fund of between three and four millions has been destined for that purpose.[1]

How would it be if one of our most thickly populated States, after having created a number of sanatoria, should try the experiment of a State insurance company against tuberculosis? How many families, even of the classes in fair circumstances but in which tuberculosis is dreaded on account of the disease having been the cause of the death of some of their members, would not gladly avail themselves of this opportunity—especially since the existing life insurance companies refuse applicants with a family history of tuberculosis? This opportunity, offered by the State, would mean giving to their children the certainty of being afforded the best possible chance of recovery, should they be taken down with the family disease. No matter at what age, as long as the individual remained insured, there would be the State sanatorium to receive and treat him. A payment of, for example, fifty cents a month from the birth of the child, would give to the State insurance company after fifteen years, with the accrued interest, a capital of nearly $150. By paying the aggregate amount up to the date of application, any predisposed individual might be insured at any time, and such an institution be called into life at once.

The greatest chance of a predisposed individual being taken sick is between the age of puberty and thirty. The chances of the disease becoming healed without ever having been discovered are between twenty and twenty-five per cent. I am in a position to verify this percentage by statistics which I compiled for my book on tuberculosis.[2] Besides reviewing the vast literature on the subject I addressed three hundred letters of inquiry to the leading pathologists of the world, and as a result I can say that out of every one hundred autopsies made on people having died accidentally, or of diseases other than tuberculosis, twenty to twenty-five showed evidences of healed tuberculous lesions (cicatrization or calcareous formation). The chances of this disease being cured in from six to nine months, if it is discovered at an early period, are at least fifty per cent. It is not necessary to be an insurance expert to see by these figures that the State would hardly be a great financial loser by creating such an insurance institution. But the greatest benefit which would accrue to the State or commonwealth through such an enterprise would be the paving of the way toward a complete State or municipal control of tuberculosis among the population which, owing to their social conditions, could otherwise not properly be cared for, and would constitute forever an impediment to the thorough prophylaxis and possible eradication of the disease.

To carry on the various State or municipal institutions to be erected, with a view to effectually stamping out tuberculosis, a large staff of competent physicians would be needed. These physicians should be paid for their labor. It is inevitable that through taking thousands of patients into such institutions the general practitioner will lose some of his income. Let the State compensate him by paying him for the service he may render in any of the institutions (sanatoria, hospitals, or special dispensaries) created by the State with the view of combating tuberculosis.

[1] Heilstätten Korrespondenz, 1897.

[2] Knopf: "Les Sanatoria Traitement et Prophylaxie de la Phthisie Pulmonaire." Second edition, Paris. G. Carré et Naud, éditeurs. Contained also in "Modern Prophylaxis of Pulmonary Tuberculosis and its Treatment in Special Institutions and at Home." Alvarenga prize essay of College of Physicians of Philadelphia for the year 1898.

To proceed with this work as soon as possible, I should suggest transforming some especially favorably located general hospitals into special hospitals for consumptives. Create sanatoria for children on the seashore, for adults in mountainous or at least in elevated and healthy regions. If your State or provincial funds are not large enough to meet the demand, appeal to some of the many generous and patriotic philanthropists, whose hearts and hands are ever open when there is a question of saving American lives. In 1896 Vaughan, writing on the restriction of tuberculosis,[1] said: "Of the 63,000,000 people living to-day in the United States, 9,000,000 or more will die of tuberculosis unless something is done to prevent it." Let us do that something—let us do it soon and let us do it well—so that with the dawn of the new century we may hope to see the tuberculosis problem solved, at least in North America; solved by the most humanitarian method, thanks to the combined efforts of physicians, statesmen, philanthropists, health officers of States, provinces, and cities, and the good will of an intelligent people.

955 Madison Avenue.

ATYPICAL MALARIA AS SEEN COMING FROM OUR MILITARY HOSPITALS.

By D. W. WYNKOOP, M.D.,
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My object in bringing a paper on this subject before the medical profession is that for the second time in the history of this country a manifestatation of malaria, which formerly was rare in all our Northern and Western States, to-day is common there. It might well be called the soldiers' malaria of 1898. The severity of this form of disease and its fatality cannot be too strongly borne in mind, and the striking resemblance that exists between it and typhoid fever during certain stages, once seen, will not be forgotten.

I think I may say without fearing contradiction that the number of physicians living in this part of the country is few who have had more than the most fleeting and doubtful knowledge of what is commonly spoken of as Southern fever. This is undoubtedly because clinical experience has been lacking in recent years, and practitioners have felt no impulse to look up and fix in mind a disease which they never expected to be called upon to treat. Whatever original research has been done on the subject of tropical fevers in recent years we owe for the most part to foreigners, and the literature has rarely been translated, it being apparently sufficient for us to know that there were such things as West Indian fever, South American fever, and Mexican fever. To-day the scene has changed and we are confronted with a new type. An atypical form of malarial fever has been brought to our door: we simply are called upon to open our eyes. There are few physicians who have not already been called upon, or shortly will be, to treat the invalids of war who have come back home, bringing with them the plasmodium malariæ of Laveran.

The following description of the algid form of malaria is the summing up and boiling down of the various cases I personally have had under my charge, both in private practice and at the Vanderbilt Clinic. My information has also been gathered from those in charge of our hospital camps; in particular, Camp Wikoff at Montauk Point.

Definition.—An infectious disease characterized by: (*a*) sudden onset with few prodromal symptoms; (*b*) paroxysms of fever with no regular type as far as time is concerned; (*c*) the typical malarial chill usually

[1] New York Medical News, March 7, 1896.

absent; (*d*) gastric disturbance with enteritis; (*e*) a chronic cachexia with anæmia and enlarged spleen; (*f*) a tendency to coma and death in the third or fourth attack; (*g*) skin disturbances; (*h*) the crescentic form of hæmatozoa always found; (*i*) the presence of this form of plasmodium in the blood of those apparently cured of their attack.

Etiology.—One may question the mosquito theory of entrance of the organism into the body, as most of those recently active in the Cuban war are unanimous in saying that they encountered few mosquitoes while on the island.

Few sailors have contracted this algid type of malaria, except those who have had considerable shore duty while in Cuba. It has been practically confined to those in the army who have lived in Cuba, though some have undoubtedly contracted the disease while in camp at Chickamauga. In Alabama and several of our Southern States this form of fever exists, although it is rarely spoken of as malarial fever; they say there that a person dies of a congestive chill.

Duration of Incubation is very uncertain. Many who have gone through the campaign with no sign of the disease have had it develop after their return to the States. This may be accounted for by the fact that it was the practice of most of the soldiers to take from fifteen to thirty grains of quinine a day while in Cuba, but on their return home they ceased taking the drug. It is possible that this amount of quinine, although taken at irregular intervals, was sufficient to keep the disease from manifesting itself, yet not sufficient to eradicate it.

Symptoms.—Mode of onset. The patient generally says that he was feeling perfectly well up to 11 A.M. He went in bathing and returned to mess in an hour. After dinner he began to feel weak and he went to his tent to lie down. By 4 P.M. his head felt dizzy and he had pains in his back and legs. This pain continues with increased severity and his dizziness changes to headache. On his admission to hospital at 8 P.M. it will be found that his temperature is 15° F., his pulse 120, and his respiration 28.

Chill is usually slight and often absent.

Fever.—The rise in temperature is usually a rapid one, ending at 105° F., though in many cases it may go as high as 106° F., and in some a little higher; it ranges between 103° and 106° F. With the end of the rise in temperature we are not to expect a rapid fall. The temperature may stay at this high point or near it for an hour or two, and then slowly fall, taking from ten to twenty hours before it gets near normal. A drenching perspiration accompanies this fall and keeps up even after the temperature is below 99° F. The patient lies in a state of profound prostration. The second day after this we find an afternoon rise in temperature up to about 101° F. This continues with a morning fall for possibly a week or ten days, if no quinine has been administered during this period. The second high rise in temperature should be looked for about this time. It will act in the same way as the first, with the difference of being probably higher with greater prostration. There is no fixed duration of time between the high temperatures. As a rule it is from five to ten days, apparently being influenced by the general condition and resistance of the patient. We have a third high rise and usually a fourth, the intervals becoming shorter and shorter. Death usually follows the fourth rise of temperature.

Under the action of quinine (given hypodermatically by preference when we find hyperpyrexia) we are able to control this temperature and usually prevent any excessive elevation of temperature following the initial attack. It is on the strict and prolonged administration of this drug that success in dealing with cases depends.

Abdominal Symptoms.—The spleen is always found enlarged and more or less sensitive to the touch. In percussing over the abdomen we find tenderness in various parts—in some cases shifting from day to day, in others showing a persistence over the ileum—a point which causes one to think of typhoid fever, especially in consideration of several other symptoms I shall mention later on. The second day after the initial high rise in temperature we have usually gastritis and enteritis as complications. In many cases I have seen the stools almost characteristic of typhoid—the pea-soup variety and frothy. Under the action of quinine the stools become gradually darker and more firm. The patient's tongue is heavily coated but is moist. In many of the cases the kidneys refuse to do proper work, and in one I had suppression of urine for thirty-six hours.

Mental Condition.—After the first rise and fall of temperature the patient is left in a very apathetic and dejected condition. He takes little interest in his surroundings, and sleeps a good deal of the time. He has no desire for food but is always thirsty. With the second rise in temperature he becomes delirious. With the third and fourth he becomes comatose. Many patients who are apparently cured (though in reality not), after having been up and about for a week or two, will be brought into the hospital in a comatose condition, this having come on within less than an hour; and in this condition they may expire. This is by far the most important feature to remember in connection with this atypical form of malaria. The blame lies on the physician who allows his patient to go about before the protozoon is eradicated from the system. Many sudden deaths of soldiers on furlough in our cities can be put down to this score.

Skin Disturbances.—In some cases there has been an erythematous rash of short duration on various portions of the trunk, often on one hip. This rash was followed by itching of the part.

Blood Examination showed the plasmodium malariæ in every case. It differed from that in our ordinary form of malaria by the constant appearance of the crescentic protozoon. The examination of the blood of those who had one or two previous attacks and were at the time of examination feeling perfectly well and doing their ordinary work, showed in several cases the crescentic form of the protozoon. From this we might justly infer that patients having had one or more attacks of this atypical form of malarial fever could not be considered free from the same till examination two months after the last dose of quinine showed their blood free from these organisms.

Concluding Remarks.—One can easily understand how a physician could mistake this form of malaria during certain of its stages for typhoid fever. In fact I am convinced that many are at the present moment undergoing treatment for a supposed typhoid fever, when in reality the above condition exists. With the knowledge of hardship and exposure these men have gone through, and on account of their lowered vitality, we are more prone to make the diagnosis of an irregular typhoid fever than to consider the disease as a possible malaria. An examination of the patient's blood will enable one to arrive at a correct diagnosis.

Palatable Effervescent Quinine.—

℞ Quininæ sulphatis..... 4
Acidi citrici..... 10
Syr. simplicis,
Syr. aurant. cort.....āā 1
Aquæ destill .. ..q.s. ad 20

M. S. Add 10 or more drops to about 50 grams of water in which 0.3 gm. of bicarbonate of sodium has previously been dissolved, and drink while effervescing.

—*Klin.-therap. Wochenschrift*, No. 14, 1898.

LATENT CANCER OF THE STOMACH.*

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The diagnosis of carcinoma of the stomach is at times very difficult. This difficulty is apparent in the one hundred and thirteen cases of carcinoma of the stomach collected by Guinard,[1] in which the diagnosis had been made in only thirty-four cases. These cases, however, were collected from reports in the *Bulletin de la Société Anatomique de Paris*, most of them being remarkable for some anatomical or clinical peculiarity in diagnosis. There are many cases of carcinoma of the stomach in which the cardinal symptoms are absent and yet the diagnosis can be made from other symptoms; there are other cases, however, in which not only are the cardinal symptoms entirely absent, but all other symptoms, if present at all, are so insignificant that they do not lead one even to suspect a carcinoma; such cases are known as latent cancer of the stomach.

There are two varieties of latent cancer: First, those cases in which the gastric symptoms are absent or so insignificant that they are masked by other general symptoms. Thus the carcinoma may be masked by some intercurrent disease, or secondary metastases from a primary gastric carcinoma may hide the primary disease. Secondly, those cases in which there are no symptoms whatever, general or local.

Of the first variety a large number of cases have been reported; of the second the cases are few. The pathological conditions leading to latency are that the growth be located on the anterior or the posterior wall of the stomach in such a position as to involve neither the cardiac nor the pyloric orifice, and that the surface of the tumor do not become ulcerated. When either of these orifices is involved, symptoms of obstruction are at once manifested; if there is marked ulceration, toxic symptoms are produced.

Latent cancers of the stomach have been observed by Cruveilhier and Barth, and cases have been reported from the clinics of Trousseau, Andral, and Guéneau de Mussy. Chesnel[2] has reported six cases; three of these were masked by pregnancy; in another case, in a man who had died suddenly from apoplexy, a cancer of the stomach was discovered at the autopsy; in still another case presenting the clinical symptoms of Bright's disease a similar discovery was made.

Raymond[3] reported a case in which there were no gastric symptoms whatever; there were a sudden and very high elevation of temperature and a general and apparently eczematous eruption. The true condition was revealed at the autopsy. In another case, that of a man aged fifty-six years, the only symptoms were marked cachexia and general œdema. The autopsy revealed a large carcinoma of the walls of the stomach, not involving the orifices.

E. Brissaud[4] relates a case of a man, aged fifty-seven years, who entered the hospital suffering with intense anorexia; there was much emaciation but neither vomiting nor any digestive disturbance. He continued in this condition for twenty-two days, when fever suddenly came on with intense pain in the chest. A purulent pleurisy was discovered; soon the joints became infected and there were other manifestations of pyæmia. The patient died and a large cancer of the lesser curvature of the stomach was discovered. Many of the joints were found filled with pus and the left pleura contained a large quantity of pus.

Brodeur[5] reports a case, that of a man, aged eighty-seven years, with a good antecedent history, who complained of loss of appetite, slight nausea, though not vomiting, and alternating constipation and diarrhœa. Œdema came on and he died. At the autopsy a large encephaloid carcinoma of the stomach was found not involving the orifices, but the greater curvature of the stomach was entirely destroyed and its wall was replaced by the spleen; the left kidney and the liver were also involved. In spite of the extensive ulceration there had never been vomiting or hæmatemesis or pain. This case is remarkable as showing how far the destruction of the stomach may go without producing any marked symptoms.

An interesting case is reported by Goldscheider.[6] A woman, aged sixty-one years, presented symptoms of a compression myelitis, the cause of which could not be determined. At the autopsy a carcinoma of the spinal column was discovered, which was secondary to a carcinoma of the lesser curvature of the stomach. In this case there were no symptoms whatever of gastric disturbance.

Hampeln[7] reports a number of cases. In one the

diagnosis of senile marasmus and arterio-sclerosis was made; in another pulmonary tuberculosis; in still another pernicious anæmia. In all of the cases carcinoma of the lesser curvature was found. In two febrile cases the diagnosis had been malaria and abscess of the liver.

Aron[8] demonstrated before the Medical Association of Berlin a specimen of latent cancer of the stomach. The patient, a man, aged seventy-eight years, had become emaciated and had œdema of the face and extremities, ascites, and fluid in the pleural cavities. Nothing could be determined by examination except the existence of an enlarged liver. At the post-mortem examination a large ulcerated carcinoma was found involving the greater curvature of the stomach.

Leichtenstern[9] reports three cases. In the first there was an acute compression of the spinal cord with paraplegia due to a secondary lesion in the stomach. This had not produced any gastric disturbance. In the second case the diagnosis of acute miliary tuberculosis had been made. There were ascites, abdominal pains, and symptoms of chronic peritonitis. At the autopsy miliary carcinosis of the peritoneum was discovered secondary to a primary scirrhous carcinoma on the posterior wall and greater curvature of

* Read at the annual meeting of the Medical and Chirurgical Faculty of Maryland, April 27, 1898.

the stomach. The third case was one of chronic nephritis. There was hypertrophy but there were no gastric symptoms except occasional vomiting. The trouble was believed to be uræmic. The patient died of uræmia, and at the autopsy besides the cardiac and renal lesions a carcinoma on the lesser curvature of the stomach was discovered.

Similar cases have been reported by Loiseaux,[10] Lafourcade,[11] Bossowski,[12] Gombault,[13] Lefebre,[14] and Bouveret.[15]

The case which we report is of considerable interest. A. W——, colored, aged seventy years, entered Bay View Asylum on March 15, 1897. He was in good general health, with an amount of arterio-sclerosis usual at that age. He at no time complained of feeling ill. On July 3d he died suddenly. The autopsy was held July 4th. The following is taken from the post-mortem report: Height, five feet five inches. No rigor mortis; much emaciation.

Heart. The mitral orifice admitted two and the tricuspid orifice three fingers; weight, two hundred and twenty grams. The anterior segment of the tricuspid valve was slightly thickened along its edge; the pulmonary segment was normal. There were patches of arterio-sclerosis along the base of the aortic segments of the mitral valve and a small calcareous deposit along the posterior segment of the mitral valve at the base. The aortic segments were slightly thickened. The coronary arteries were marked by sclerosis with a large deposit of calcareous material, causing them to be stiff and brittle. The right ventricle was four millimetres in thickness; left ventricle, eleven millimetres; aortic orifice, nine centimetres. There was marked evidence of fibrous myocarditis.

Lungs. The left lung was free from adhesions; weight, four hundred and fifty grams. Hypostatic congestion was noted in the lower lobes. The right lung weighed five hundred and twenty grams, and was congested in the lower lobe.

Kidneys. The left weighed one hundred and forty grams; its capsule was somewhat adherent and it was pale in appearance. The pyramids were well preserved and normal in appearance, the medullary rays could be made out, and the glomeruli were readily visible. There was evidence of parenchymatous changes. The cortex was four millimetres in thickness. The right kidney weighed one hundred grams; its capsule was rather adherent; it was the same in appearance as the left kidney.

The liver weighed twelve hundred grams and was normal in appearance. The left lobe was adherent to the lesser curvature of the stomach.

The most interesting condition was found in the stomach. In the region of the lesser curvature, occupying both anterior and posterior walls, was a tumor mass sixteen by eleven centimetres, varying from one-half centimetre in thickness and projecting into the cavity of the stomach. The tumor was slightly pedunculated, the free edge of the tumor in places overhanging the attached base as much as two centimetres. Nodular projections were scattered over the surface. There were two or three ulcerated areas on the surface of the tumor, from one to two centimetres in diameter. The mass extended into the cardiac orifice but did not involve it. Scattered over the mucosa of the stomach were a dozen small nodules, one centimetre in diameter; some were pedunculated. The mass had extended through the muscular layer of the stomach.

No evidence of metastases could be found in the neighboring lymphatics. On section a considerable mass of fibrous tissue was visible; on pressure a white pulpy material was expressed in the vicinity of the ulcer. The stomach was normal in size and position.

Microscopically the tumor was found to be an adeno-carcinoma. The cylindrical cells lined the ducts very regularly in some places; in others the arrangement was very irregular and many of the cells had undergone necrosis. The ducts were separated by connective tissue, which showed considerable small-cell infiltration.

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PATHOLOGICAL REPORT OF A CASE OF CEREBRO-SPINAL MENINGITIS.[1]

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In the very earliest medical records we find accounts of meningitis and also a little about its gross pathological changes, but no distinction is made between the different varieties of this disease. Indeed, all diseases with symptoms somewhat akin were put down as identical, and their causes were scarcely looked into. To the discovery of the influence of bacteria in the production of disease and to the more careful study of the morbid changes thus produced are due our present increased medical knowledge and the advance of medicine in general. Medical men, in recognizing that "like causes always produce like effects," often seemed to forget that its converse, "like effects are produced by like causes," is not necessarily the case. Thus we can have the same symptom produced by a variety of causes. However, on looking closer we will also generally find some difference in symptoms. On this depends much of the confusion found in medicine, though in recent years a great deal has been done to clear it up. This confusion was especially marked in the cases of meningitis, and indeed it remains to some extent to the present day. Even as early as the beginning of this century, however, one especial class of meningitis was noted and separated from the rest. This came as an epidemic and involved the spinal as well as the cerebral membranes. It did not attack the dura, but involved the other two meningeal layers and also the surface of the brain and cord. This epidemic form is the only one of which we shall have to treat, though a few comparisons may be made with the other forms.

Since the science of bacteriology was founded and it was proved that germs could cause certain diseases, attempts have been made to classify meningitis according to the germs that produce it, and bacteriologists have searched for the germ which produces acute cerebro-spinal meningitis. Different authors have described different bacteria, many varieties being

[1] Read before the Seaboard Medical Society of Virginia and North Carolina on July 14, 1898.

usually found in the meningeal pus. Thus some have said the disease was caused by the ordinary streptococcus pyogenes; others claim that it is caused by the micrococcus lanceolatus pneumoniæ; still others claim that it is caused by the combination of the two. Although both of these germs can undoubtedly produce a meningitis, still they are two of the most common bacteria, and there is absolutely no proof that they are, separately or together, the cause of acute cerebro-spinal fever. Indeed, we know that they produce inflammations of very different forms, the streptococcus producing meningitis following injuries or middle-ear disease and the lanceolatus producing that form which often occurs as a sequel to pneumonia. Each of these is simply a cerebral meningitis, and each runs a different course from that of the cerebro-spinal form, and can in no way be confounded with it.

In 1887 Weichselbaum described a diplococcus which he had found in the meningeal pus of six cases of acute cerebro-spinal fever. He was, however, unable to reproduce the disease in animals. In 1895 Jager verified this discovery. Last April, Councilman read before the Medico-Chirurgical Faculty of Maryland a very interesting paper on this subject, describing this diplococcus, its method of culture, and its effects on lower animals. The author is sorry that he was unable to obtain the original paper, but quotes from the abstract of it in the MEDICAL RECORD. This bacterium is described as being a diplococcus of two hemispheres, separated by an unstained interval, and about the size of an ordinary pyogenic coccus. It stains by the ordinary methods, but is decolorized by the Gram method.

There seems to be absolutely no doubt that this diplococcus is the true cause of cerebro-spinal meningitis, and that any other germs found are mere concomitants, just as we find many cocci along with the tubercle bacilli in the sputum of a phthisical patient, though we should never dream of speaking of them as the primary cause of tuberculosis.

In the epidemic which occurred in Norfolk this spring, specimens from two cases came under the author's observation. In one case there was only some of the meningeal pus, in the other a complete autopsy was made. Both were undoubtedly cases of cerebro-spinal fever.

A short description of what was found in these two cases may be of interest to the members of this society, especially as cases of this comparatively rare disease have probably come under the observation of every member of the society within the last six months. No attempt will be made to give the symptoms in these two cases, but only the post-mortem findings.

Stained specimens of pus from the first case showed many pus cells. There were found monococci of medium size, also diplococci of equal-sized cells with their opposing faces somewhat flattened; these were about the size and shape of gonococci. A few streptococci were found, and in one field were seen two specimens, each inclosed in a pus cell, of three cocci forming a triangle. No micrococci lanceolati were found.

In this specimen the diplococci correspond to the organisms described by Weichselbaum as those causing the disease. It is also well to note that there were no pneumococci found and very few streptococci. It was a case of rapid course, in which the autopsy was made soon after death. The two bacteria last mentioned would probably have been found if sufficient time had elapsed for secondary infection by them to occur.

The second case was more carefully examined, but no clinical history of any worth could be obtained, as the patient was brought into the hospital in a moribund condition. The case was under the care of Dr. Newbill, to whom I am indebted for the specimens

Autopsy.—A young negro man, who had been dead about eighteen hours. The body was well nourished; rigor mortis marked. Arms, thighs, and trunk showed a small papular eruption; legs showed scars. The pericardium contained a small amount of clear fluid. The auricles and ventricles of the heart were distended by an ante-mortem clot. The heart muscle was in good condition; the valves were patent. The pleuræ were normal. Both lungs were congested and œdematous. The liver was enlarged and lighter in color than normal (yellowish). The kidneys were both enlarged; their capsules were slightly adherent; the markings were indistinct, especially in the right organ. They were paler than usual, but could hardly be designated as large white kidneys. The spleen was enlarged and greatly congested, being quite dark in color. In its substance were six or eight masses of grayish caseous material, surrounded by a capsule of fibrous tissue. The largest of these was three-fourths of an inch in diameter and involved the capsule, it being plainly visible from the outside. The stomach and intestines showed no change.

Brain. Beneath the arachnoid, both at the base and over the upper surface of the brain, as well as around the cord, was found thick pus. This pus seemed to follow the sulci and blood-vessels, but was especially marked at the base. The meningeal vessels were greatly engorged. The ventricles were filled with a clear serum (no pus); their vessels were engorged. The brain tissue showed post-mortem changes.

A blood-serum tube was inoculated with the meningeal pus. Pus and blood from the meninges were collected in sterilized tubes. The spleen and parts of the kidney and liver were taken. Bouillon was inoculated from meningeal pus and from the spleen. Rabbits were inoculated by injecting one-half of a cubic centimetre of the bouillon cultures into the muscles of the back.

One of the rabbits inoculated from a culture made from the meningeal pus had a large abscess and also some pneumonia, but no meningitis. The other suffered no ill effects.

The spleen and the blood-serum tube showed only saprophytic bacteria. The meningeal pus showed a variety of bacteria—staphylococci, streptococci in short chains, saprophytic bacilli, and several varieties of diplococci. One of these was undoubtedly the micrococcus lanceolatus: another, the one most commonly found, was made up of two cocci with their opposing faces somewhat flattened. These greatly resembled the gonococci. At times they seemed to be almost monococci, being separated by only a faint unstained line. Then there were diplococci, made up of two equal spheres, which were about the same size as the one last mentioned. Whether these merely represent stages of development of one organism, or are two distinct organisms, is a difficult matter to decide. These diplococci were stained by the ordinary methods, but were decolorized by Gram's method. They were, according to my way of thinking, undoubtedly the organisms described by Weichselbaum.

A microscopical examination of the kidney showed the epithelium of the canaliculi to be fatty, partly without nuclei, and with the cell outlines quite indistinct. There were also hemorrhages into the canaliculi in various places; the glomeruli were in pretty good condition, though somewhat shrunken. The spleen was filled with blood, and contained a large amount of pigment. In places were caseous masses surrounded by well-formed connective-tissue walls. These did not contain tubercle bacilli, nor did they show any of the other appearances of tubercles. No

other bacteria were found in the sections of spleen tissue. The liver also contained much free blood and pigment. In parts there was a deposit of amyloid material, though this had not progressed far. There were many leucocytes between the liver cells and around the gall ducts. The liver cells themselves did not stain well, but showed no especial changes. No gummata were found in the liver.

Anatomical Diagnosis.—Acute cerebro-spinal meningitis, acute nephritis, gummata of the spleen, beginning amyloid degeneration of the liver, congestion of the lungs.

Thus in both cases the diplococcus of Weichselbaum was found. In the first case no micrococci lanceolati and only a very few streptococci were found. In the second case (a case which in all probability had lasted much longer than the first, and in which the autopsy was performed at a much longer time after death had taken place) these other germs had had a much better opportunity of developing along with the true organisms of the disease.

It is generally supposed that the organism causing cerebro-spinal meningitis enters through the nose and the cribriform plate of the ethmoid. Both the streptococcus and the micrococcus lanceolatus are often found in the healthy mouth and nose, and could thus easily pass into the diseased meninges, which in health would be able to resist a single example of these germs.

Acute inflammation of the kidneys has been reported in several cases of this disease, though it does not seem to be a very common complication. It is interesting to note that before death both albumin and casts were found in the urine.

The changes in the spleen and liver are most interesting, though here we find a complication. The caseous masses found in the spleen were to my mind of syphilitic origin. They were not tuberculous, being quite different in structure and showing no tubercle bacilli. This diagnosis was further supported by the scars found on the patient's legs. The eruption on the body may have been a syphilide, or may have been the eruption so often occurring in cerebro-spinal fever. As the subject was very black, the differential diagnosis called for a more skilled dermatologist than the author can claim to be.

In other parts of the spleen, and indeed in all parts outside of the gummata and throughout the liver, were found blood and pigment (probably blood pigment) in large quantities. This was probably the result of the high fever, and possibly of the specific action of the disease.

Whether the small amyloid deposit in the liver was a sequence of the syphilis or of the suppuration in the meninges cannot be positively stated. Though we know that amyloid degeneration is at times found with syphilis, still it is even more often caused by prolonged suppuration. One theory of the deposit of amyloid material is that it is carried by the leucocytes from the point of suppuration, and deposited by them in the different organs. One author claims to have discovered it in the bodies of leucocytes and pus cells. Now if this be the case, why may not the amyloid material have been brought to the liver from the meningeal pus? Though it is impossible to prove that the amyloid degeneration is a result of the cerebral suppuration, it is still a very interesting find.

The large amount of blood and blood pigment in the spleen and liver, together with the renal hemorrhages and the large ante-mortem heart clots, shows a grave change in the blood due to a profound septic intoxication. Indeed, in the so-called fulminating form of the disease, when the poisoning is so great that the patient dies before there is time for the formation of meningeal pus, this change in the blood with its consequent hemorrhages is the only pathological change visible. Whether the diplococcus of Weichselbaum is in this form found only in the meninges or is generally disseminated throughout the body, I have not seen reported. In ordinary cases it is found only in the meninges, the other effects being entirely produced by its toxins, as is the case with diphtheria. It is probable that it is found only in the meninges in fulminating cases also. Thus the disease would seem to take its place as a parallel to the fulminating form of Asiatic cholera, in which there are almost no pathological changes found, and in which the cholera spirilla do not pass out of the intestine, though they cause death by rapid poisoning through their toxins.

TREATMENT OF SOME OF THE DISEASES OF CHILDREN TWO HUNDRED YEARS AGO.[1]

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THE present inhabitants of our modern cities have become so accustomed to the benefits conferred upon them by the recent discoveries in medical science that it is very difficult for them even to imagine the vast contrast in the treatment of disease two hundred years ago, when compared with our treatment at the present time.

It should be remembered that two hundred years ago the great discovery of vaccination by Dr. Jenner in 1796 was unknown, and small-pox still continued to slay its uncounted millions. It is quite unnecessary and would be out of place in this paper to advocate vaccination, and we will only say that vaccination is admitted by all medical authorities to be the greatest blessing that the science of medicine has ever given to mankind.

The first authority we will quote on children's diseases will be Dr. Thomas Willis, an eminent physician of England. He was born in 1621 and died in 1674. He wrote several medical works, one on the anatomy of the brain and one on convulsive diseases, including epilepsy and scurvy. From the latter, page 143, we make the following quotation concerning the treatment of epilepsy:

"A Man in this Neighborhood, had all his Children dead of Convulsions, within three months after they were born. At length, to prevent the same Fate in a Son of his that was new-born, he thought proper to try the Power of Medicine. I was called to him a few days after the Birth, and ordered an Issue in the first Place to be made in his Neck, and that two Ounces of Blood should be drawn next Day at the Neck, by the Application of Leeches. I advised besides, that for three Days before each Change of the Moon, and again before the Full, about five Grains of the following Powder should be given him Morning and Evening in a Spoonful of the Julap.

"Take prepared Human Skull, the Root of Male-Peony, of each one Drachm. Pearls in Powder, half a Drachm. Mix them all together, and make a very fine Powder.

"Take of Black Cherry-Water, three Ounces. The Antepileptick Water of Langius, an Ounce. Syrup of the Flowers of Male-Peony, six Drachms.

"I likewise ordered the Nurse to take a Draught of Whey, in which the Roots and Seeds of Male-Peony, and the Leaves of Lilly of the Valley had been boiled, twice every Day at the same Hours.

"The Child continued well about two Months, and then began to be troubled with Convulsive Disorders;

[1] Read before a joint meeting of the Medical and Anthropological Societies, Washington, D. C., May 14, 1898.

upon which Account the same Medicines were again repeated in larger Doses, both to the Child and Nurse. Blisters were applied behind the Ears, and he was again bleeded at the Jugulars with Leeches. By these Means he got well again within two or three Days; and about four or five Months afterward, when the same Disorder returned, he was cured by using the above Medicines. After he was seven Years old, the Convulsions entirely left him; but about the lower part of the Back Bone, an indolent Tumor arose. This Tumor occasioned a Distortion of the Vertebræ, which was succeeded by a Weakness of the Limbs, and at length a Palsey."

Extraordinary and even barbarous as the above treatment seems to us, yet in order to show that it was the usual treatment for epilepsy in that day we will now give a quotation from the book of Dr. Walter Harris on children's diseases, who was physician in ordinary to King William the Third of England. He was born in England in 1651 and died in 1725. In his article on epilepsy in the above-mentioned book, page 148, he says:

"A girl eleven years old of a sanguine constitution, and troubled with very long and violent Epileptic Paroxysms, desired my advice the Eighteenth of December, 1701. For six months she had suffered two severe Paroxysms each day. The Paroxysm was in this manner: She fell first down as if dead upon the floor or bed; whence this disease is called the Falling Sickness: and after remaining motionless for a little while, she tossed her limbs here and there with great force and violence, attempting to beat herself with her hands. She frequently bended her head downward with strong Convulsions, and flung it backward with such force, as if she designed to dash the hind-part of her Skull to pieces."

After giving this vivid and accurate picture of epilepsy he says: "I prescribed for her the following powders: Take of prepared Earth Worms One Ounce. Human Skull prepared Two Scruples (forty grains). Mix them and divide into twelve powders, one to be taken twice a day in a spoonful of Cephalic Julap."

The next authority quoted will be Dr. Richard Wiseman, who lived about two hundred years ago, and who was the physician to King Charles the Second of England. He wrote a number of treatises on various medical and surgical subjects, and from his treatise, page 241, on the king's evil or scrofula, the following paragraph is taken. After prescribing various remedies he says:

"But where that does not agree we prescribe distilled milk of which this sort may serve as an example. Take of best Sarsaparilla one pound. Shavings of Hartshorn six ounces. Leaves of Agrimony and of both kinds of Fluelline, of each three handfuls. White and Red Saunders, of each two drachms. English Liquorice a pound. Garden Snails one hundred. Earth Worms one pound. New Cows Milk two gallons.

"Distill them according to art and to three pounds or pints of the distilled liquor add two ounces of prepared Crabs Eyes. Let him take of this to the quantity of four ounces at a time adding to each dose some quantity of Cinnamon Water."

Dr. Wiseman was also, it is said, a believer in the efficacy of the king's royal touch as a cure for scrofula, but he does not mention it among the remedies in the article we have quoted.

But let us return for a moment to Dr. Harris' book on diseases of children, and see his treatment of fever, on page 44.

"To a child of a year old labouring under a fever or tormented with gripes I commonly prescribe in the following manner: Take Compound Powder of Crabs Claws, Prepared Pearls, of each one drachm (sixty grains). Mix them and make a powder to be divided into six equal parts. The child must take one of these immediately and let it be repeated (if the case require two hours thereafter and then every fourth hour)."

Dr. Harris could not have prescribed such remedies as these for any except rich patients, and we know now that crabs' eyes and prepared pearls are chemically nothing but carbonate of lime or chalk. The same quantity of prepared chalk given to the patient would have answered every medicinal purpose equally as well as these costly powders.

Thomas Sydenham, who was born in England in 1628 and died in 1689, was one of the most famous physicians of his time. Advocating as he did in the treatment of fevers and eruptive diseases, such as measles, small-pox, etc., of children, the use of cool air and other cooling methods of treatment, he was far ahead of his time. In his monograph on measles he gives a very good description of the disease, and a good deal of his treatment would be deemed judicious at the present day. However, toward the end of his article he says, page 175:

"If after the measles are gone off, a Fever, difficulty of breathing, and other symptoms that indicate a Periphneumony (Pneumonia) to succeed, a good quantity of blood must be taken from the Arm, and if there be occasion, the bleeding must be once or twice repeated at proper intervals."

He also says, farther on in the same article: "The Diarrhœa which comes after the Measles is cured by bleeding."

In his article on small-pox, page 167, he says: "If on the eleventh day of the Disease, or on any day following it, the Suppurative Fever comes on, and rises to such a height, with sickness, restlessness, etc., that it is not to be subdued by repeated Paregoricks, and the Patient seems to be in imminent danger. In such a case you may let blood (bleed) to a considerable quantity, and repeat the bleeding twice or thrice on following days, if there be a necessity for it, but not otherwise."

We can imagine the sensation that would be produced by any physician in our day, attempting to bleed a child suffering from either measles or small-pox.

Dr. Burton, who was contemporary with Dr. Harris, wrote an interesting monograph on chin cough, or whooping-cough, as it is called in our day. After giving a fair description of the disease, on page 191 he says:

"When I am called, if the child be in danger of being convulsed, in the first place, in order to gain time I let some blood, which I would not otherwise do, because it is contrary to the second indication, and those children who were bled or much purged, were always longer in recovering, than those who had not been bled at all."

This last remark, by the way, seems to manifest that Dr. Burton had good powers of observation. On page 193, he says:

"I ordered a Scruple (twenty grains) of Contharides (Spanish Flies) and as much Camphire [camphor] well rubbed together, to be mixed with three drachms of Extract of Bark (one hundred and eighty grains), of which composition I gave the Children eight or nine grains every third or fourth hour in a spoonful of some simple Water or Julap, in which I had dissolved some balsam capaivy."

The children of the people who lived two hundred years ago must have been under better discipline than ours of the present day, or they never could have been induced to swallow such nauseous medicines. Finally, this brief and imperfect survey of the treatment of some of the diseases of children two hundred years ago serves to demonstrate very forcibly the fact that our children have fallen upon happier times in being born in an age of enlightenment and progress in medi-

cal science. We ought not to forget, however, that we owe a vast deal to our forefathers in medicine. They were without all the instruments of precision we possess. They were destitute of all the microscopes, stethoscopes, and thermometers, that aid us so largely in detecting and recording the diseases of internal organs. Without these aids, by their persevering labors the vast accretions of knowledge were accumulated, on which has been erected the glorious fabric of modern progressive medicine.

A NEW METHOD OF APPYLING A PLASTER-OF-PARIS SPLINT TO AN ANKYLOSED KNEE-JOINT OR TO A FRACTURED LIMB.

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Almost every practitioner no doubt will have observed the difficulty in applying a plaster-of-Paris splint to an ankylosed joint when the hamstring tendons are tensely contracted and maintain flexion of the limb, which can be reduced only by applying considerable force. To overcome this difficulty the following simple device will be found effectual: The patient, having been anæsthetized, is drawn down until the buttocks reach the edge of the table, and the heel of the affected limb is placed on pillows on an adjoining table. This leaves a space between the two tables in which the operator can work. After the limb has been extended by manipulation, it is kept in a position of complete extension by the following method: A strip of cheesecloth or common domestic cloth, one foot wide and two feet long, is cut or torn into a many-tailed bandage—four, six, eight, or ten tails, as may be required. The tails are cut or torn to within two inches of the centre, the long way of the bandage. The joint having been well padded with cotton batting, weights such as sadirons are tied to each strand, when the bandage with the weights attached is put astride the joint; sufficient weight should be applied fully to extend the limb. (In the last case in which I applied this splint it took eight sadirons to keep the limb fully extended.)

I apply the plaster-of-Paris splint in the following manner: Commencing low down on the foot or leg, as may be required, as when there is tense contraction in the hamstring tendons, I bandage from the foot up the limb. When I come to the many-tailed bandage and weights I pass the plaster-of-Paris bandage in and between the strands and proceed on up the thigh the required distance. As the bandaging progresses, the strands of the many-tailed bandage at the knee-joint are pressed by the plaster-of-Paris bandage into small round cords. After sufficient plaster-of-Paris bandage has been applied, the limb is allowed to rest in the fully extended position with the heel on the pillows until the plaster has set, which is usually in twenty or thirty minutes. The tails sustaining the weights are then cut off close to the now firmly hardened plaster splint, when it will be found that the ends have retracted within the plaster cast, leaving small holes corresponding to the number of strands. These holes are useful in ventilating the joint, and do not impair the strength of the cast at all. In the course of one, two, or three weeks the splint can be taken off, when at that time the tendons are usually sufficiently stretched. If the tendons are not found sufficiently stretched, another splint can of course be applied in the same manner.

By applying plaster-of-Paris splints in this manner I have been able to reduce and keep in extension ankylosed joints when I could not have done so by any other means. This method is preferable to performing tenotomy, as recovery is much more rapid and complete.

The same principle being applied to the reduction of simple or compound fractures of the thigh, leg, arm, or forearm, when there is sagging or other angular deformity which is difficult to correct, the fractured member can be suspended in a sling or a swing made with the many-tailed bandage, the tails being torn to within one inch of the centre. The reduction of the deformity is effected and maintained by an assistant, who makes traction on the fractured limb. When the plaster-of-Paris bandage is applied in the same manner as before described, the strands of the many-tailed bandage sustaining the fractured limb will be found to have turned into round cords. The strands, having been cut away close to the cast, will recede within the same, and as the many-tailed bandage is outside of the dressing enveloping the limb it does not cause pressure. I have also used this method of applying the plaster-of-Paris splint after Phelps' operation for club-foot. By having assistants make traction in opposite directions with two bandages I have thus secured the foot in more complete eversion than by any other means.

I have also utilized this principle in the application of the plaster-of-Paris jacket. My method is to tack cheese or domestic cloth over the open end of a common dry-goods box, the box being long enough to suspend the patient his entire length on the cloth. Laying the patient on the cloth I find where the jacket is to come, and after I have padded all projecting points I cut the cloth on the top of the box into strips an inch and one-half or two inches wide, taking out every other strip. This leaves enough strands to sustain the weight of the body and makes the application of the plaster-of-Paris bandage much more easy. When all is ready for the application of the plaster-of-Paris dressing, two assistants, one holding the head, the other the feet of the patient, make traction in opposite directions and thus overcome the deformity to the required degree. The plaster-of-Paris bandage is applied from below upward, and the pressure of the same as before turns the sustaining strands into rounded cords. If the weight of the patient is so great that the strands do not readily round into cords, they can be twisted by applying a forceps to the middle of the same. As the suspension bandage is entirely outside of the protective dressing, this does not inconvenience the patient at all; and when the plaster-of-Paris jacket is cut open in order to apply the lacing apparatus any prominent ends of the bandage that might cause undue pressure can be cut off.

I also employ this same principle, of bandaging between the tails of counter bandages, in applying plaster splints and in making overcorrection after osteotomy for knockknee and bowlegs. The advantage of this method of applying plaster-of-Paris dressings will be better appreciated and the method will be generally used after it has once been tried.

Prophylaxis and Treatment of Ophthalmia Neonatorum.—Of the 300,000 blind in Europe, 30,000, or 10 per cent., owe their infirmity to ophthalmia neonatorum. This is so alarming that it behooves us to seek some remedy. According to M. Galezowski (*Revue d'Hyg. et de Pol. Sanit.*, April, 1898) three conditions are indispensable in order to effect a cure in this disease: (1) Cauterization of the conjunctiva twice daily. (2) Continuation of the treatment from the beginning to the end of the disease. (3) Rigorous observation of the laws of antisepsis. In 1,490 cases of purulent ophthalmia in the newborn, Galezowski has found that 389 patients have lost their sight.

Progress of Medical Science.

The Treatment of Infected Hair Follicles. — Dr. Eddowes read a paper on the above subject at the meeting of the British Medical Association, and said that "the hair follicles might be regarded as elastic tubes guarded by funnel-shaped valves, composed of prolongations of the horny layer of the cuticle into their mouths." He had obtained very satisfactory results from the application of a strong solution of phenol when the follicles were inflamed, *i.e.*, in conditions of the follicles characterized by redness at their orifices and a slight tendency to bulge in the form of a minute vesicle, though it was useless for superficial or slack vesicles or for deep infections, such as occurred in indurated acne. It was obvious that the larger the amount of fluid contained in the follicle the greater would be the interval between the living tissue and the hair forming the plug, and the better would be the opportunity for diffusion to take place. Following this principle in practice, Dr. Eddowes attempted in the first place to excite rapid effusion by the application of various liniments and ointments, and before the vesicles had a chance of giving way and thereby releasing the back pressure into the follicle he applied phenol or some other powerful antiseptic.

Surgical Treatment of Tuberculosis of the Bladder.—Dr. E. Desnos says that although tuberculosis of the urinary passages often remains localized to the organ originally attacked, operative proceedings, such as curetting or total resection of the vesical mucous membrane, were generally followed by no good result, and were sometimes followed by generalization of the infection throughout the urinary apparatus. Nevertheless, painful forms of tuberculous cystitis can often be dealt with satisfactorily by suprapubic cystotomy, but in these circumstances care must be taken to leave the vesical mucous membrane untouched, whatever lesions it may present. The operator must be content with draining the bladder. If the patient is willing to put up with the inconvenience of a fistula for a long time—at least a year—not only does the pain diminish or cease altogether but nearly all the lesions undergo a temporary arrest, owing to the permanent relief of the congestion of the bladder walls and the abolition of micturition through the natural passage. When operation of any kind is contraindicated, recourse must be had to instillations of sublimate and injections of guaiacolated oil and to general treatment.—*British Medical Journal.*

Heart Complications in Diphtheria.—Hibbard finds that less than one-half of the patients in whom the pulse rate exceeds 100 recover. The pulse rate and the mortality appear to be very much in a direct ratio to one another, and recovery is comparatively rare with rates above 150. Extreme slowness of the pulse is less significant, but in children bradycardia does at times presage evil. Variations of rhythm and volume occur in about ten per cent. of cases, and are a useful premonition of cardiac complications. A systolic murmur at the apex of the heart is heard in about one case in ten. This is commonly due to mitral insufficiency caused by dilatation, but in rare instances to an endocarditis of diphtheritic origin. The murmur is not in itself a serious matter, but if an increasing area of cardiac dulness and accentuation of the pulmonary sound indicate dilated ventricle, the outlook is less favorable.—*Boston Medical and Surgical Journal.*

Carbolic-Acid Poisoning.—Toxic effects have occasionally resulted from the use of carbolic acid as an antiseptic. At a recent meeting of the Société Médicale des Hôpitaux, reported in *The Lancet*, Dr. J. Comby related the following case: A child, aged five years, was treated for otorrhœa with carbolic acid. Injections of one and one-half per cent. were employed six times a day. After the last injection in the evening five drops of glyceride of carbolic acid (five per cent.) were instilled, and in addition the ear was bathed with the first solution. This treatment was scrupulously carried out for ten days, when the otorrhœa stopped; but two days afterward the child had persistent hæmaturia and headache. Careful physical examination revealed no other signs of disease and the general condition was satisfactory. Symptoms of acute nephritis, pyrexia, œdema, etc., were absent; there was no evidence of tuberculosis and the microscope showed that the case was not one of hæmoglobinuria. Dr. Comby therefore concluded that the hæmaturia was due to poisoning by the carbolic acid, which had been so sedulously used. The hæmaturia ceased in about a fortnight. Carbolic acid should be carefully used in the case of children, as they are especially susceptible to it.

Technical Details in Asepsis.—At a recent meeting of the Berlin Medical Society a discussion took place with regard to a paper read by Schäffer on asepsis. Dührssen said that the principle of asepsis was so simple that it could be appreciated by every one. The practical realization of this principle, however, was by no means simple, and required the careful consideration of each individual surgeon. He employs an aseptic operating-coat, which he removes from the sterilizing-chamber, having previously washed his hands with a nail brush. The lid of the chamber is raised by an assistant, who is not allowed to touch the coat. The process of buttoning is accomplished by a second assistant. Lister's theory of the infection of wounds by the access of air was considered to have a wider significance than infection by contact. In this connection the author stated that it was most important to see that all bleeding had stopped before the wound was closed, as blood accumulations formed a most favorable medium for the growth of bacteria. In peritoneal operations this was most important. Cases which did badly usually showed post-mortem signs of blood extravasations in those parts which had been subject to operative treatment. Asepsis (according to Schäffer and Dührssen) at the time of operation would not insure a good result unless all bleeding points had been secured before the wound was closed.—*British Medical Journal.*

Tuberculous Laryngitis.—Dr. Ellet Orrin Sisson (*Medical News*, April 9th) concludes an article on the above subject as follows: "To the microscopic investigations and to them alone is due the present thorough knowledge of its pathology. No one line of treatment can be laid down at the present time. There is too great a tendency on the part of the medical profession at large to place this disease in the list of incurable affections and to use only palliative treatment, and not take the interest that it should in the reports from the few untiring investigators who, in the face of apparently insurmountable obstacles, are endeavoring to find some cure for this dread malady. When we stop and think of the progress that has been and is being made in the treatment of other diseases as destructive in their nature as this, and which were less than ten years ago classed with it as incurable, we are justified in predicting that the time will come, and that it is not far distant, when laryngeal tuberculosis will take its place among them, and be classed as a curable disease."

The Effect of Alkalies on the Gastric Secretion.—Hayem states that alkalies given for some time and in sufficient doses, so far from curing hypersecretion of hydrochloric acid, are the most powerful agents in producing it. This is especially true of bicarbonate of sodium. They produce this effect after being absorbed and during their excretion. That it is not due to their local action on the gastric mucosa is proved by the use of mineral waters, which aid the absorption of alkalies and so produce hyperchlorhydria more readily than alkalies alone. The above is true only if the gastric glands are numerous and active. If the mucosa is atrophied, instead of raising the digestive power of the gastric juice with a tendency toward hyperchlorhydria, alkalies depress and aggravate the hypopepsia.—*British Medical Journal.*

Renal Calculus: the Difficulties and Errors in Diagnosis in their Relation to Exploration of the Kidney; Unsuspected, Quiescent, and Migratory Calculi.—Dr. Henry Morris (the Hunterian lectures on "The Surgery of the Kidney," *British Medical Journal*, April 9th) says the conclusions at which he has arrived are the following: (1) That the aim of the surgical treatment of renal calculus should be to extend the application of nephrolithotomy, and thereby restrict the necessity of nephrotomy and nephrectomy. (2) That more frequently than not the failure to find a stone is not in reality a failure of treatment, because there are so many curable morbid conditions which mimic renal calculus, and which are discoverable only by exploration. (3) That the theory that a stone in one kidney, whether that kidney is itself painful or not, reflects or transmits pain to the opposite kidney is quite unproven; that it is a dangerous theory, calculated to lead to very erroneous practice; and that the surgical principle with regard to exploratory operations should be that with pain, paroxysmal or continuous, on one side only, the kidney on the painful side should be explored. (4) That nephrectomy for calculous conditions is not often called for, and should be done only in exceptional cases. Nephrotomy for calculous pyonephrosis is the proper operation, at any rate as a primary operation, because of the frequency of double calculous disease. Experience has shown that kidneys from which stones weighing eight hundred and thirty grains and thirteen hundred grains have been removed are functionally sufficient to maintain life during the blocking of the ureter or suspended action of the kidney of the opposite side. (5) That nephrectomy while the opposite organ is occupied by calculus is fraught with the greatest danger to life; whereas nephrectomy after the opposite kidney has been freed of stone will probably be followed by recovery from the operation and possibly by very good health for many years afterward. (6) That when renal calculus causes reflected or transferred vesical or ovarian pain, the removal of the calculus will be followed by complete cure of the bladder or ovarian symptoms. (7) That in some cases renal-calculus conditions are attended by very remarkable nervous symptoms, sometimes with, sometimes without, high temperature, and that information as to the cause of these symptoms is needed. (8) That unsuspected renal calculi are a source of very real danger to their possessors; and when, whether by accident or by the systematic examination of the urine, we have cause to suspect the presence of a calculus, we should recommend its immediate removal, regardless of the fact that it is not causing renal or transferred pain. (9) That quiescent calculus is as dangerous to the individual as unsuspected calculus, and ought to be removed by operation. (10) That the hitherto accepted teaching, that a renal calculus, if causing only mild symptoms or attacks of severe colic of only recent occurrence, should be treated on the expectant plan, ought to be discarded as unsound in theory and dangerous in practice. (11) That the same principle should be applied to renal calculus which has long been the rule in regard to vesical calculus—namely, when suspected it should be searched for, when known to exist removed, without waiting in the hope that it may become encysted or spontaneously expelled. (12) That the very low mortality of nephrolithotomy puts this operation upon the same footing for renal calculus as lithotrity in the most experienced hands for vesical calculus.

The Surgical Treatment of Pyloric Obstruction, with an Account of Twenty Cases, and of a New Way of Performing Gastro-Enterostomy.—Dr. F. T. Paul (*British Medical Journal*, June 4th) remarks that stenosis of the pyloric end of the stomach is due to (1) congenital insufficiency; (2) obstruction from the external pressure of tumors, bands, etc.; (3) reflex spasm; (4) fibrous contracture; (5) cancerous and other growths. Several operations have been suggested for the cure of fibrous stricture, including pylorectomy, divulsion, pyloroplasty, and gastro-enterostomy. The conclusions at which he arrived regarding the four operations, of which twenty cases constituted his personal experience, were the following: Divulsion should be reserved for very exceptional cases, other and better methods having almost entirely excluded it. Of the other three operations pylorectomy is likely to be the best method of giving relief in a small percentage of cases, and though nothing can compete with pyloroplasty when circumstances are favorable to its employment, there always remains a considerable number of cases in which gastro-enterostomy alone is available. This operation must remain the most important one, because it is always practicable when the others prove impossible. Attention should be turned therefore to improving it. Dr. Paul proposed another plan, as follows: The stomach and bowels having been exposed, a longitudinal incision is made in the intestine—about two inches—through the peritoneal and muscular coats only. These are reflected with a small, curved, blunt dissector over an oval area, having a diameter of about one inch in the centre. The exposed submucosa is then rubbed about half a dozen times with a stick of zinc chloride, being well dried between each application, when it assumes a gray, dead look. The bowel is now wrapped in a piece of moist absorbent wool and laid to one side, while the stomach is dealt with in an almost similar manner. In the preparation of the stomach for the anastomosis, instead of a linear incision being made, an oval patch of musculo-peritoneal coat is excised; the muscular coat being so much thicker in this organ, it is rather in the way if only reflected, and what is of more importance is that the loss of substance helps to prevent subsequent contraction of the opening. Both the wounds having been duly cauterized, they are brought together, and a continuous suture of the finest green gut or silk is run around the edges, not, of course, penetrating the mucous membrane, but picking up as far as possible the tough submucous coat. Finally, a few Lembert or Halsted sutures are generally desirable, especially in anterior gastro-enterostomy. The mucous and submucous coats soon slough and disappear, and good firm union takes place. The features of this operation, which it is hoped may be reckoned as advantages, are: (1) The effect is one of pure traumatism. The viscera not being opened, all risk from such sources is avoided. (2) No foreign body is used. (3) The time occupied is less than for a suture operation, though more than for Murphy's. (4) The anastomosis resulting from loss of tissue should be more durable than by the majority of methods.

Appendicitis.—Dr. Spencer Graves (*International Journal of Surgery*, May) says: "I prefer, when seeing a patient in the beginning of an attack presenting the ordinary symptoms, to treat it medicinally for a varying length of time, for the following reasons: (1) There are cases, a small percentage, that may be relieved in this way, the appendix returning to its normal condition. (2) In the interstitial form or in recurrent appendicitis I would prefer to operate between the attacks. (3) The fulminating form being of such rare occurrence and often manifesting symptoms by which it may be recognized before it is too late, and being so often fatal, whether medicinally or surgically treated, I am not influenced to treat all cases as though they were of this variety. (4) The patient is usually in a better condition for the operation after the acute symptoms have subsided. The toxæmia seems greater in the majority of cases during the first twenty-four or forty-eight hours, and the patient appears to suffer more from shock during this period. I believe chloroform or ether anæsthesia is more dangerous when the toxicity is great, and that these agents have some inhibitory action on the body cells, the serum of the blood, or the phagocytes. This deleterious action is especially objectionable at a time when nature's best efforts are required to combat the morbid phenomena. (5) The benefits of this delay, as it seems to me, with the adoption of correct medicinal treatment, are the increased flow of serum to the seat of inflammation and the formation of adhesions, in some cases, which shut off the general peritoneal cavity, and the lesser risk of auto-intoxication. I believe that the peritoneum, during operative procedure, is more likely to be infected before this immunizing or protective process has supervened. (6) The advantage hoped for when we would operate before the occurrence of perforation is quite often not realized in perforative appendicitis. In my experience, perforation takes place sooner than is ordinarily supposed."

The Action of the Vaginal Plug in Accidental Hemorrhage.—Dr. E. Hastings Tweedy (*British Medical Journal*, June 4th) says that accidental hemorrhage is one of the few complications in midwifery, concerning which a marked disagreement as regards treatment exists. To accomplish this little operation in a satisfactory manner many pieces of sterilized cotton wool are required, each the size of a small closed fist, which should be placed in a weak antiseptic solution. The patient is then brought to the edge of the bed and put on her left side. When the vagina and vulva have been asepticized and the bladder has been emptied, the pieces of cotton wool, from which the superfluous fluid has been squeezed, are taken, one by one, compressed into a small compass, and inserted without the aid of a speculum in such a manner that the entire cervix is surrounded by pledgets before the os is covered. Each piece is packed as tightly as possible, and when the vagina is filled to the utmost capacity down to the urethra a diaper is placed between the thighs, and the application of a tight abdominal binder completes the operation. He arrived at the following conclusions: (1) The vaginal tampon, when properly applied, is the most suitable treatment we possess for the worst forms of accidental hemorrhage. (2) It may be relied upon as sufficient in the majority of cases not amenable to other treatment. (3) It controls the circulation in the uterine arteries, acting in much the same manner as does a tourniquet. (4) It dilates the cervix partly by exercising a peripheral force on that structure, and partly by exciting uterine contractions. (5) These latter are induced not merely as a consequence of cervical dilatation but are chiefly attributable to the power the tampon possesses in bringing about an accumulation of carbonic gas in the uterus.

Antipyrin Exanthemata.—Dr. Lesser before the Dermatological Society of Berlin (*Medical Press and Circular*, April 6th) said that the antipyrin exanthemata were among the most extended of those due to drugs. The reason was that antipyrin was not only prescribed by the physician but was procured and used extensively by the laity. The characteristics were: (1) The appearance of only a few spots, the points of predilection being around the body openings; further, points liable to pressure; and lastly the effects upon the extremities, hands, and toes. (2) Their strong pigmentation and their long persistence. (3) Their occasional chilblain-like infiltration. (4) The outbreaks in the same spots every time antipyrin was taken. In addition to these, other parts might be attacked. There were violent burning and itching, which came on rapidly after the use of the drug.

Treatment of Inoperable Sarcoma by Coley's Fluid.—Dr. Mansell Moullin in a paper read before the Harveian Society (*British Medical Journal*, February 19th) offers the following conclusions, some of which may later require modification: (1) It could not be denied that there was a considerable number of cases in which sarcomata that had been given up as hopeless, often after repeated operations, had absolutely and entirely disappeared under this method of treatment. There was no other treatment, except infection with the streptococcus of erysipelas itself, of which this could be said. (2) Some of these cases had remained free from recurrence for upward of three years, the period which, in the case of the excision of the breast for scirrhus, was regarded by many operators as justifying the use of the term "cured." (3) Several of the cases in which sarcomata had disappeared after an attack of erysipelas had remained free for seven years and upward. (4) The fact that there might be a very few cases recorded in which sarcomata had disappeared, either spontaneously or after such diseases as acute specific fevers, had nothing to do with these conclusions. The statement that sarcomata did occasionally disappear was repeated with great regularity, but well-authenticated cases verified in the way in which Coley's had been verified were difficult to find. (5) These conclusions were not in any way invalidated by the fact that injections of the toxins were sometimes followed by the disappearance of other growths, such as lupus, keloid, syphilitic deposits, carcinomata, etc. It might make the disappearance of sarcomata more difficult to understand, but it in no way disproved it. (6) The proportion of cases of sarcomata that were cured by the injections of mixed toxins depended, among other things, upon the histological character of the growths. Spindle-celled sarcomata were by far the most successfully treated. This suggested the conclusion that the mixed toxins had a selective action, even if it was not specific. (7) The disappearance of sarcomata was not due to inflammation but to an intensely rapid form of fatty degeneration, comparable only to that which affected the hepatic cells in acute yellow atrophy of the liver. Inflammation and sloughing, when they did occur, were septic complications. (8) Degeneration and absorption might occur, whether the toxins were injected directly into the tumor or into some distant part of the body. In the former case the effect was more rapid, and the constitutional symptoms were severe. (9) The method was attended with a considerable degree of danger. It should, therefore, be adopted only in those cases in which there was no other remedy. The chief risk seemed to be from collapse and pyæmia. There must always be danger of the latter if there was a suppurating or sloughing sore. It might be argued that patients whose lives were threatened by a malignant growth would never be cured by

any remedy that did not involve some such degree of risk. (10) The cultures were of no use unless taken from a virulent case of erysipelas, or were made virulent by passing the streptococcus through rabbits. (11) The bacillus prodigiosus, in spite of the theoretical objections, had the effect of immensely increasing the reaction. (12) The effect was most striking in the case of rapidly growing sarcomata. Slowly growing ones seemed to have much more resistance. Probably this meant that masses of embryonic cells, with little organization, gave way to injurious influences more readily than those that were more closely knit together. (13) Patients often gained in weight and strength while under treatment. (14) Treatment should be continued until the growth had vanished, or until it had become so small that it could be removed. (15) If there was a recrudescence of the disease, it did not follow that the toxin would be so efficacious the second time as the first. Whether this was the result of tolerance being established could not be said. (16) Recurrence in other parts of the body might take place after many years. (17) The severity of the reaction was quite variable. Probably this depended upon the rapidity with which the injection was absorbed, rather than upon any cumulative action it might possess.

Syphilis as a Cause of Abortion.—Dr. J. A. Ouimet (*Medical Review*, vol. xxxvi., No. 15, page 267) concludes: (1) Syphilis is a powerful cause of abortion, the abortion being due to a lesion of the fœtus itself or its appendages. (2) It occurs mainly about the seventh month. The father, if alone syphilitic, can transmit the syphilis to the product of conception. The latter is more liable to occur the nearer the moment of conception is to the beginning of syphilis. (3) The mother may give birth to a syphilitic child while remaining free from syphilis. (4) When the father and mother are both syphilitic the child rarely escapes infection. (5) The mother, if syphilitic before pregnancy, is more liable to give birth to a healthy child the more ancient the syphilis. (6) The nearer the syphilis approaches the termination of pregnancy, the greater chance the child has to escape infection. (7) The child born of a syphilitic mother may come into the world presenting lesions manifestly syphilitic, or be born apparently healthy and become syphilitic only after some months or even years. Syphilis imparts no particular characteristic to the course of confinement. Mercurial treatment should be instituted at the beginning of pregnancy.

Preventive Treatment of Ophthalmia in Newborn Children.—The rules for the prevention of this ailment are as simple in their application as they are satisfactory in their results, and may be epitomized as follows: (1) If a pregnant woman be known to suffer from gonorrhœa, every attempt should be made to cure the complaint before parturition. (2) In case the ailment persists, the vagina and external parts should be irrigated during labor with some antiseptic fluid, and this should be repeated from time to time if the stage of propulsion be slow. (3) After the child is born, but before the cord is cut, any secretion lodged about the lashes or lids should be carefully wiped away with wool, moistened with perchloride lotion. (4) After the cord is severed one or two drops of a two-per-cent. solution of silver nitrate should be run into the baby's eyes, held open for the purpose. (5) Clean water must be used for washing the head and face, which must on no account be touched with that employed for the bathing of the body. (6) Secondary inoculations from the lochia, etc., must be avoided by the exercise of common sense and cleanliness.—Dr. Sidney Stephenson, *Medical Press and Circular*, June 8th.

Life Expectancy in Syphilitics.—Dr. James Nevins Hyde (*Medical Examiner*, April) says: "(1) Inherited syphilis is one of the most fatal of all disorders affecting the human race, and under the most favorable circumstances, irrespective of abortion and miscarriage, nearly ninety per cent. of infected children born living subsequently die. (2) Acquired infantile syphilis is very rare, is an exceedingly manageable disease, and is one in which probably a large proportion of infants survive. (3) Between eighty and ninety per cent. of all adult patients affected with acquired syphilis escape its gummatous complications. (4) The percentage of persons affected with gummatous syphilis who perish is not known, but one may doubt if it exceeds two per cent. of the ten to fifteen per cent. of those who suffer from gummatous complications. (5) The expectancy of life is probably affected by coincidence of syphilis with other diseases, and the prospect that the patient with acquired syphilis will ever suffer with either struma, tuberculosis, or cancer is exceedingly small. (6) The natural evolution of acquired syphilis in untreated cases in the adult is not in the direction of a lethal issue, but rather in the line of physical degeneration and grave complications due to involvement of the nervous system and of the bone, without affecting organs essential to the continuance of life. (7) It is unfair to charge an extra risk for the insurance of syphilitic applicants otherwise in sound health, and insurable, as any assumed unfavorable prospects due to the fact of infection are more than counterbalanced by the extreme improbability of death from either tuberculosis or cancer. (8) If what precedes has a fair foundation in fact, it follows that the syphilitic applicant for life insurance should be examined with a view not so much to his syphilitic history as to his condition with relation to all other items making up a satisfactory risk. In other words, if he has a good family history, a sound constitution, excellent habits, and has reached, but not passed, a satisfactory age, his expectancy of life is probably that of other individuals in similar conditions, without added risk in consequence of his specific disorder."

Senile Uterine Catarrh.—Dr. J. Holliday Croom, physician and clinical lecturer on diseases of women, Royal Infirmary, Edinburgh (*The Edinburgh Medical Journal*, April) says: "In regard to the differential diagnosis between primary corporeal cancer and senile uterine catarrh, the following points are worthy of consideration: First and foremost in most cases of primary fundal cancer, periodic and severe pain is an early and prominent symptom; whereas in senile uterine catarrh the pain is irregular and colicky, or, if not, it is slight and constant. Secondly, in cancer, fetid discharge, at least in the early stages, is unusual, because the os is closed and the face of the cancer is protected from external influences; whereas in catarrh, fetid discharge is a prominent and early symptom. Thirdly, local examination in cancer finds the uterus distinctly enlarged and sensitive, and it early becomes heavy and fixed; whereas in the simpler condition the uterus is either normal or only slightly enlarged, and remains freely movable throughout. Lastly, dilatation and local exploration reveal the presence of the neoplasm in the one case and the absence of all irregularity in the other."

Infective Gastro-Enteritis.—

℞ Tr. iodi..... 15–18 gtt.
Aquæ destil..... 150 gm.
Syr. simplicis..... 20 gm.
M. S. Teaspoonful every one or two hours.

—Dr. Grosh, *Semaine Méd.*, June 22d.

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THE RETURNED TROPICAL INVALID.

IT is hardly an exaggeration to say that the members of the fifth army corps, returned from Santiago, have suffered more from tropical diseases at Montauk Point than they did while in Cuba. Many deaths from malaria and dysentery have occurred among them, even among those who were thought upon their arrival at Camp Wikoff to be convalescent, and others, supposed to have entirely recovered, have been brought to bed again with recurring malarial fever. In the majority of cases these relapses have resulted from over-exertion and imprudence committed through ignorance by men who thought themselves safe once they were in northern latitudes. There is no greater error, however, than to assume that one is safe from the consequences of tropical disease as soon as he has come into a temperate climate, and nothing is more dangerous than to presume upon this assumption.

In an article in *Treatment*, of August 11, 1898, Dr. James Cantlie makes some practical suggestions concerning the treatment of the tropical invalid upon his return to Great Britain. The author's remarks are directed chiefly to the management of the chronic invalid, one who has been a resident of the tropics for a long period, yet they are applicable also in great part to the sufferer from acute malaria, especially that of malignant form such as incapacitated our men about Santiago. The one marked and lasting feature, he says, which is imposed upon the physique by a residence of any length in a tropical country is anæmia, not a mere functional anæmia, but a true organic oligocythæmia. The causes of this blood poverty are numerous, but probably the most potent is malaria, whether the affection be mild in form and long continued or intense but brief. Not only is there a diminished number of corpuscles available for oxygen carrying, but there is also a loss of power to regenerate the normal and pathological waste.

One of the main indications, therefore, in the treatment of one returning from the tropics is to combat the anæmic condition. In view of this, Dr. Cantlie says, a large city is the last place such a person ought to take up his abode in on first coming home, for it does not supply him with the one thing needful, namely, oxygen. Even the permanent residents of any large city find it quite impossible, as a rule, to maintain good health without a change. But although there is a plentiful supply of pure oxygen-laden air in most parts of the country, the choice of a place in which the tropical invalid may recuperate is by no means a matter of indifference. Most city physicians, certainly those in large towns away from the coast, would think first of the seashore as an ideal place for recuperation. This, the writer says, may be excellent advice for the inland town dweller, but it is not necessarily so for the returned tropical sojourner, and, as a matter of fact, experience has proven that the tropically anæmic person is not benefited by residence at the seaside. The air at that low level may seem fresh and possessed of tonic properties, but to the class of patients under discussion it is really relaxing and brings neither appetite, nor sleep, nor muscular vigor. Mountain air is what such persons need and in which they thrive. The elevation need not be great, and probably one thousand feet, or even less, would be sufficient. The wisdom of Dr. Cantlie's advice has been shown in the case of a number of the soldiers back from Cuba, who suffered severely at Montauk, pure and tonic as is the air there, but "picked up" almost immediately upon going up to the Adirondacks or into Sullivan County on furlough.

Another point in the advice given to the tropical invalid by the writer of this interesting paper is to avoid crowded rooms. "A visit to the theatre is generally followed by a restless night and a depressed physical and mental state on the following day. Dinner parties—to a succession of which one is usually subjected when one returns from a lengthy stay abroad—are likewise detrimental, not necessarily from the indulgence at table, but more certainly from the close air of the dining-room. Attendance at church, especially evening services in ill-ventilated churches—and all churches are ill ventilated—is accompanied and followed by consequences which soon cause one to dread the ordeal."

Finally, a word of warning is given against exposure to the sun. One who has suffered under the vertical rays of the sun in the tropics is tempted to regard the heat of the sun in 40° and 50° north latitude as something to be despised. But experience shows that this scorn is ill inspired, and exposure to the direct rays of the sun, even on a cool day, is often sufficient to provoke a chill and a sharp rise of the body temperature. The same effect is apt to be produced by fatigue or by a wetting. The combined effect of fatigue and exposure to the sun was shown recently in this city, when numbers of the members of the seventy-first regiment were prostrated with a return of fever after their march up Broadway, and the same result would doubtless have followed the suggested review in this city of all the troops that had served in Cuba, had not wiser counsels prevailed. In short, one who has suffered from tropical diseases after a long or a short residence in a hot climate is an invalid, and must be treated as such, and must not be allowed to act as a well man because the first breath of cool air has stimulated him and given him a false sense of vigor.

Lieut.-Col. Nicholas Senn, surgeon of volunteers, was honorably discharged on September 21st, his services in the United States army being no longer required.

THE PREVENTION OF CANCER.

According to the reports of the registrar-general, the mortality from cancer in England and Wales is progressively increasing out of all proportion to the increase in population, and with a rapidity that may well arrest the attention of sanitarians. A study of a table compiled from these reports and published by Mr. W. Roger Williams in *The Lancet* of August 20, 1898, shows us that in 1840 cancer caused 2,786 deaths, the proportion being 1 in 5,646 of the total population and 1 in 129 of the total mortality, or 177 per million living; in 1896 the deaths due to it numbered 23,521, or 1 in 1,306 of the total population and 1 in 22 of the total mortality, or 764 per million living. Thus the proportionate mortality from cancer now is four and a half times greater than it was half a century ago.

It is impossible to explain this remarkable increase in the mortality from cancer otherwise than by an increase in the prevalence of the disease. The assumption that the increase is only apparent and is due to improved methods of diagnosis is untenable, for it is probable that the reverse is nearer the truth and that many cases formerly diagnosed as cancer are now classed under other heads. The attempt to explain this increasing mortality as due to the average age of the population having advanced and the consequent greater liability to cancer will also not bear critical examination, Mr. Williams shows, for the saving of life in modern times has been mainly confined to early years. The number of deaths among men over thirty-five years and women over forty-five years has remained stationary or increased, while the number of persons who attain old age has decreased.

In respect of this immense increase in mortality cancer is unique, for nothing at all approaching it is furnished by the statistics of any other disease, and yet no effect appears to have been produced on the medical profession or the general public by these startling figures of the registrar-general's reports. Concerted efforts are being made to stay the progress of tuberculosis, while the warning of the cancer mortality is neglected. Yet, if the disproportionate increase in deaths from malignant disease continues, cancer will soon be as lethal as typhoid fever, smallpox, and tuberculosis combined. In the face of these statistics it behooves sanitarians to investigate with great care the conditions which favor the development of cancer, whether these be personal or regional, dietetic or microbic, for it is only by the avoidance of the main etiological factors that a decrease in the prevalence of cancer can be attained. In this respect Mr. Williams is very optimistic, and he unhesitatingly expresses the belief that there need be no more difficulty in mitigating the prevalence of cancer—and perhaps even in eventually extinguishing the disease altogether—than there is in the case of the maladies mentioned above.

This hopeful view is, of course, based upon a positive theory as to the origin of cancer, the tendency to which he believes may be increased by unsuitable modes of living, and *vice versa*. Concerning the etiology he says: "Such influences as are comprised under the terms alimentation and domestication seem to me to be of paramount importance. Probably no single factor is more potent in determining the outbreak of cancer in the predisposed than high feeding. There can be no doubt that the greed for food manifested by modern communities is altogether out of proportion to their present requirements. Many indications point to the gluttonous consumption of meat, which is such a characteristic feature of this age, as likely to be especially harmful in this respect. Statistics show that the consumption of meat has for many years been increasing by leaps and bounds, till it has now reached the amazing total of one hundred and thirty-one pounds per head per year, which is more than double what it was half a century ago, when the conditions of life were more compatible with high feeding. When excessive quantities of such highly stimulating forms of nutriment are ingested by persons whose cellular metabolism is defective, it seems probable that there may thus be excited in those parts of the body where vital processes are still active such excessive and disorderly cellular proliferation as may eventuate in cancer. No doubt other factors coöperate, and among these I should be especially inclined to name deficient exercise and probably, also, deficiency in fresh vegetable food."

This is interesting, as guesses after truth always are, but something more solid than a coincidence is needed as a basis for sound theorizing. The consumption of alcohol has increased of late, as well as that of meat, and we might therefore with equal justice attribute cancer to indulgence in alcoholic beverages. As regards physical inactivity, also, we question whether in this age of bicycling and out-door sports people take less exercise than formerly. It would be interesting also to learn whether professed vegetarians ever suffer from carcinoma.

THE RESPONSIBILITY OF THE ARMY MEDICAL DEPARTMENT.

Surgeon-General Sternberg has published in the daily press a statement disclaiming on behalf of himself and the medical department all responsibility for the sufferings of the sick and wounded soldiers on the transports, in camp, and on the battlefield. He says that it is quite impossible for him personally to administer or even to supervise the medical administration of armies in the field. For this purpose there is a chief surgeon for each military department, for each army corps, for each division, and for each brigade. These chief surgeons are directly responsible to the commanding generals of the troops with which they are serving, and the surgeon-general has no direct authority over them. He thinks it is absurd to hold him responsible for the conduct of five hundred or more volunteer regimental surgeons and contract doctors, most of them without any previous military experience, or even for that of the six hundred acting assistant surgeons, who were employed without having been subjected to a preliminary examination. "In

short," he says, "the surgeon-general of the army is not personally responsible for the neglect or incompetency of medical officers, whether regular or volunteer."

The responsibilities which he admits are the following: As chief of the medical department he recommends the assignment of medical officers to duty as chief surgeons of army corps and of military departments, and these chief surgeons are responsible for the proper administration of medical affairs in the commands to which they are attached. The surgeon-general has direct charge of all general hospitals, of the medical supply depots, of hospital ships, of the army medical museum, of the enlistment and distribution of members of the hospital corps, of disbursements for artificial limbs, of the payment of all bills against the medical department of the army, etc. He also is responsible for the purchase and issue of medical supplies for the army, the surgeons on duty with troops being of course expected to make timely requisition for supplies, since the surgeon-general cannot be expected to foresee and provide for all emergencies that may cause an unusual consumption of certain drugs.

Concerning the hospital trains, Dr. Sternberg says that the trains which are going from one part of the country to another with troops, and which frequently are reported as carrying sick men unfit to travel, are not under his control. As a rule, he knows nothing of their departure or arrival, and cannot be expected to have supervision of the sick, "who are placed upon these trains by regimental surgeons, often very injudiciously, and no doubt in response to the urgent solicitation of the men, who wish to go home with the regiments that are to be mustered out." The surgeon-general himself has at his disposal but one hospital train, and this is made up of tourist sleepers, thoroughly equipped for transporting sick men.

He likewise disclaims all responsibility whatever for the hideous condition of many of the transports which brought the sick and convalescent soldiers from Santiago. These transports, he says, were not under his control, and, as a rule, he had no information with reference to their departure or the preparations made for the care of the sick to go upon them. These preparations should be made under the direction of the chief surgeon at the point of departure; but the transports themselves are under the control of the quartermaster's department. The only ships which have been fitted up expressly for transporting sick soldiers are the hospital ships *Relief* and *Missouri*. These are under the immediate control of the surgeon-general, and are thoroughly equipped for the work for which they are intended.

With responsibility for the health and the life of our troops so widely distributed as to sit with imponderable lightness upon any one surgeon, we can little wonder th t the misery was so great. It speaks volumes for the devotion and humanity of the individual members of the medical corps that so much was done for the sick and wounded as was done, since there was apparently no head to direct and to supervise. The duties of the surgeon-general, as authorized in the statement to which we have referred, seem to be such as could be performed by any person of ordinary ability, and to call for little or no special medical knowledge. It must be very trying to the nominal head of the medical department of the army to have so little authority over his subordinates, and we are not surprised that in his helplessness to correct abuses he disclaims responsibility for them.

THE OMNIPRESENT MICROBE.

The bacteriologist is becoming as grasping as the surgeon in appropriating as his own all manner of diseases and distempers within and without the human frame. Rheumatism and cancer, bald heads and senility, have been placed in the credit column of the microbe's ledger, and now comes a Montreal physician, Dr. Adami, blowing away the alcoholic theory of hobnailed liver and introducing a minute micro-organism as the active agent in the production of the lesion. He has examined a number of cirrhotic livers and found in them certain microbes, which, however, on account of their minute size and refractoriness to the usual staining methods, he is unable to describe satisfactorily. Many of the forms, he says, resemble closely minute editions of the gonococcus. They also vary to some extent in size, though this, he thinks, may be a matter of imperfect staining or an evidence of polymorphism of the germ. He is, on the whole, inclined to regard the organism as a bacillus rather than as a diplococcus.

Dr. Adami wisely refrains at present from putting down portal cirrhosis as a frankly microbic disease, but he goes so far as to say that "in a certain number of cases, at least, of hobnailed liver, there is present, more especially in the liver and the abdominal lymph glands, a minute micro-organism resembling closely that found pathogenic in the infective cirrhosis of cattle; a form which is present most frequently as a minute micrococcus, but sometimes has a more bacillary appearance, and which is thus to some extent polymorphous."

We trust the scientists of the Woman's Christian Temperance Union will resist this bold attempt to do away with a forcible argument against alcoholic indulgence. In the words of a worthy Episcopal clergyman of this city, who refused to sanction the circumcision for adherent prepuce of a boy of one of his parishioners, we cannot but regard this investigation of Dr. Adami as "subversive of the principles of the Christian religion," and in the interest of morality it is to be hoped that the author's staining methods will not be improved.

Humanity of a Spanish Surgeon. — During the infantry skirmish following an attack on the landing party from the *Gloucester* at Guanica, Porto Rico, one of the volunteer soldiers, outrunning his comrades, advanced far ahead of his line. When he had nearly reached the Spanish position, he was overcome by the heat and fell in a semiconscious state. A Spanish doctor and two hospital-corps men rushed to his aid with a stretcher, administered the necessary restoratives, and had him conveyed at once within the American lines.

News of the Week.

New Doctors in Pennsylvania. — Examinations of candidates for license to practise medicine in the State were recently held in Pittsburg and Philadelphia. There were 317 candidates, 63 in Pittsburg and 254 in Philadelphia, of whom 49 were rejected. The winter examinations will be held in Philadelphia, December 12–15, 1898.

Cholera is epidemic in Madras and is steadily increasing in its prevalence. During the week ending August 19th, ninety-one deaths and about two hundred cases were reported.

Vaccination in France.—At the congress held at Nantes M. Brouardel proposed a resolution, which was unanimously adopted, to the effect that compulsory vaccination should be extended to Tunis. In France vaccination is enforced by strict regulations, which do not meet with any opposition from the public. All persons seeking employment of any kind are required to produce a certificate of vaccination, and all soldiers are revaccinated on joining their regiments. The Academy of Medicine also awards every year a considerable number of prizes and medals to the medical practitioners who have performed the most vaccinations and revaccinations. In fact, vaccination is taken quite as a matter of course in France. Under these circumstances no one looked for a campaign against vaccination undertaken by the celebrated anti-Jewish journalist, Edouard Drumont, a campaign undertaken in the name of individual liberty, and, which is still more strange, in the name of hygiene as understood by M. Drumont. In an article which has produced some sensation and caused astonishment, rather than made converts, he declares that small-pox is not a disease but a natural process, in the course of which the organism spontaneously throws off morbid products which it contained; in his opinion vaccination is the only cause of racial degeneration and of the increase of new diseases which were formerly unknown. On this ground Jenner must be regarded as a scourge of humanity, although it is admitted that he possessed the merits of being an excellent father and a naturalist who carefully studied the habits of the cuckoo.—*The Lancet.*

Abortion in Canada.—A discussion was recently held in a Montreal Anglican Church convention upon the low birth rate in Ontario, and the cause therefor was asserted to be the wide prevalence of criminal abortion and of the use of artificial means to prevent conception. The low birth rate may be due partly to the cause assigned by the ministers, but it is also associated with a very low marriage rate, which would seem to account for it in a measure.

Matches without Phosphorus.—The prize recently offered for the discovery of a means of making matches without the use of red phosphorus has greatly stimulated research, and it is reported that two chemists in Berlin have invented a match that can be ignited by friction on any surface and which is made without any phosphorus.

Dr. Dietrich Nasse, of Bergmann's klinik at the University of Berlin, lost his life last week in the Alps. He and another Berlin physician, Dr. Borchardt, with two guides, the four men roped together, were crossing the Piz Balne over a snow bridge, which gave way, and the leading guide and Dr. Nasse fell into a crevasse. The latter had the rope around his chest and hung in midair. A half-hour later, to relieve the intolerable strain, the guide cut the rope between himself and Dr. Nasse and disappeared into the depths. The other guide and Dr. Borchardt were then able to pull Nasse up, but he was dead. The guide who was ready to offer his life for his employer was but slightly injured and was able to scramble out unassisted from the crevasse into which he had fallen.

The Naval Medical Service.—For the first time in many years there is no vacancy in the medical staff of the navy, the corps being now up to the authorized commissioned strength. This is, of course, due to the war, and if the unjust discrimination against the surgeons in the navy can now be finally done away with, there will be no difficulty in filling promptly all vacancies that may occur in the future.

The Water Famine in London.—Owing to the drought and unprecedented hot weather, the scarcity of water in East London, referred to by our London correspondent, has been growing more and more alarming. The population dependent upon that particular water company numbers about two millions, to whom water is supplied for three or four hours only out of the twenty-four. In its issue of September 17th, *The Lancet* says that "if the present abnormal condition of meteorological things continues the consequences may be most serious. The rivers are depleted to the utmost. The drains are not adequately flushed and there is little flow in the upper reaches of the city to carry off the daily discharge of sewage." The only security for Londoners against a repetition of this most dangerous shortage of water, our contemporary holds, is to build an aqueduct to the watershed of Wales, where the supply is literally inexhaustible. The length of the required aqueduct would be about one hundred miles.

Death from Laughter.—A man died in New Orleans a few days ago as a result of laughter. He was at the theatre, and began laughing so heartily that he lost control of himself and fell to the floor, dying in syncope. He had suffered for some time from valvular heart disease.

The Increase of Suicides in Italy in 1897, compared with the average of the ten preceding years, was over 50 per cent. The total number of suicides for that year was 1,997, which corresponds to a mortality of 6.41 for every 100,000 inhabitants. In this total 1,401 were men and 596 were women. Married persons numbered 810, unmarried 949, widowers 177, and widows 61. The greater number of suicides took place in the spring and summer, being respectively 614 and 572. The majority of suicides were reported from the provinces where education is most widely diffused and the ratio of illiteracy lowest.

Osteopathy.—A correspondent inquires concerning the essence and the foundation of osteopathy. We confess to a somewhat hazy idea of the principles upon which the "system" is based, and turn therefore to the following lucid explanation given by A. T. Still, the founder of osteopathy. If our correspondent is not satisfied with this exegesis, we cannot help him further: "I feel to answer through the *Journal of Osteopathy* questions that are asked by thousands of persons annually. And as time adds days and years the number of persons who ask those questions have multiplied to such greatness in numbers that is absolutely impossible to find the time to answer them in detail. And I am not sure that I can answer all of them through the *Journal*, but will try and so arrange that a few of the most common ones will be answered as best I can. By my method of reasoning I arrive at the conclusion that man was, after receiving his form, like unto the world on which he dwells, and that in his body could be found all the mineral, vegetable, and animal substances that could be found in the beast of the field, the fowls of the air, fishes of the sea both great and small, in short, all that was contained in this and all other planets and beings, from the throne of God (Himself included), to the lowest form of animated beings; that in the human being all attributes of mental and physical were represented in kind. With this conclusion I proceeded and did obtain what I have proclaimed and proven to be truths universal in kind and action, submitting to and being governed by one common law. I reasoned that all effects as are shown in disease with the result of the productions of the truths of the one great common law, mind and motion expressing themselves through matter. Motion is an effect of life with its powers. Disease in any form or presentation was another effect. Conception of beings, diseases, and worlds, were the biogenic answer of the wombs of nature either large or small, believing while I was in the chambers of sober and intelligent nature where honest reason only can dwell, that it was safe to follow the teachings of that principle that made no mistakes that I could detect. . . . The world's systems of cures by drugs are now and always have been based on three principles, namely: opiates, purgatives, and stimulants. And the difference there is in the schools of medicine are about all told in the quantities to be given. All give deadly poisons but try to get the same results. Allopathy starts the ball to rolling by big pills, eclecticism the same, but claims that vegetable medicines are better than mineral preparations. Then the homœopath closes by pills of less size, and if they fail he drives morphine under the skin and spills it in the fascia, which carries the opium to the brain and produces effects by paralyzing sensation. And on these three principles all depend."

Hospital Ships for French Fisherman.—The *British Medical Journal* gives an account of the misfortunes of the Société des Œuvres de Mer, a society which was founded in 1895 for the purpose of giving aid to the French fishermen off the shores of Iceland and Newfoundland. In less than two years the pioneer hospital ship, a sailing vessel admirably equipped and capable of accommodating thirty patients, was dispatched to Newfoundland; but the ship, named the *St. Pierre*, was totally lost in a fog, and her sister ship, the *St. Paul*, which left for Iceland soon afterward, was cast upon the coast of that island during a gale. Eventually the *St. Paul* was redeemed, and she is still afloat; but the society's ill luck was not yet exhausted, for its third hospital ship, the *St. Pierre* No. 2, had no sooner arrived off the Bank than she collided with a smack, receiving serious injury. In spite of these misfortunes, however, the society is still at work—in the words of Dr. Bonnafy, is "*au vent de sa bouée*," a nautical phrase, which may be freely translated as running before the wind. In addition to its work afloat, the society has also established *maisons de famille* on shore for the fishermen, many of whom are no more than boys. In 1896 the daily attendance at these refuges was one hundred and twenty-two; in 1897 it was one hundred and ninety-eight.

Obituary Notes.—Dr. George W. Lindheim, assistant surgeon of the eighth New York volunteer regiment, died at his home in this city, on September 16th, of typhoid fever. He was twenty-seven years old, and was a graduate of the College of Physicians and Surgeons of this city. He recently returned to New York in charge of a hospital train bringing sick members of the eighth regiment from Chickamauga. While passing through Cleveland he was pestered by some newspaper reporters and physicians, who insisted upon his sending to hospital there some of his sickest charges. They said the men would not live long enough to reach New York and threatened to "roast" Dr. Lindheim if he did not yield to their demands. He said he had been instructed to bring the men to New York and intended to do so. They all arrived alive and none, except Dr. Lindheim himself, has yet died. He was taken ill two days after the arrival here, and in his delirium was constantly rehearsing the criticism to which he had been subjected from reporters in Cleveland and elsewhere along the route, and also from some of his own men who complained that he was starving them because he would not allow the convalescents from typhoid fever to eat themselves into a relapse.—Dr. Joseph Kufner, of this city, died on September 14th. He was born in Germany sixty years ago, and studied at Munich and Vienna. After coming to this country he took a course in medicine at the Bellevue Hospital Medical College, whence he was graduated in 1882.—Dr. William Lindsley Mussey died suddenly last week in Paris. He had studied at Yale and Johns Hopkins University and was graduated from the Miami Medical College in 1887. He had been studying during the past two years at Vienna and Paris. — Dr. Henry Otto Clauss, of New York, killed himself with a pistol on September 19th. He was born in Germany seventy-three years ago and came to this country when quite young. He was a graduate of the Long Island Hospital Medical College in the class of 1865. He leaves a son, a physician.—Dr. Philip Arthur Malleson,

of New York, died at his home, on September 19th, of appendicitis. He was born at Glens Falls, N. Y., in 1859, and was graduated from the College of Physicians and Surgeons in this city in 1884. He was one of the founders of the Harlem Medical Association.

The Medical Directory of the City of New York.—Candor compels us to say that the medical directory published under the auspices of the Medical Society of the County of New York, a new edition of which has recently appeared, is a poor affair. In no sense can it be said to fill the place left vacant by the cessation of publication of the "Medical Register." The lists of physicians are sadly incomplete, the necessity of referring to two lists to find one name in New York city is exasperating, and the lack of information concerning any physician who has the misfortune not to be a member of the county society still further impairs the usefulness of the work.

Vaccination in England.—The average fee for a vaccination in England is, according to the *Medical Times*, half-a-crown or sixty cents. This involves two visits, the filling up of a certificate, and the cost of the vaccine.

Typhoid Fever Spread by Flies.—The commission, consisting of Drs. Lee, Vaughan, and Shakespeare, which was appointed to inquire into the cause of the camp epidemics of typhoid fever, has concluded its investigations. The camps at Chickamauga, Huntsville, Fernandina, and Jacksonville were inspected. It was found that the typhoid fever in each instance was brought by the volunteers from their State camps. The water supply was in most places good and was not responsible for the spread of the fever. This was effected, in the opinion of the members of the commission, by the flies which swarmed in all the camps and devoted their attentions impartially and alternately to the fæcal matters in the open and not disinfected sinks and to the hardtack and "sow belly" of the troops.

Street-Car Surgeons Recognized.—At the meeting of the International Association of Railway Surgeons, held recently at Toronto, the executive committee adopted a resolution declaring that surgeons of street-car and elevated railroads are eligible for membership in the association.

The Health of the Marines.—The health statistics of the marine corps on duty for many weeks in Cuba would seem to show, what every one with experience knows, that it is possible with proper care to keep troops in good health in the tropics, for a certain period at least. The marines landed at Guantanamo, only a few miles distant from Santiago, occupied the same soil, fought in trenches, and endured almost if not quite as many hardships as the soldiers, and were there for a longer time. Their health was, however, carefully watched, and the precautions taken were successful in preventing disease, for not a man was lost through disease, and the percentage of sickness was at no time above two and one-half. The marines went to Cuba with tents and other equipage. They had flooring for the tents, which could be put together with screws. After they had started, their canvas uniforms were sent to them. They were all trained men, and they observed without complaint the sanitary regulations prescribed by the officers. The latter carefully watched the diet, the drinking-water, and everything that conduced to the comfort and welfare of the men in their charge. When the tents were pitched, the floors were put together and placed on rocks, a rock at each of the four corners, raising the floor slightly from the ground. This prevented the soldiers from coming into personal contact with the soil, and permitted proper drainage and ventilation of the tents.

Medical College Consolidation.—There is a growing tendency, and one that should be encouraged, throughout the country to a union of two or more weakly medical colleges in any one city and the formation from them of one strong institution. Nashville, Buffalo, and New York have led in this reform (though the latter has gained nothing in the way of reducing the number of schools, merely preventing an increase), and now there is talk of consolidation in Columbus, Ohio. The *Columbus Medical Journal* says that a proposition had been made looking to a union of the Ohio Medical University and Starling Medical College as the medical department of the Ohio State University. There are some objections, sentimental and financial, urged against the proposed foundation of a medical department of the State University out of the remains of the two existent schools, but the advantages are patent and should outweigh all objections to the scheme.

The Sick at Santiago.—On September 20th there were 1,187 sick among the United States troops in and about Santiago, and of these 679 were reported to have "fever." What is meant by this term is not stated, but it is probably intended to cover typhoid fever, yellow fever, and malaria, since we find these three specifically mentioned among the causes of deaths.

Yellow Fever in the South.—Isolated cases of yellow fever have been reported in New Orleans, and in Jackson, Oxford, and other places in Mississippi. The State board of health has adopted an ordinance forbidding steamboats and other craft clearing from New Orleans to land at any point in Mississippi, until the Marine Hospital service places inspectors on all boats. Surgeon-General Wyman, of the Marine Hospital service, has completed a system for the inspection of trains on all railroads in that part of Mississippi which is infected with yellow fever. Inspectors have already been placed upon nearly all the roads, and will soon be placed on all. The system has been established for the purpose of checking the spread of fever so far as practicable, and it is the purpose of the bureau to make it as effective as possible. Passed Assistant Surgeon Stimpson is in charge of the service.

The Smoke Nuisance.—So many complaints have been made this summer of establishments burning soft coal, that the board of health has divided the city into twenty-seven "smoke" districts, each of which will have an inspector to report as to smoke nuisances.

Clinical Department.

BROMIDE OF POTASSIUM FOR THE MORPHINE HABIT.

By C. H. HUMPHREYS, M.D.,
DAYTON, OHIO.

I was asked recently to see a physician who had unfortunately acquired the morphine habit, and who, after many ineffectual efforts to stop the use of the drug by "tapering off," saw an account by Dr. MacLeod in the *British Medical Journal*, of the cure of the morphine habit by bromism, and determined to give it a trial. He had taken about three ounces of the salt when his family grew alarmed at the mental disturbances produced, and requested me to see him. I found him deeply under the influence of the bromide, and, learning the true state of affairs, had him removed to the hospital, the better to conduct the treatment. Not being satisfied with his statement that he had been taking on an average twelve grains of morphine a day, I cut the injection down to half a grain three or four times a day, and then gradually reduced it to one-fourth of a grain twice daily, until on the fifteenth day of his hospital treatment he, of his own accord, refused further injections of the morphine, although it entailed considerable suffering. The cessation of the drug was followed by the usual digestive and nervous disturbances for several days. At the end of the third week the patient returned to his practice, freed from all desire for morphine, he firmly declares.

As a result of the bromism and the withdrawal of the morphine there were great muscular relaxation and general lassitude, which were relieved by hypodermic injections of strychnine.

The patient is of the opinion that the morphine should have been entirely withdrawn while he was under the full effect of the bromide, as the continuance of it, even in small doses, after the effect of the bromide had passed off, only fed the old flame and in a measure converted the treatment into the gradual-withdrawal plan, with its attendant suffering.

A SPLINT FOR FRACTURE OF THE FEMUR IN THE INFANT.

By PATRICK J. TIMMINS, M.D.,
BOSTON, MASS.

The most skilful accoucheur may meet cases of breech presentation, in which a fracture of the infant femur, or, more correctly, a separation at the epiphysis, is unavoidable, if, indeed, it be not the *sine qua non* of delivery *per vias naturales*. I can place three such cases to my credit in the space of fifteen years. All three patients are alive and able to kick. I had much difficulty in treating the first two, for want of acquaintance with a suitable splint. The last was a real pleasure to handle, because of an appliance which I think worthy of introducing to my professional brethren. I cannot claim to be the originator of this splint; I was merely the one that gave it its present form. The seed was sown by my friend, Dr. Francis E. Cane, of Brooklyn, N. Y., late of Boston.

The child, having been carefully washed, should be thoroughly rubbed all over with alcohol, to harden the skin. Then the physician should select a fairly stiff sheet of tin, a little wider than the child's body, so that it can be dished up about an inch at the sides, and long enough to extend from the shoulders to the heels. A piece is cut out of it from opposite the coccyx to the heels, so as to give on either side a strip for each leg. The operator must see that enough room is made in this cutting for the easy application of a pad of gauze to receive the fæces and urine. The splint is to be well padded with sheet wool and the padding liberally dusted with powdered boric acid. The physician then secures with two wide straps of adhesive bandage the wide part to the body, one of the straps being placed around the chest, the other about the pelvis. The strip of splint which is to secure the broken leg is next to be flexed with the thigh, and then bent back at the knee, leaving the femur portion long enough to serve for a fulcrum, on which may be extended into place the separated bone.

Counter-extension is secured by the already fixed pelvis. The femur and leg are strapped, as needed, to the spint. The sound leg is done up in the same way, and then the body and both legs are bandaged as far as the feet.

The patient is now secured, as it were, in a chair, and can be carried about or laid to rest with perfect ease and security. By using a piece of rubber sheeting or oiled silk to cover the edge of the padding about the anus, cleanliness may be insured. To take the measure for the splint, a sheet of paper is to be placed under the infant, laid on its back on a table, and a stroke of a pencil around the body and legs will mark a pattern, which is to be cut out and pasted on the sheet of tin. A pair of tinsmith's shears will do the rest.

The fracture I treated in this manner was left undisturbed for three weeks. The result was excellent. The ease with which a child so put up can be handled by mother or nurse will be found not the least advantageous feature of the treatment.

GREEN-STICK FRACTURE OF BOTH BONES OF THE FOREARM IN A CHILD EIGHTEEN MONTHS OLD.

By GEORGE H. WILLIAMS, M.D., M.R.C.S. Eng., L.R.C.P. Edin.
FISHKILL-ON-HUDSON, N. Y.

On May 21, 1898, I saw E. B—— for the first time; the patient was eighteen months old. The end of April, or about four weeks previously, the child had fallen out of a low swing, striking on the ball of each wrist; and although he cried very hard he was soon comforted, and the parents thought no more of the accident until two or three weeks later, when the arms seemed bowed and increasing in deformity. It was four weeks after the accident when I was first consulted.

On examination, the left arm showed a green-stick fracture of both radius and ulna, the greater deformity being backward and about the middle of the bone; the ulna was also fractured at the same level, but did not show so much deformity. The right arm was less deformed, but the fracture in the lower third was of the green-stick variety also and the bowing was also backward. The seat of fracture showed callus, especially about both radii, less about the ulnæ.

On May 29th, I examined both arms at my office with the *x*-ray, and there verified the previous diagnosis. On June 5th, the child was put under chloroform and the left arm, the one with the greater deformity, was refractured and put up in wooden splints. On June 12th the wooden splints were removed, and as the arm seemed in good shape a few turns of flannel bandage were applied, including the hand and extending to the elbow, and over this a silicate-of-sodium dressing; a ten-yard gauze bandage, two inches wide, being rolled through the solution and quickly and snugly bandaged over the flannel. The little fellow was now put under chloroform again, and the right arm was refractured and put up in wooden splints. On June 17th the right arm was taken out of the

splints and permanently put up, as the left had been, in silicate-of-sodium solution, prepared and applied as before. On June 19th both arms were again examined by the *x*-ray and found in good position.

I must acknowledge that I was surprised to find how plainly the bones could be seen through this fairly thick casing. It has been argued that one objection to a permanent dressing after fracture is the inability to watch the progress of the case, but it will be seen that the above-described dressing permits us to examine the position and condition of the fracture, and still gives us even a lighter dressing than splints afford, which in the case of fracture of a child's arm is an important item.

It may be that others have called attention to the above, but I have never seen it anywhere, and thought this report might consequently be of interest.

June 20, 1898.

REPORT OF A LARGE OVARIAN CYST SUCCESSFULLY REMOVED.

By J. SHELTON HORSLEY, M.D.,

EL PASO, TEX.

During the first few years after the general introduction of antisepsis into surgery, the removal of unusually large ovarian cysts was a matter of common occurrence, for in the preantiseptic era the danger of sepsis from any surgical operation—particularly from one involving a serous cavity—was so great that ovariotomy was considered by a number of prominent surgeons of those times an unjustifiable procedure. As a consequence this operation was performed very infrequently, and then only by the very bold. So, ordinarily, the growth of an ovarian cyst was, with the exception of occasional tappings, uninterrupted till death ended the patient's sufferings. But now, with our modern aseptic technique and comparative immunity from infection, the operation has been shorn of its most dreaded dangers, and is so universally performed that it is rare to see a cyst that the surgeons have permitted to attain a weight of even a few pounds.

In view of this fact, the following case may be interesting: Mrs. E. L——, Mexican, aged thirty-four years. Previous health before development of tumor good; family history negative. No children; one miscarriage about a year after marriage. The patient has been married seventeen years. Menstrual flow regular. Soon after her miscarriage she noticed a "swelling" in the abdomen. There were some pains and aches in the back, but nothing of consequence. The swelling gradually increased, and after a few years there was complete procidentia uteri. An examination when I first saw her (June, 1898) showed the classical symptoms of an ovarian cyst—fluctuation, dulness on percussion in front when lying down and tympanites on the sides, and the characteristic globular appearance of the abdomen. The navel was almost obliterated by the excessive tension on the abdominal walls. As fluctuation was the same in all directions, and as the contour of the cyst appeared globular and regular, a diagnosis of unilocular ovarian cyst was made. Her emaciated condition and the peculiar facial expression, so often remarked upon in patients with this disease, are well shown in the accompanying cut.

On June 10, 1898, I operated on this patient at Hôtel Dieu, with the assistance of Drs. Turner and Wright, the former of whom had kindly referred the case to me. An incision of four inches was made in the median line between the navel and the pubes. The pearl-gray sac was easily recognized, and the hand introduced to break up adhesions, which in spite of the fact that she had never been tapped, were quite numerous. The intestines, however, were not adherent. The sac was punctured with a bistoury and delivered as its contents flowed, strong and vascular adhesions being tied off with catgut and divided. The pedicle was secured by two locked stout silk ligatures, the sac cut away, and the stump dropped back into the peritoneal cavity. The incision was closed with silkworm gut and sterilized dressings were applied. The uterus was not sutured to the abdominal wall (on account of the excessively relaxed condition), but was easily replaced and retained in position by packing the vagina with sterile gauze. With the exception of a slight attack of pleurisy on the tenth day after the operation, her recovery was uneventful. The wound healed by first intention, and after four weeks the patient was discharged from the hospital.

The cyst weighed seventy-three pounds, and, though unilocular at the time of operation, bore traces of having been previously multilocular.

A SUPERNUMERARY NIPPLE.

By WILLIAM L. KANTOR, M.D.,

NEW YORK CITY.

Mrs. H—— and her husband came on the 10th of July last to engage me for her expected (first) confinement. Toward the close of the examination I noticed in the middle of the upper third of the right breast a macule with a slight depression in the centre. The woman stated that that was a wart and that it had been there ever since she could remember. There was, however, something peculiar about that wart, and on the 18th of August, at the time of the confinement, I again looked at it. I was still more convinced that it was not a wart, and yet the real nature of it was not apparent. I questioned my patient's mother, who was present, and she called it a birthmark. She said her daughter was born with it.

However, my repeated questioning about that "wart" had the effect of directing Mrs. H——'s and her mother's attention more closely to it. They looked at it, they handled it, and a few days later, after lactation was established, I was informed that some "matter" had been expressed from it. Were they sure it was "matter"? "Yes." "Perhaps it was milk." "Well——" The suggestion rather amused the women. They laughed heartily. But soon the tables were turned, for on manipulating the breast I could make drops of genuine milk come out from that part.

The following day I examined the spot with a biconvex glass. Although there was no sharp projection from the general surface, the areola was well defined, of normal pigmentation, and with a crater-like depression in the centre, where a drop of milk appeared

on slight manipulation of the area. Since then milk can always be made to come through this nipple. It comes also of its own account each time the baby is put to the breast. With the exception of this rudimentary supernumerary nipple, the breast appears normal. Palpation also elicits nothing unusual.

Mrs. H—— is twenty years of age, well developed, and a native of this country.

419 West Fifty-First Street.

Society Reports.

EIGHTH ANNUAL MEETING OF THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

Held in Buffalo, September 13, 14, and 15, 1898.

Charles Rea Dickson, M.D., of Toronto, President.

First Day—Tuesday, September 13th.

The meeting was held in the rooms of the Society of Natural Science, Buffalo Public Library. The session was opened with prayer by the Rev. Orrin P. Gifford, and the mayor of Buffalo, Dr. Conrad Diehl, welcomed the association, and extended to its members the freedom of the city. After dwelling upon the rapid strides that had been made in electro-therapy since he was a medical student, and expressing his conviction that there was a bright future for the association and other workers in this field, he reminded his hearers of the advanced position that had been taken by the city of Buffalo in connection with notable features in electrical engineering, and suggested that arrangements be made by which those present might be permitted to inspect the large power house of the Buffalo Railway Company, and especially the enormous storage battery there—the largest in the world.

On behalf of the association, Dr. Francis B. Bishop, of Washington, D. C., made a fitting response to the address of welcome.

After the reception of delegates and guests and the presentation of reports of standing committees, the regular scientific work was taken up.

Phlebitis: A Clinical Study.—Dr. Margaret A. Cleaves, of New York, read a paper on this subject, giving detailed clinical records as well as general deductions therefrom and from a study of the pathology of the condition. She said that, as it was necessary to avoid any measure which would produce abrupt muscular action, the fast interruption of the induction coil, with the resulting tetanoid contraction, was not to be thought of. With the persistent closure of the continuous or galvanic current there was no sudden muscular action, such as would dislodge a thrombus, but instead there were gentle rhythmical contractions. A current which produced long wave-like contractions best fulfilled the requirements of such cases, and such an effect was obtainable by the use of the sinusoidal current. The indifferent contacts in her cases were placed over the lumbar enlargement and lumbo-sacral plexus, the negative pole being the active one. The greatest care should be taken not to break contact during the treatment. Her plan had been to use at first a continuous current of about eight milliamperes, and afterward a sinusoidal current, each sitting lasting only a few minutes. The treatment should be instituted in the acute or the subacute stage. The dose must be small at first in the cases coming under treatment early; often it should be less than five milliamperes. In the cases reported by her the duration of the treatment was about three months, but the improvement was often decided after one week. As a rule, the improvement was much more rapid in the first part of the treatment.

The Diagnostic and Therapeutic Relation of Electricity to Disease of the Central Nervous System.—Dr. A. D. Rockwell, of New York, read this paper, the special object of which was to correct some misconceptions regarding the limitations of electrical treatment in this class of cases. He said that when farado-muscular contractility was lost, or was greatly diminished, it pointed to a probable degeneration of the muscular fibre, which was most likely the result of impaired nutrition between the anterior cornua and the peripheral nerve distribution. A question which was often asked regarding cases of hemiplegia was, "Will electricity hasten the absorption of the blood clot?" His answer was that clinical experience had demonstrated so conclusively the great therapeutic value of galvanization of the head that it was difficult to believe that the good results so obtained depended upon reflex effect alone. Theoretically, the absorptive power of the electric current over a distant blood clot must be extremely small, and his own clinical experience had served only to confirm this view. In old cases, however, in which there were atrophy and decreased muscular irritability from disuse, there could be no objection to its employment. If applied longitudinally instead of transversely, unpleasant circulatory disturbances would be avoided, and the electrical treatment did no harm, even if it did no good. Very little was known about spasm of the vessels as a cause of hemiplegia, but he had seen two or three such instances. In spastic hemiplegia electricity not only was useless, but might be harmful. It was in poliomyelitis that electricity found its chief sphere of usefulness. In interrogating the muscles of children it was very important to eliminate pain and discomfort as far as possible. In this connection it was well to remember that in conditions of disease the isolated faradic shock was less painful than were the rapid ones, although this was not the case in health. In infantile paralysis the cells of the anterior horns were destroyed, or were being destroyed, and hence it was often asserted that electricity could not be of any use. The abolition of all faradic irritability meant damage to the nerve endings, which might or might not result in degeneration of the muscular fibre; the latter was determined by the application of the galvanic current.

Dr. G. Betton Massey, of Philadelphia, said that unfortunately there seemed to be a widespread belief that old cases of hemiplegia were good enough for the electro-therapeutist. Formerly he had been misled into using electricity in these forlorn cases, yet after the most persistent and faithful use of it he was free to say that he had never seen any benefit from it in this class.

Dr. Robert Newman, of New York, said that the absorption of the blood clot could be accelerated by galvanic applications. However, to apply the faradic current to the brain, as he had known general practitioners to do, was not only useless but absolutely injurious.

Dr. Francis B. Bishop, of Washington, D. C., said he could not entirely agree with Dr. Rockwell that electro-therapy was of no avail in cerebral hemiplegia. If these cases came under treatment sufficiently early, a good deal could be accomplished. Of course one would not expect to restore the parts that had been destroyed, but much could be done in the way of preventing degeneration of the muscles by keeping them stimulated and in proper tone until the clot had been absorbed. The speaker incidentally referred to an interesting case of hemiplegia with aphasia, in which he thought almost as much good had been done by educating the person to use the left hand as by the use of electricity. The improvement

in this patient had kept pace in a remarkable and interesting way with the education of the left hand in writing.

Dr. Cleaves agreed with the last speaker that, while the results from the electrical treatment of these cases of hemiplegia could not be called brilliant, improvement was observed sufficiently often to be encouraging. Referring to the question raised by the author of the paper, as to whether the current really reached the brain, she thought this could be answered in the affirmative, for the electrical conductivity of the human body was dependent upon the salts contained in the tissues, especially in the blood-vessels, and the brain was richly supplied with blood.

Dr. Henry McClure, of England, said that, while it was admitted that some cells had degenerated, it should not be forgotten that electrical treatment might prevent other cells from degenerating. He agreed with Dr. Massey that there was not the slightest improvement from electro-therapy in old cases of hemiplegia. He had seen several cases of long-standing poliomyelitis improve decidedly, and he believed that in all cases the constant current was indicated.

Dr. Rockwell, in closing, said that he could, if desired, present an extensive and interesting array of clinical results in cases of infantile paralysis treated electrically.

New Uses of the Undulatory Current in Gynæcology.—Dr. Georges Apostoli, of Paris, France, sent a paper on this subject. After describing a new apparatus for producing wave increase and decrease in the galvanic current, giving a voltage of from fifteen to twenty-five and a frequency of eighteen hundred to twenty-five hundred a minute, he stated his deductions from an extensive clinical test of the action of this current. The undulating current, he said, was a powerful analgesic, but its action was fairly localized. Dysmenorrhœa had been uniformly improved by it, so that patients who formerly had been compelled to resort to morphine at each menstrual period had been enabled to do without morphine and pass a painless period. With feeble vaginal applications of this current, hemorrhages had been aggravated. Indeed, in cases of hemorrhage the results with the undulating current had been inferior to those obtained with the galvanic current. In cases of constipation the undulatory current had usually caused a decided amelioration, and the results had been better from intra-uterine than from vaginal applications.

Dr. Massey said that a number of years ago, in a paper read before the Philadelphia Obstetrical Society, he had called attention to the excellent results that might be secured in cases of dysmenorrhœa by intra-uterine electrical applications during the period. At such times the uterus was invariably found to be open, and any physician making such applications would soon become sceptical concerning the so-called mechanical theory of dysmenorrhœa.

Electricity in the Treatment of Uterine Fibromata.—Dr. Felice La Torre, of Rome, Italy, sent a paper with this title, which was read by the secretary. He stated that myofibromata, not being malignant, should not be interfered with until they gave rise to serious symptoms. Electricity did not cause a fibroma to disappear, but it certainly relieved the pain and other distressing symptoms, and controlled the hemorrhages. It was valuable in interstitial or submucous fibroids when operation was not advisable. In cases of intra-uterine polypi galvanization tended to the formation of a pedicle. Before resorting to a cutting-operation for the relief of a patient suffering from a uterine fibroma, the general practitioner should give galvanization a fair trial. It lessened the physical suffering by calming the pain, and it restored the strength of the individual.

Electricity Employed in Gynæcology.—Drs. Georges Gautier and Larat, of Paris, France, sent a communication on this subject, which dealt in a general way with its more important features.

The Treatment of Uterine Fibroids by Small Currents Administered Percutaneously.—Dr. Richard J. Nunn, of Savannah, read this paper. After a vigorous plea for greater conservatism in all gynæcological treatment, the author spoke of his method of employing small currents percutaneously, avoiding altogether their cauterizing power. Such treatment, he said, could be carried out with inexpensive apparatus, and the method was well within the reach of the mass of general practitioners. Block tin was the best substance for the electrode, but he had employed, with much satisfaction, sheet lead. The milliamperemeter was not necessary, although an interesting refinement. With a cheap pocket compass and a little ingenuity one could extemporize a useful instrument, for the chief information needed was the fact that a current was actually flowing, and in what direction. His own observations with this method of treatment had extended from 1880 to 1890, and his results had been quite satisfactory, in spite of the fact that the exigencies of a country practice had rendered it necessary for his office nurse to make a large number of the applications.

Dr. McClure said that this interesting and practical paper brought up the important question as to how electricity acted. It had been taught that it acted as a caustic, yet Dr. Nunn's results certainly could not be explained in that way. Some years ago the speaker had endeavored to answer the question by supposing that it produced an effect—"a strain"—like that produced when electricity passed through a dielectric. The electricity, as it were, became entangled in the dielectric tissue. In this way it was possible to understand that a compression might be produced in the uterus, and that this might, in turn, lead to fatty degeneration. His theory was that on cathode closure the molecules were put on the stretch.

Dr. Nunn said that the tumors were amenable to treatment of this kind almost in proportion to their density: the harder the tumor the less the effect.

Menorrhagia and its Treatment by Weak Currents and Intra-Uterine Positive Silver Electrodes.—Dr. Adelstan DeMartigny, of Montreal, sent a communication on this subject, in which he advocated treatment, for five or ten minutes once or twice a week, in the intermenstrual period. The patient, he said, quickly became less nervous and the appetite improved. As a rule, the second period was much better and the third was almost normal, but the treatment should be continued for two or three months longer, the electrical applications being used only once or twice a month. The fact that the same results were not obtained with a platinum electrode lent some strength to the belief that the good effect was due partly to the formation of the astringent oxychloride.

Second Day—Wednesday, September 14th.

The Method for Using Cataphoresis in Certain Forms of Conjunctival Inflammation.—Dr. Lucien Howe, of Buffalo, read this paper, and presented several patients to illustrate what he had to say regarding the effect of cocaine and of a solution of suprarenal extract in reducing intense congestion of the conjunctiva. He said that it had been known for some time that if a five-per-cent. solution of the extract of the suprarenal capsule was instilled into an eye in which the conjunctiva was engorged, this engorgement would be quickly relieved. This solution of the extract, as ordinarily made, decomposed very quickly. Dr. Hubbard had recently devised a plan of

mixing the extract with a preservative, and of compressing it into discs which would keep indefinitely. But even with the suprarenal extract it was often impossible to obtain the full contracting effect; therefore cataphoresis was of decided advantage in connection with the use of either the suprarenal extract or cocaine. In glaucoma, for example, if both suprarenal extract and cocaine were used a better effect was obtained, but the result was still better if cataphoresis was called to our aid. The negative pole was applied to the outside of the lid, and the positive pole to the conjunctiva by a suitable electrode. The current should be very weak, for one of even half a milliampere would cause pain. The electrode which Dr. Howe employed, and which was found to be superior to the ordinary eye-cup electrode, was shaped like a shallow spoon. This spoon contained blotting-paper or a thin layer of cotton, thoroughly wetted.

Dr. Cleaves said that she had utilized the cataphoric treatment with oxidizable electrodes in conjunctivitis and trachoma, using silver, copper, and zinc at the positive pole, and securing the transference of the nascent metal into the conjunctiva. In one inveterate case of trachoma, observed jointly by a well-known New York ophthalmologist and herself, a complete cure had been effected. In conjunctivitis the silver electrode always acted most charmingly, and even long-standing cases might be cured.

Dr. Rockwell said that for many years he had used a glass electrode filled with clay and applied to the eye. He had seen good results follow the use of considerable current strength. He had employed cataphoresis extensively in the removal of hair, and had found that by using cocaine cataphorically this ordinarily disagreeable treatment could be made painless. Recently, however, during the application of cocaine in this way, the patient suddenly became unconscious and nearly died.

Dr. Massey said that, as Dr. Howe used a brass electrode connected with the positive pole, there was necessarily a cataphoric action of the brass, in addition to that of the cocaine. He thought the use of pure mercury preferable to the use of a sublimate solution. A gold needle might easily be amalgamated with mercury and used for this purpose. Of course, a minute portion of gold would be introduced cataphorically, but the quantity was so small with such mild current that it might be neglected.

Dr. Howe, in closing the discussion, said that with a lid of a certain thickness we did not know as yet just what current was necessary to produce any cataphoric action that could be demonstrated. If we could obtain some ocular demonstration, such as the formation of the blue iodide of starch, we could more nearly approach exactitude. He had endeavored to pass iodine or starch into the globe of the eye and obtain the characteristic color, but without success. In connection with this subject of cataphoresis of the eye, Dr. Howe exhibited, in the person of a boy, a remarkable and unique case of streptococcus inflammation, which had existed for three years and had resisted all other known methods of treatment. Under cataphoric treatment with a strong sublimate solution, the case had, for the first time, made satisfactory progress.

Electricity in Deafness and Stricture of the Eustachian Tube.—Dr. Robert Newman, of New York, described this method of treatment as employed by him. The electrode he used was an ordinary Eustachian catheter, with one inch of the distal end replaced by a silver tip shaped like an olive. This metallic tip of the catheter was connected with the negative rheophore, and the instrument was then introduced into the Eustachian tube down to the stricture. A current of a strength of from one to three milliamperes was turned on, and the obstruction overcome by electrolysis. Cases treated by himself and others were cited to show that electrolysis could cure stricture of the Eustachian tube.

Dr. Lucien Howe objected strongly to this treatment: (1) Because of the great difficulty in diagnosis; (2) because it had been shown that the pathological changes were not in the tube; and (3) because he considered the instrument employed a dangerous one. He said that nothing was more difficult than exactly to diagnosticate stricture of the Eustachian tube, except in certain very ephemeral forms. Moreover it was known that the pathological changes were not in the tube but elsewhere. Other changes than stricture of the tube were present in the later stages; Politzer had recently shown that in some cases that had been treated for years as cases of closure of the Eustachian tube there had been an ankylosis of the stapes. Owing to the very close proximity of the carotid artery, the introduction of the catheter was dangerous. Indeed, he could not understand how so large an instrument as the one exhibited could be passed sufficiently deep to reach the stricture.

Dr. Rockwell said he could confirm what the last speaker had said about the difficulties of diagnosis in these cases. His own opinion, founded on practical experience, was not in favor of the electrolytic treatment of cicatricial contractions, wherever found; and, while he admitted that negative was not considered as valuable as positive evidence, it was in his power to give very positive illustrations concerning the positive failure of electrolytic treatment of stricture, drawn not only from his own experience but from that of other and well-known clinical observers. It had not yet been thoroughly established that currents of from three to ten milliamperes were capable of favorably affecting cicatricial contraction.

Dr. Cleaves said that these differences of opinion regarding the value of the continuous current in overcoming strictures were dependent upon the degree of inflammatory deposit in the cases treated by the different observers. She was confident that recent products of inflammatory action could be removed by the tiniest current, but she did not believe the current would act beneficially when the inflammatory products had become firmer and partook more of the nature of cicatricial tissue.

Dr. Newman closed the discussion. He reminded those present that he had compiled seventeen hundred and fifty-five cases of stricture that he had successfully treated by electrolysis, and a committee of this association had examined these records and confirmed them. Regarding the objections of Dr. Howe, he would say that the instrument should be used only by skilled hands, and if the one exhibited was dangerous then the ordinary Eustachian catheter was dangerous. The diagnosis in his cases had been made by an accomplished aurist. Electricity did not act by dilatation but by absorption, hence no force was used.

Electricity in Acne Vulgaris and Acne Rosaceæ.—Dr. Grover W. Wende, of Buffalo, read this paper. He said that many cases of acne were due to sluggishness of the integument itself. This condition was to be combated by electric stimulation and irritation with sponge electrodes, or by electrolysis with the ordinary electric needle. In the use of electrolysis the pustules should not be opened; a solution of continuity was to be avoided. The electrodes were covered with moistened absorbent cotton, and their position was frequently changed until the desired area was well reddened. The strength of the current was regulated by the ability of the patient to bear pain. Usually five to ten cells were required, and the application should last for fifteen or twenty minutes. When there were indurated papules, it was sometimes ad-

visable to puncture the lesion in the centre with an irido-platinum needle attached to the negative pole. A current strength of from one to four milliamperes was usually sufficient. In one inveterate case he had made these punctures on alternate days for three months, and had effected a complete cure. Acne was often dependent upon sympathetic and circulatory changes in the integument. In the treatment of acne rosaceæ he had adopted Hardaway's plan of treating the hypertrophied blood-vessels. This consisted in attaching a needle to the anode and connecting the cathode to a bowl of water. The patient was directed to place one or more fingers in the water. Not more than three or four vessels should be treated at one sitting, and the same locality should not be treated more often than once a fortnight. A current strength of three or four milliamperes was sufficient. If the applications were carefully made, there would be no cicatrices.

Dr. Massey advised the use of larger and more widely separated pads in the treatment of acne vulgaris of the face. The pad might be easily constructed of wet absorbent cotton, over which a plate of soft metal was to be laid. If the cotton was thoroughly saturated perfect coaptation would be secured. If large areas were simultaneously treated, it would probably be necessary to use a current of considerable strength. He suggested that cataphoresis might prove a valuable adjuvant to the treatment of acne by electricity.

Dr. Cleaves said that in the treatment of acne the indifferent electrode (which should always be the positive) should be placed at some point which interposed the least resistance—usually the nape of the neck. A labile application should be made with the negative pole. Many cases of acne vulgaris yielded to an application of a slowly interrupted induced current—about twenty or thirty interruptions a second. Dr. Cleaves said that she had succeeded in curing some very obstinate cases of acne by the use of the induced current and attention to the general health. In one exceedingly stubborn case success had been achieved by the use of metallic cataphoresis with copper.

Dr. Emil Heuel, of New York, said he could confirm what had been stated regarding the freedom from scars in the electrical treatment of nævus. In one severe case he had obtained a cure after twenty-five sittings of five minutes each, using a current of from three to five milliamperes.

Dr. Alfred T. Livingston, of Jamestown, N. Y., said that his own experience was that electrolysis need not be followed by cicatrices when employed on the surface, as in the removal of hairs or of nævi. This was probably to be explained by the increased circulation and consequent improvement of the nutrition of the part. He found that moist clay allowed the use of a much stronger current than did moist absorbent cotton.

Dr. Wende, in closing the discussion, said that the prime requisite was to secure stimulation, and it did not seem to him that this was well attained by the method described by Dr. Massey. He believed that in acne there was a loss of tone and of contractile power of the sebaceous duct. As to the formation of scars, he said that as long as the operator kept out of the subcutaneous tissue there would be no scarring; on the other hand, if the subcutaneous tissue was destroyed, scarring could not be prevented.

Lightning Stroke and Eye Disease.—Dr. Ryerson, of Toronto, deputy surgeon-general, made some remarks on this subject. He said that these cases were quite rare, yet he had seen two instances in which eye trouble had followed lightning stroke. Seven or eight years ago, while a farmer and his wife and child were in bed, they were struck by lightning. The child was killed instantly; the father died in a few days, and after a time the woman, who was only twenty-five years old, became nearly blind. When he first saw her he found a soft cataract. In the course of a few weeks this matured, and after a month or two he made a satisfactory extraction in each eye, thus restoring vision. He had seen her very recently, and she could still see very well. The second case was that of a woman who, during a severe thunder storm, went to the door just as there was a blinding flash of lightning. When she was seen by him shortly afterward at the Toronto General Hospital, there were wide dilatation of the pupil of each eye and a very intense congestion of the conjunctiva and lids. She could not even perceive light. Under treatment, consisting chiefly of strychnine internally and eserine locally, she gradually improved.

High-Tension Current in Neuritis.—Dr. Francis B. Bishop, of Washington, D. C., read a paper with this title. He said that he was not opposed to the very careful use of the galvanic current in neuritis, but it seemed to him that better results were obtained by the high-tension current. The galvanic current followed the lines of least resistance, but this was not always the case with the high-tension current, and the higher the tension the more difficult it was to insulate the conductors. He had never used the static spark in these nervous patients. The voltage of the static current was known to be very great. Thus, Professor Trowbridge had asserted that an *x*-ray tube could not be properly excited by a voltage of less than 100,000. Dr. Bishop said that he had treated a number of cases of localized neuritis with the static current with perfect success, and even those treated with the current from a high-tension coil had been distinctly improved.

Dr. Massey said that in a number of subacute cases he had gotten very poor results from the galvanic current. On the contrary, the spark treatment in the chronic cases had been invariably successful in his experience, and he was convinced that high-tension applications were indicated in all forms of neuritis.

Dr. Cleaves agreed with the reader of the paper regarding the value of the high-tension current. Personally, she had used the convective discharge of a brush electrode, the applications being made for the general nutritional effect and also along the nerve. She recalled a case of ascending neuritis in which the suffering was so great that the patient had passed many sleepless nights. Immediately following the use of the high-tension current, the first good sleep was secured. The speaker said that she never used the galvanic current in these cases.

Dr. Bishop, in closing, said that he took the current from a shunt on one side of the machine. He did not claim anything special for the method described in the paper, except that it was agreeable and efficient and that the vibration was very rapid. As to the comparative merit of his method and the current obtained by the convective discharge, he would only say that in one case, after failing to observe any benefit from the use of the convective discharge, he changed to the method just advocated by him, and was pleased to note immediate and marked improvement.

Electricity in the Treatment of Goitre.—Dr. Charles R. Dickson, of Toronto, presented in this brief paper a synopsis of his views regarding the treatment of goitre electrically. In exophthalmic goitre he favored percutaneous applications with mild currents daily, the patient being in the recumbent position as far as possible. In engorged conditions of the thyroid he preferred to place the positive pole on the abdomen or shoulder, and make a percutaneous application over the thyroid for five or ten minutes. In slighter forms of hypertrophy he used an electrode the size of the goitre, with current strengths up to the

limit of tolerance. In the larger thyroids he aimed at destruction of the tissue with the negative pole, and the formation of a cyst within the goitre. In cystic goitres he evacuated the contents, refilled the goitre with saline solution, and made this the negative electrode. At the conclusion of the *séance* the fluid was evacuated through a drainage tube, and compression was carefully made and maintained. His aim was the obliteration of the cyst. Diet, medication, and hygiene were all-important factors in the treatment. Electro-puncture of the thyroid was a procedure requiring the greatest care.

President's Address.—Dr. Dickson, in delivering his address, aimed to make it clear to the general public that electro-therapeutics was a live subject, that it was not properly taught in medical schools, and that therefore the American Electro-Therapeutic Association had an important mission.

Ten-Minute Talks upon Electro-Therapy.—This feature of the programme was introduced by the statement of the president, that the object was to present in a condensed and practical form, free from technicalities, the salient points of electro-therapy which were likely to prove interesting and instructive to the general practitioner. A special effort had been made by the committee of arrangements to secure the attendance at this time of members of the medical profession living in Buffalo.

Functional Diseases of the Nervous System Treated by Electricity.—Dr. A. D. Rockwell presented a paper with this title, in which he dwelt more particularly upon neurasthenia. He said that the first thing in the treatment of a neurasthenic was to gain the patient's confidence. When he relied upon such drugs as the bromides, particularly the bromide of zinc, he depended chiefly upon electricity. Neurasthenia being a disease of exhaustion and malnutrition, there was every reason why electricity should be useful. Neurasthenia in the majority of cases was functional, and was generally curable. Electricity in neurasthenia increased cellular activity and favored the elimination of toxins. Traumatism or shock was capable of producing loss of conductivity through the neurons.

The Galvanic Current in Gynæcology.—Dr. G. Betton Massey read this paper. He asserted that the intelligent application of electricity would render unnecessary four-fifths of the major and minor surgical operations now performed on ambulatory cases of diseases of women. Irregular menstruation and menorrhagia could be so easily relieved by electrical treatment that he regarded with horror the prevalent treatment by dilatation of the cervix. The Apostoli technique was capable of curing at least eighty-five per cent. of cases of uterine fibroids, while the remaining fifteen per cent. were made neither worse nor better by the treatment.

Dr. F. B. Bishop said that when the condition was purely one of ovarian congestion and inflammation, without pus formation, his results from electrical treatment had always been excellent. He favored treating imperfectly developed pelvic organs by the current from a coil of eight thousand feet of wire, using the tension of the entire coil.

Dr. Massey said that while he agreed with Dr. Bishop about the superiority of the faradic current over the galvanic current in many cases, he had often used the galvanic current because of the associated ovarian neuralgia and menorrhagia. His practice was to apply the current by the usual vagino-abdominal method. One should not lose sight of the possibility of saving very many women who were now remorselessly subjected to mutilating operations. The pelvic organs were removed, and their removal was justified because there was a little inflammation present; whereas no such radical measures would be tolerated in entirely similar pathological conditions in other parts of the body. It sometimes required prolonged electrical treatment—possibly six months or more—yet he had never failed to cure such cases, and they were entirely within the domain of the general practitioner. He advised the use of a large cotton-covered electrode connected with the positive pole, and a current of fifty milliamperes for five minutes at a time. In ordinary cases of metritis from twenty-five to sixty or more applications were required.

Electricity in Genito-Urinary Diseases.—Dr. Robert Newman presented a brief paper giving a general view of this subject. He stated that most of the urethral strictures coming under his observation had involved the submucous tissues, yet, strange to say, Dr. Gouley absolutely denied the existence of anything to be absorbed. In the treatment of hypertrophy of the prostate by the galvano-cautery the applications could be made either through the urethra or through the rectum.

Orthopædic Uses of Electricity.—Dr. Louis A. Weigel, of Rochester, read a paper with this title. He said that there was no distinct branch of electro-therapeutics which was applicable to orthopædic surgery. In cases of infantile paralysis the function of the orthopædic surgeon was supposed to be to devote all his energies to the correction of existing deformities or to preventing the occurrence of such deformities. The neurologist often made the mistake of treating his cases by electricity, irrespective of the mechanical conditions present. As a consequence of disturbed equilibrium deformities were almost sure to follow, and hence, while electricity was a useful adjuvant, if only one method of treatment could be employed, the more important one was the mechanical treatment. In most cases of spastic paralysis operations were necessary. In most cases of lateral curvature electrical stimulation of the muscles was a useful aid. In the painful affection of the foot known as metatarsalgia, Morton claimed that there was a pinching of the nerve by the dragging down of the arch. None of the radiographs that Dr. Weigel had made, however, showed any such pinching. Flatfoot was another condition in which electricity was useful. Dr. Weigel then exhibited a large number of radiographs that he had made, and which illustrated the value to the orthopædic surgeon of this new surgical resource. Incidentally, he said, it was worth noting that he had used the static machine for *x*-ray work for over a year and a half, and had never produced the slightest *x*-ray burn. The exposures had varied in length from forty-five minutes to one hour. In no instance was the tube nearer to the subject than eighteen inches, and this he considered to be the secret of his complete immunity from such accidents.

Treatment of Malignant Growths by Means of Electricity.—Dr. G. Betton Massey gave a brief account of his method of treating malignant growths by mercurial cataphoresis. He said that the cataphoric transmission of nascent oxychloride of mercury and zinc from the electrodes introduced into the tumor furnished the means of carrying the destructive agent to any desired distance. Of course, the electrode was dissolved in the process. The patient was placed under ether. Very heavy currents were used. Thus, in a case in which half of the breast was involved, Dr. Massey would use one thousand milliamperes transmitted for about one hour, with occasional remissions so as not to interfere too much with the action of the diaphragm and of the heart. A large slough separated, as a result of the treatment, but it remained aseptic even for weeks at a time, because of the large quantity of mercury that had been introduced into the tissues. In order to have a pure mercurial cataphoresis, he now

employed a gold electrode. He was not content with simply amalgamating it, but had a contrivance by which a teaspoonful or more of mercury could be injected. He endeavored at one time to recover, by electrolysis, the mercury from the urine, but failed to do so. However, the mercury evidently got into the system, for several of his patients complained of tender gums, and unquestionably a number of them had been salivated. If the mercurial cataphoresis was tried upon a piece of meat, it would be found that the mercury was carried in only to a distance of three or four inches.

Surgical Uses of Electricity.—Dr. Charles R. Dickson, in a brief communication with this title, narrated in an elementary way what the general practitioner might expect to accomplish in this field with electricity. Thus, it might be used to promote absorption, to block up capillaries with bubbles of hydrogen, and to remove hair and small nævi from the face without causing visible scars. As to the mode of absorption, he stated his belief that fibrous tissue was never absorbed as fibrous tissue, but must first undergo fatty degeneration. Electricity might, however, give the appearance of having caused direct absorption by giving rise to atrophy of the fibrous tissue.

Third Day—Thursday, September 15th.

The Alternating Dynamo Current.—Dr. F. B. Bishop presented a paper in which he described a simple step-down transformer for use in this connection. He said that he had treated several cases of writer's cramp with this current. The patients had been previously treated with the galvanic current, and of their own accord had spoken of how much easier they felt after the alternating current. By means of the transformer the voltage was reduced from 104 to 4. The patient placed both hands in jars containing warm water in which salt or soda had been dissolved.

The Electric Arc Bath: A Clinical Report.—Dr. Margaret A. Cleaves presented in this report detailed clinical accounts of cases treated by the electric arc bath. Among these were cases of eczema, psoriasis, bronchial asthma, and pulmonary phthisis. Her observations in connection with the last-named disease were especially interesting. As she very pertinently remarked, it had long been known that sunlight was inimical to the growth of tubercle bacilli, and the value of sun baths had been demonstrated again and again. The electric-light bath closely approximated the sun bath, and, in addition, there was the production of ozone. A greater quantity of ozone was generated from the alternating current. She preferred the arc light because of this production of ozone, and also because of the fact that the rays from this light embraced a large part of the violet end of the spectrum. There could be no doubt, she said, that in man, as in plants, protoplasmic activity was increased by exposure to electric light. Her cabinet, she said, was six feet long, two and one-half feet wide, and seven feet high, and was lined with zinc, painted white. At each end were glass compartments containing the electric arc lights. The patient reclined on a wire-mattress cot. Each lamp had a reflector which allowed focussing the light on special parts. The patient was preferably nude, and the eyes were protected by dark glasses. The maximum of nutritional activity was usually observed at the end of the second week, and this would be expected from theoretical considerations as to the action of ozone.

Dr. Nunn said that the paper was interesting as emphasizing the old-time truth regarding the sanitary value of sunshine. Of course, where sunshine could be readily obtained, it must be admitted to be superior to artificial light. As modern chemistry had shown the atmosphere to be such a complex substance, it did not seem to him wise to say very much regarding ozone.

Mr. John J. Carty, electrical engineer, suggested that some of the effect might be due to radiation and some to emanations from the arc. In the latter connection it should be borne in mind that the carbon rods were commonly of complex composition, and not pure carbon, and, furthermore, that they were coated with copper.

Dr. F. B. Bishop said that he had had an opportunity of seeing the working of Dr. Cleaves' cabinet, and had been impressed with the rapidity with which the ozone had been generated and its quantity. As he had himself secured some excellent results in the treatment of the early stages of pulmonary phthisis by means of the ozone bath, he was inclined to attribute Dr. Cleaves' success chiefly to the ozone generated in connection with the arc light.

Dr. Massey spoke of the striking effect of sunlight on the vegetable world, and the mistake of modern civilization in so generally excluding the sun from dwellings.

Dr. Cleaves, in closing the discussion, said that she wished it to be understood that she did not know what it was that gave her these good results, though the clinical fact remained. In only the one case reported had there been a complete disappearance of the tubercle bacilli, but in all of the cases so treated there had been gratifying improvement.

Some Suggestions on the Possibilities of Cataphoresis.—Mr. John J. Carty, E.E., of New York, presented this paper, which was founded on some experiments that he had made regarding the use of cataphoresis in the attempt to secure painless dentistry. It did not seem to him that there was any part of the body which physicians should despair of reaching by cataphoric medication. A novel suggestion which he made was to use an O'Dwyer tube as the positive pole, and apply the negative pole to the neck in the form of a collar in cases of diphtheritic laryngitis.

Dr. Massey said that cocaine cataphoresis never failed in dentistry if properly conducted. The principal causes of failure were: (1) improper apparatus; (2) imperfect technique, such as not properly drying the tooth cavity; and (3) lack of willingness on the part of dentists to give the necessary time to the use of this method. The suggestion about using the intubation tube seemed an excellent one, and if this tube was of zinc and was freshly amalgamated at the time, he thought it would prove still more efficient, as the oxychloride of mercury formed was one of the most powerful antiseptics known.

A High-Frequency Oscillation for Electro-Therapeutic Purposes.—Mr. Nikola Tesla, E.E., of New York, in a paper with this title described his now well-known experiments with high-frequency currents, dwelling particularly on the construction of the apparatus and the possibilities of the future in the therapeutic application of this form of electricity.

Officers.—The following officers of the association were elected: *President*, Dr. Francis B. Bishop, of Washington, D. C.; *Vice-Presidents*, Drs. Ernest Wende, of Buffalo, and W. H. White, of Boston; *Secretary*, Dr. John Gerin, of Auburn; *Treasurer*, Dr. R. J. Nunn, of Savannah, Ga.

The next meeting will be held in Washington, D. C., on September 19, 20, and 21, 1899.

Lupus.—

R Salicylic acid	10 gm.
Creosote	20 "
Simple cerate	15 "
White wax	5 "

—Dr. P. J. Unna.

Therapeutic Hints.

Treatment of Gastrorrhagia with Warm Water.—Dr. Tripier (*Le Scalpel*, July, 1898) has used this treatment with marked success. When hæmatemesis or melæna appears in the stools, whatever may be the supposed origin of the vascular lesion, washing with warm water, 48° to 50° C., should be done two or three times daily and repeated more frequently if the blood has a tendency to reappear. The patient should be placed in a horizontal position during the lavage and should make no effort at retention.

Pruritus Ani.—First wash with water of camomile, added to a little saponified coal tar. Then apply oxide of zinc and vaseline, and powder freely with the following mixture:

℞ Camphor..... 2 gm.
Oxide of zinc..... 30 "
Bismuth..... 30 "
Talc..... 40 "

When the irritation has become less, paint every two days with a solution of nitrate of silver, four per cent. One may add to this at night a suppository of cocaine and extract of belladonna.—Brocq.

Pruritus Scroti.—

℞ Bichloride of mercury..... 0.3 or 0.5 gm.
Alcohol..... 25 gm.
Chloroform..... 5 gtt.
Water of camomile..... 25 gm.
Water of wild cherry..... 50 gm.
M. S. Apply.

—Leistikow.

Acute Pneumonia.—Dr. Raven in a paper read before the East Kent District Society concludes that, given a good atmosphere, a good bed, good diet, and good attendance, in the large majority of cases of acute pneumonia patients get well of themselves; and that an exaggerated importance is attached to various methods of so-called curative treatment, whether by ice or heat, brandy or blood letting, antimony or digitalin, or any other opposed plans of treatment.—*British Medical Journal*, June 4th.

Infantile Colitis.—Benefit is derived from hot compresses and from enemata of boiled water injected fairly high up into the intestine, care being taken not to introduce too much fluid at a time. Castor oil is the best kind of laxative for constipation. The diet should consist of light soups, well-stewed fruits, boiled fish, boiled eggs, and milk combined with magnesia. Warm douching, accompanied by friction, seems particularly good in some cases, but the abdomen should not be douched.—*Thèse de Paris.*

Tæniafuge.—

℞ Amorphous salicylic acid..... gr. vi.
Ethereal oil of malefern..... ♏ ix.
Essence of cinnamon..... gtt. x.
Gum arabic..... ʒ ij.
Distilled water..... ʒ iij.
Simple syrup..... ʒ iss.
M. S. To be taken fasting in the morning in two divided doses at an interval of an hour.

—Van Aubel, *Gazz. degli Ospedali e delle Cliniche*, May 19th.

Uncontrollable Vomiting in Pregnancy.—Dr. Geoffroy (*Le Scalpel*, January 1, 1898) indicates a new method of treatment based on the employment of very gentle massage. This author, who has for a long time employed prolonged palpation in the treatment of affections of the digestive tract, has observed in several cases of uncontrollable vomiting that there existed at a point in the digestive tract a localized spasm transferred by reflex irritation from the uterus. This spasm, according to Dr. Geoffroy, was localized at two points: first, at the junction of the stomach with the duodenum; second, at the point well down in the left iliac fossa, at the posterior part of this fossa at a point which is never any other than the ileo-pelvic angle of the colon, formed by the union of the fixed iliac part of the colon with the movable pelvic part. This spasm causes a permanent state of contraction, which deep palpation readily discloses. This peculiarity is for the writer so characteristic that when he encounters it in a woman who vomits or who has a cessation of the menses he diagnoses pregnancy. This contraction is encountered in subjects affected with various gastro-intestinal troubles, neurasthenia, the beginning of appendicitis, etc. It is a pathognomonic sign of reflex hyperæsthesia of the intestinal canal, of which the morbid symptoms vary from those produced by mild cardiac disturbances and simple nausea to uncontrollable vomiting. By using precautions to avoid pain in making gentle pressure, both slow and progressive with the ball and not with the extremity of the fingers, one can perceive at the point mentioned a series of nodules, ordinarily very small, which are hard and resisting, but which become softened in proportion as the digital pressure is gentle, slow, and progressive. There is a sensation of gas and of liquids under the fingers, with a slight gurgling, generally perceptible to both the physician and the patient. The induration ceases, the nodules disappear, and the discomfort that they have excited is replaced by a sensation of well being and an inclination to rest, which indicate that the time has come to suspend the treatment. In the first case in which the author applied this treatment, five or six séances were requisite to effect a complete cure. In general, two or three séances, sometimes only one, cause the vomiting to cease. It is useless to prolong the treatment in order to avoid a return of the trouble. The method is useful in all cases if properly applied, and is perfectly harmless.

"Death to Corns."—

℞ Ext. of cannabis indica..... 1
Salicylic acid..... 10
Oil of turpentine..... 5
Glacial acetic acid..... 2
Cocaine (alkaloidal)..... 2
Collodion..... q.s. ad 100
M.

Apply a thin coating every night, putting each coating on top of the preceding one, until finally the whole drops off, bringing the indurated portion, and frequently the whole corn, with it.—*National Druggist*, November, 1897.

Neuralgia of Phthisis.—

℞ Guaiacol,
Methyl salicyl..... āā 5
Vaseline,
Lanolin..... āā 15
Extr. belladonnæ..... 0.20
Extr. thebaici..... 0.25
M. S. Apply to the surface a small quantity.

Or:

℞ Guaiacol,
Methyl salicyl..... āā 4
Menthol..... 1
Potassii bromidi..... 5
Antipyrin..... 2
Ol. terebinth..... 6
Vaseline,
Lanolin..... āā 15

—Capitan, *Klin.-therap. Wochenschrift*, April, 1898.

Acute Inflammation of Upper Air Passages.—

℞ Eucaine..... gr. x.
Cocaine hydrochlorate..... gr. x.
Distilled water..... ʒ vi.
S. Use as a spray.

—Dr. H. L. Armstrong.

Rheumatism and Influenza Neuralgia.—

℞ Acidi salicylici,
Ol. terebinth.....āā 6–8
Extr. belladonnæ..... 0.20–0.25
Vaseline,
Lanolin.....āā 15
M. S. Apply twice daily.

—Capitan, *Klin.-therap. Wochenschrift*, April, 1898.

Pertussis.—

℞ Bromoform..... 48 gtt.
Ol. amygdal. dulc..... 15 gm.
Pulv. acaciæ..... 10 "
Aquæ laurocerasi..... 4 "
Aquæ dest.....q.s. ad 120 "
M. S. For children under five years, four drops three times daily. Children from five to ten years, twenty drops daily.

—Marfan, *Jour. de Méd. de Paris.*

Intestinal Antisepsis.—

℞ Naphthol..... 3 gm.
Chloroform..... 15 gtt.
Castor oil..... 100 gm.
Oil of peppermint..... 5 gtt.
M. S. Tablespoonful.

—Dr. J. de Maximovitch.

Migraine.—

℞ Antipyrin..... gr. viiss.
Phenacetin..... gr. iss.
Acetanilid..... gr. ¾
One powder t.i.d.

Or:

℞ Caffeine..... gr. i.
Phenacetin..... gr. iv.

Pertussis.—

℞ Tinct. of belladonna..... 10 gm.
Phenacetin..... 5 "
Whiskey..... 15 "
Fl. extr. of castanea..... 60 "
M. S. For a child under one year, ten drops; up to ten years old, a teaspoonful every four hours.

—Dr. R. A. Lancaster.

Burns.—

℞ Europhen..... 1
Vaseline..... 10
Lanolin..... 10
S. Apply three times daily.

—Dr. S. Nolda.

Ulcers of Leg.—

℞ Europhen..... 3
Vaseline..... 50
Lanolin..... 50

Or:

℞ Europhen,
Powdered boric acid..... āā p. æ.

—Dr. L. Nied.

Psoriasis.—

℞ Ichthyol..... 3 gm.
Salicylic acid..... 3 "
Pyrogallic acid..... 3 "
Olive oil..... 10 "
Lanolin..... 10 "

—Richter.

Vomiting of Seasickness.—

℞ Menthol..... gr. iss.
Cocaine hydrochlorate..... gr. iij.
Alcohol..... ʒ ij.
Simple syrup..... ʒ i.
S. ʒ i. every half-hour.

—Dr. A. Morel-Lavallée.

Leprosy.—

℞ Ol. chaulmoogræ..... 2–5
Ol. amygdal. dulc..... 9–10
Gummi arab..... 15
Syr. aurant. cort..... 30
Aquæ laurocerasi..... 5
Lactis.....q.s. ad 125
M. To be taken during the day in five portions.

—Dalons, *Klin.-therap. Wochenschrift*, 1898, No. 21.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

EAST LONDON WATER FAMINE—OFFICIAL REPORT ON MAIDSTONE EPIDEMIC—ROYAL INDIAN ARMY MEDICAL CORPS—BEHRING'S PATENT—QUACKS PROSECUTED—RECENT DEATHS.

London, September 2, 1898.

East London has again been plunged into the miseries of a water famine. After all the promises of the company which supplies this poor and crowded district and the assurances of its officials and engineers that the new works would suffice to meet all contingencies, a few weeks of warm summer weather are followed by a short supply. This is the third breakdown of the East London Water Company, and those who are unfortunate enough to reside in its district assert that on very short notice the constant supply was cut down to six hours, and those hours were not even specified. To the poor in crowded dwellings this is a terrible hardship, as they have no vessels in which to store water, and if they had their tenements are not fit places in which to expose the drinking-water. A letter in *The Times*, signed by twelve medical men, says that diarrhœa at once greatly increased, and expresses the opinion that the stoppage of the supply will as directly cause the deaths of hundreds as if they were actually poisoned. Of course a medical journal is chiefly interested in the sanitary aspect of such a calamity, and it is impossible at present to gauge the extent or the gravity of a water famine in an enormously overcrowded district, such as is the part of the metropolis at the mercy of the East London Company.

The defence of the company is that the prolonged drought is to blame. Think of it—few weeks of fine weather! As if England never had any summer! That such a failure of the company should occur for the third year is a sufficient answer to the absurd excuse.

Moreover, water could have been procured at first from the other companies, but the directors did not choose to buy it. They are now obliged by the public outcry to incur some expense, and have agreed to pay the vestries which have come to the rescue with water carts for the cost of that help. The difficulty of storage has been reduced by *The Evening News*, which opened a fund for the supply of one thousand three-gallon jars, heading the list with £100. Indignation meetings have been held, tales of misery told, and resolutions passed calling upon the authorities to relieve the grievance and danger to health of the million and a quarter of London's inhabitants who are affected. It is too clear that Parliament made a great mistake in accepting the estimates and assurances of the company after the last breakdown; and yet this company goes on collecting its dues as if its contract had been fulfilled.

Surely after this third failure of the company to carry out its duty the monopoly should be forfeited. Meantime there is a talk of uniting to resist payment of the water rate, on the ground that water was not supplied, and to take a test case through the courts. A summons has already been obtained by one house owner. The chief water examiner and the medical inspector of the government board have visited the district and recommend a free distribution of disinfectants, and the president of the board, Mr. Chaplin, has returned to town to confer with them and others. The sanitary inspectors under the health officers of the districts involved have also made an inspection of the poorer neighborhoods and found an alarming neglect of the drains.

The Whitechapel board proposes a conference of the local authorities, about twelve in number, with a

view to concerted action in an appeal for the infliction of penalties under the railways and canals commissioners act.

Some papers have remarked that the death rate has not risen, but they forget that it is too early for the returns to show the effect on the mortality.

The report of the inspectors appointed by the local government board to inquire into the late epidemic at Maidstone has been issued. It precisely corroborates the statements I sent you at the time. It is true that defects in the general sanitary condition were found, but the water was unquestionably the cause of the epidemic. The Fairleigh Spring was the one contaminated, as was suspected at the earliest stage of the outbreak. This spring offered all the conditions required; it was proved that the surrounding ground was often in a filthy state, and it was unprotected from such contamination. The medical officer, Dr. Adams, had often called the attention of the authorities to the dangerous sanitary state of the town. His recommendations were, unfortunately for the inhabitants, not adopted.

As was anticipated, the warrant establishing the royal army medical corps has been followed by another, issued on Saturday, extending the same organization to the Indian medical services. The two services are therefore constituted on parallel lines.

Much indignation is felt here against Professor Behring for seeking to patent his diphtheria antitoxin. As soon as it was reported that he had obtained a patent in the United States his action became the subject of a lively discussion, and hopes are freely expressed that his claim will be contested in your law courts. If he were to pay us a visit now, his reception would be very different from what it might have been some time since and would not be likely to gratify him.

Two or three quacks have been successfully prosecuted, and a coroner's jury has rebuked a practitioner for sending an unqualified assistant to visit a patient, requesting that the attention of the Medical Council should be called to the case.

One of the quacks had carried on his business for forty-six years, but the Defence Union interfered. He was convicted of using the term surgeon and fined, but the sapient magistrates found that in calling himself doctor he did not wilfully and falsely pretend to be registered. So on that count he got off.

Another person has been fined £5 for using the title of dentist, he not being registered.

The death of a nonagenarian doctor is announced in the person of Miles Astman Wood, M.R.C.S. He had attained the age of ninety-one. He died at Ledbury, where he began practice in 1830. Prior to this he had, after taking his diploma, studied for a time in Paris under Laennec and Dupuytren, and he naturally introduced the stethoscope into his neighborhood. He retired only some four or five years ago.

Among other recent deaths are those of the following: Dr. K. N. Bahadhurji, M.D., of the London University. He was but a young man when he was sent by his Indian colleagues to plead for Indian medical reform at the Carlisle meeting, 1896. He then issued a pamphlet on the medical and sanitary reforms needed in India, and made many converts to his views. He was physician to the first plague hospital in Bombay, and devoted himself to the sufferers during the epidemic.

Dr. Alexander Lindsay, aged eighty-two, on the 14th ult., formerly a favorite lecturer on medical jurisprudence in Anderson's University and examiner at the Glasgow Faculty. He retired about twelve years ago.

Deputy Insp.-Gen. E. W. Bawtree, M.D., died on the 13th ult., aged eighty.

Deputy Surg.-Gen. J. R. M. Lewis on the same date, aged seventy-five.

Deputy Insp.-Gen. J. Pringle, M.D., on the 23d.

Dr. T. F. I'Anson, J. P., of Whitehaven, died on the 19th ult., aged seventy-five. He was one of the oldest, if not the oldest practitioner in West Cumberland. His M.D. was of Aberdeen, 1848, the year in which he was appointed house surgeon to the Whitehaven and Cumberland Infirmary, where he succeeded in due course to the other appointments, at the time of his death being consulting surgeon.

OUR BERLIN LETTER.

(From our Special Correspondent.)

VACCINATION BENEFITS—DISPENSARIES AND PHYSICIANS—FEMALE POLICE PHYSICIANS—ROENTGEN RAYS IN BRAIN TUMORS—TR TUBERCULIN.

BERLIN, August 26, 1898.

SOME interesting statistics have recently been published bearing upon the history of small-pox in Germany. The opponents of vaccination claim that the disease never was entirely eradicated, but that, like a "creeping fire which is covered with ashes," it has lived on in spite of all measures taken to check it. According to exhaustive researches, it has been proved that the few isolated cases appearing in Germany have invariably been brought into the country from some foreign place not so well protected. From the following it can easily be seen how great the protection is. During the year 1896 only ten deaths from small-pox occurred in Germany, in other words, 0.19 per million inhabitants. While this exhibit is a gratifying indication of the benefits of State medicine in saving lives and lessening disease, the offset to the physician is not made in other desirable directions. In all matters connected with the welfare of the people he necessarily takes an unselfish part, and, from a purely business point of view, damages his own pecuniary interests. This he willingly does for the public good. In accordance with the law of compensation, however, he should be protected in other directions and be assured by the State a decent and competent livelihood. The contrary seems to be the fact when we reflect upon the abuses of medical charity which are making him poorer every year. The recently published annual report of the Berlin University clearly shows that during the past year the dispensary system has swollen into enormous proportions. The following figures give the number of patients treated in the various departments: Surgical, 17,643; medical, 11,254; eye, 12,443; gynæcological, 11,346; nose and throat, 3,411, etc. Besides this there were 2,857 confinements attended free by polyclinic physicians within the city limits. If we consider that almost every specialist has a private polyclinic, that the "sick-funds" take in a large part of the population, that quackery, especially in Berlin, has a large following, one can easily appreciate how hard the fight is for a physician who is literally struggling for his daily bread.

A new and keen competitor is also at present threatening the physician, in the shape of the fairer sex; although until lately no female could attain governmental recognition as a physician. All those practising medicine here have obtained the diploma elsewhere, principally in Switzerland. They have been employed in the police department in order to examine such women as are arrested on the street on the suspicion of prostitution. It once happened that an innocent girl was arrested and had to undergo the mortification of exposing herself to male physicians. In order to prevent in future such an occurrence, the above step was deemed advisable, that the modesty of such girls may be preserved. Only the first examination is to be

made by female physicians, and their services are dispensed with in the subsequent ones. By rights, according to the existing regulations, a female physician cannot be intrusted with this function, as only governmentally approved medical men are properly qualified. But this prohibition is easily evaded, as the secretary has the right to approve the appointment of any person who has distinguished herself by scientific work. Whether or not all the female physicians from foreign countries will distinguish themselves through significant scientific work must, naturally, be left to the judgment of the secretary. Although it is of little practical importance whether a male or a female physician carries on the police physician's duties, still it establishes a precedent which is not to be passed over so lightly.

In view of the present August heat the prominent medical societies have closed their doors until the end of September. At the last meeting before vacation of the Society of Charité Physicians, Professor Heubner demonstrated the Roentgen pictures of a brain tumor. The case treated was that of a child four years and four months old, of prodigious development. Besides the presence of choked disc, paraplegic symptoms and heightened patellar reflexes were found. How enormously rapid the child grew is shown by the following data: on July 4th the child's height was 108 cm., while on July 22d, two weeks later, it was 109.4 cm. The Roentgen picture showed an abnormal shadow starting in the region of the sphenoid bone and spreading out on both sides to near the parietal bones.

As a contribution to the TR tuberculin controversy, Dr. v. Zander reports the case of a patient who suffered from infiltration of the left upper lobe, catarrh of the right apex, and laryngeal ulcers, and in whose sputum many tubercle bacilli were found. He received altogether 59.5 mgm. of the substance; the temperature remained under 37° C., and he gained fifteen pounds in the course of the treatment. At present the scars of the laryngeal ulcers are hardly visible, and only here and there a bacillus can be found in the sputum.

In order to obtain good results with TR it seems to be necessary to be careful in the selection of the cases and also to follow Koch's directions implicitly. But we must always bear in mind that similar results are obtained with purely hygienic and dietetic measures.

MATERNAL IMPRESSIONS.

To the Editor of the Medical Record.

Sir: In the Medical Record of September 3, 1898, I was moved by the report of another "maternal impression" case, which serves to remind us that this same pestiferous hobgoblin is still extant. No greater fallacy ever infested the mind of man than this popular superstition concerning prenatal impressions.

The belief that if the pregnant female is frightened by a one-legged man the fœtus will suffer an amputation *in utero* of one of its legs, or that if the mother is scared by an innocent hare she will give birth to a hare-lipped offspring, is utterly without foundation; yet these stories are almost daily thrust upon us and usually regarded as judgments of Providence. While harelip and a few other of the common deformities are marks of hereditary degeneration or lack of development, the majority of them are mere accidents that happen to the fœtus as a result of traumatism or disease. I have seen grandmother, son, and grandson afflicted with harelip. Can any person argue that these were the result of fright? I have investigated a number of these cases and have invariably failed to find any substantial evidence that the results were traceable to maternal impressions. I am acquainted with a lady who, when five months pregnant, was assaulted by a tramp, which so frightened her that she screamed and sank to the ground and was unconscious three days. In due time she gave birth to a boy, a model of perfection in form. Observation teaches that there are at least ten infants with birthmarks whose mothers were not frightened at anything, where there is one with a history of fright. Recently I delivered a child with acrania whose head and face very much resembled a frog. There was no history of fright, but there was a history of a case of hydrocephalus and of two or three idiots among the near relatives.

The fœtus is practically a foreign body with no nervous connection with the mother; and it is impossible that the mother's mind could affect the offspring any more during gestation than during lactation. Human teratology teaches that all these congenital anomalies are traceable to natural causes, and any other explanation belongs to the "mystic and frightful domain of witchcraft and demonology." It is no easy task to untrammel the mind from this deeply rooted superstition; yet if one will zealously investigate these birthmark cases, his efforts will be amply rewarded by unearthing some of the most laughable incongruities.

James E. Pierce, M.D.
Middletown, Ind.

SOME PECULIAR MENTAL IDIOSYNCRASIES.

To the Editor of the Medical Record.

Sir: At times certain abnormal mental phenomena become manifest in individuals otherwise normal. These deviations, while not common to all people, are nevertheless not inconsistent with physical and mental stability. Let me cite a few examples. The peculiar nervous effect manifest in some individuals when touching velvet or the skin of a peach, producing a feeling of chilliness (cutis anserina), is wholly a reflex nervous phenomenon difficult of accurate interpretation. That this singular nervous effect is not dependent on any inherent property in the peach itself is proven by the fact that the same phenomenon or sensation of chilliness is not produced when the peach is peeled. While such an individual will handle and eat a peeled peach, he has a veritable aversion for an unpeeled one, and the mere thought of eating a peeled peach on which there may be still adherent a piece of the skin may produce the disagreeable sensation. These cited examples of mental eccentricity are of not so rare occurrence, and possess as much physiological as pathological interest, since the sensation of chilliness (cutis anserina) is produced independent of any existing disease. Now, to cite another singular example, I have seen in a boy and a girl, members of the same family, whose ancestors were free from serious nervous disease so far as could be determined, a singular impulse to touch the door a certain number of times before leaving the house; or if they happened to drop an object on the floor they would alternately pick it up and let it fall a certain number of times before feeling satisfied. They might touch the door of a room, say, six times before leaving it, walk a few steps and come back to touch it again. They might repeat these singular performances with other objects with which they come in contact during the day. This singular mental idiosyncrasy is difficult of explanation and neurological classification. Nordau might classify the subjects as degenerates, yet I would not do so. Although the singular eccentricities just cited were apparently inherited (occurring in two members of the same family), I will not deny that, like "habit chorea," they could have been acquired, first afflicting one, then the other. The children were otherwise well, and some years later, when the "habit" or eccentricity had entirely disappeared, both individuals (who

were at all times conscious of their absurd performances, laughed over them, and were surprised at their own actions. W. Moser, M.D.

Brooklyn, N. Y.

THE CONTROL OF MOUTH BREATHING.

To the Editor of the Medical Record.

Sir: In the Medical Record of September 10, 1898, Dr. Norburne B. Jenkins, of Knoxville, Tenn., publishes an article on "A Bridle for the Control of Mouth Breathing." Permit me to sound a note of warning against any such appliance.

Every human being, young or old, will and must breathe through the nose with the mouth closed, unless there be some pathological condition in the nose, retropharynx, or pharynx to prevent it. Physiologically this nose respiration is always present under normal conditions, and it is only necessary to refer to the text-books on physiology and laryngology for confirmation of this fact. Therefore the assertion of the author, that "such obstructions (viz., adenoids, stenoses, hypertrophied tonsils, and turbinated bodies, ecchondroses, nasal polypi, etc.) often appear as the results of the non-use of the nose in respiration," is based on a physiological impossibility.

On the other hand, if there are obstructions present, the author no doubt will agree with me that the best thing to do is to remove them. Then the patient will very quickly breathe through the nose without bridle or other mechanical appliance.

But unfortunately we are not always able to remove certain impediments in nasal respiration, say, for example, a chronic nasal catarrh. If in such a case we apply Dr. Jenkins' bridle to a child, two possibilities confront us: either the bridle is fastened so loosely, as I have frequently noticed with similar appliances, that the child still breathes through the mouth and not through the nose, in which case it is not harmful but of no use; or the bridle is fastened so tightly that the child cannot separate the jaws. In this case the child will choke to death. And it is this possibility against which I should like to warn my colleagues.

If a child cannot get any breath through the nose and if the mouth is tightly locked, provided there is no loss of teeth, giving space through which air could pass, there is only one chance left for such a patient —viz., suffocation. W. Freudenthal, M.D.

New York City.

TRAUMA AS A CAUSE OF APPENDICITIS.

To the Editor of the Medical Record.

Sir: In the last issue of the Medical Record I read with interest the article, "Trauma a Cause of Appendicitis.". While there undoubtedly are cases of traumatic appendicitis, I believe Dr. Small does not go far enough back. In many of our cases an attack appears to be stirred up by an injury, yet I think this happens nearly always in patients who have had a previous attack or attacks. I have had many cases in which the patients insisted that they had never had any trouble before, and in which I was convinced from the adhesions and general thickening I found that there had been previous attacks.

All operators tell us of adherent, thickened, and twisted appendices, and of adhesions binding the appendix and cæcum to adjacent structures; and we know how prone is such a mass to inflammation, how apt is such a case to develop an acute condition from trauma. But, to go farther back, I have rarely failed in my fresh cases to get a history of indigestion and diarrhœa some short time before the attack of local pain, and I believe most cases of appendicitis have their birth in the filling up of the appendix with liquid and septic fæcal matter, from which the fluid portion is afterward absorbed, leaving behind the irritating lump, which but continues the inflammation already present. Such a magazine may be kept sealed for a while, but how certain it is to explode in time, and what will more surely set it off than a trauma of some kind?

W. M. Brown, M.D.

Rochester, N. Y.

THE NEW ARMY TREATMENT OF TYPHOID FEVER.

To the Editor of the Medical Record.

Sir: As a sequel to the letter of Dr. W. Gilman Thompson in your issue of September 10th, under the heading, "The New Army Treatment of Typhoid Fever," I desire to report the case of a patient who was not stopped in New York City. G. S——, private, company A, thirty-fourth Michigan volunteers, entered my office September 1st, having been discharged from the detention hospital at Camp Wikoff three days previously. I found him with a temperature of 103° F., dry cracked tongue, sordes on the teeth, tympanitic abdomen, and suffering from a profuse "pea-soup" diarrhœa, much prostration, and an irritable stomach. I asked him if he had a fever when discharged. He replied that he did not know; that during the two days he was in the detention hospital he was at no time examined by a physician, and that when one appeared it was only to ask him if he wished a furlough. Thinking that if he was to recover he must escape from the lack of treatment he was receiving, the soldier replied in the affirmative, and with two other members of his company, in little better condition than himself, made his way as best he could to Michigan. I placed him in Mercy Hospital in this city, where he has since been very ill with a typical attack of typhoid fever.

Here is a patient who actually scattered the typhoid germs all along the railroad track from Montauk Point to Northern Michigan, and is still in considerable danger of losing his life from so doing.

W. T. Dodge, M.D.

Big Rapids, Mich.

FREEDOM FROM SMALL-POX OF THE ARMY.

To the Editor of the Medical Record.

Sir: Apropos of the editorial articles in your issue of September 10th, on "Army Surgeons" and the "End of Compulsory Vaccination in England," may it not be well to call attention to the fact that, notwithstanding there has been much suffering in the army of the United States since the beginning of the war with Spain, from typhoid and yellow fever, dysentery, etc., not one case of small-pox has occurred—not even of the modified type?

Hitherto, so far as I can ascertain, unless in the English army, there has been no war of any importance in which small-pox has not been one of the sources of distress and mortality.

Starling Loving, M.D.

Columbus, Ohio.

Compensation for Twins.—One has to read a French journal to learn to what length American enterprise can go. We learn from the *Lyon Médicale* that an insurance company has been started in this country to insure against the birth of twins. Provided a first payment is made by the enceinte woman at the beginning of pregnancy, before twins could be diagnosticated, the company will pay a large indemnity at the time of accouchement if there is more than one child. Whether or not the sum is in proportion to the number of children we are not informed.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending September 17, 1898:

	Cases.	Deaths.
Tuberculosis	169	145
Typhoid fever	209	44
Scarlet fever	49	7
Measles	33	2
Diphtheria	102	18
Chicken-pox	4	0
Cerebro-spinal meningitis	0	8
Laryngeal diphtheria (croup)	7	4

An Ideal Sanatorium.—S. Berkheim and Blanchet (Paris) say that although the isolation of consumptives in hospitals is a prophylactic process of much value, it is not very useful to the patients themselves, who, placed in indifferent sanitary conditions and in an impure atmosphere, derive relatively little benefit from the measure. What is needed are sanatoria constructed expressly for consumptives, at altitudes of eight hundred or fourteen hundred metres, far from the dwellings of men, and particularly from any large centre of population. The authors suggest the following plan of sanatorium as a type: An immense central building, connected with two wings by vast glass-covered galleries. On the south front there should be a gallery, two hundred metres in length, for the open-air treatment. All the bedrooms should have a southern aspect, and should resemble a surgical operating-room in appearance and in furniture; they should be capable of being easily made aseptic. Each one should have accommodation for only two patients. As regards the financial side of the question, the authors contend that if the sum recently voted by the Paris municipal council for the isolation of consumptives were to be devoted to the construction of sanatoria, the city of Paris would be able at once to have twelve model sanatoria, which would accommodate 12,960 consumptives every year. This would have the further advantage of setting free a large number of beds in the general hospitals, which are badly needed for other patients—*British Medical Journal*.

When may Women with Heart Disease Marry?—Dr. Kisch (*Therapeutische Monatshefte*, February, 1898) says the chief points to be considered are: (1) the kind of heart disease; (2) its duration; (3) the presence or absence of compensation; (4) the general health; (5) the social position of patients. (*a*) They may marry if the disease is not of long standing, compensation is good, and the general health is not undermined. They will have during pregnancy, and still more during and for a time after delivery, many troubles due to their heart, but in by far the greater number of cases there will be no danger to life. This applies to well-compensated mitral regurgitation and stenosis, aortic regurgitation, fairly marked sequelæ of pericarditis, and to muscular degeneration if not too far advanced. The patients must also be in a position to spare themselves bodily exertion as much as possible during pregnancy, to avoid mental excitement, and to have constant medical supervision. (*b*) The prognosis is not so good if the patients are very anæmic or nervous, or advanced in years, or if the valvular disease is congenital or acquired in childhood. In these cases the physician should advise against marriage, or at any rate point out that the disease will almost certainly become worse after marriage. (*c*) Marriage is to be absolutely forbidden as dangerous to life when compensation is failing or when there is advanced muscular degeneration. In all cases in which there are dyspnœa, palpitation, and quickened pulse on slight exertion, or marked œdema not disappearing after rest in bed; when there are a tendency to arrhythmia, scanty urine with albumin, and attacks of irregular small pulse, coldness of the extremities, nausea, dyspnœa, syncope, etc., marriage is dangerous, whether the cause of the symptoms be valvular disease, diseased arteries, or impaired cardiac muscle. Even those for whom marriage is allowable must follow certain rules strictly: (1) Coitus must not be frequent, and must be continued to the end of the orgasm; otherwise reflex heart troubles and depression result. (2) They must not have more than one or two children, as with every pregnancy the strength of a diseased heart diminishes in geometrical progression. If this rule is followed, induction of premature labor will be seldom necessary; and luckily so, since, when it is, the results are very unfavorable.

Baths of Nauheim.—Dr. Richard Douglass Powell (the London *Lancet*, April 9th), in an article entitled "The Principles which Govern Treatment in Diseases and Disorders of the Heart," says: "The strong brine and aerated baths of Nauheim and other places are unquestionably of much service in some circulatory disorders. They are perhaps most suitable for cases of chronic rheumatism and gout associated with high arterial tension and secondary cardiac disturbance. In cases of functional excitement of the heart's action in connection with quiescent or only imperfectly compensated valvular affections they may be used; in the latter cases at first in combination with more or less complete rest rather than with graduated exercises. In the high-tension and less quiescent cases the higher temperatures, calculated to lower tension and to stimulate surface circulation, are more useful. In the more neurotic cases with sound hearts the more tonic and comparatively lower temperatures may be employed in shortened duration. It is well pointed out by Dr. Groedel that the baths and exercises are two separate therapeutic agents and that in perhaps only twenty per cent. of the cases are they usefully employed in combination, although massage may be more frequently employed. Beneke, who originated the bath treatment at Nauheim, was very sound in his doctrine to avoid all gymnastic exercises until after the lapse of six months from any acute endocarditis."

Health Reports.—The following statistics concerning small-pox, cholera, yellow fever, and plague have been received in the office of the supervising surgeon-general of the Marine Hospital service during the week ending September 17, 1898:

SMALL-POX—UNITED STATES.

		Cases.	Deaths.
Michigan, Otsego	September 10th	Reported present.	

SMALL-POX—FOREIGN.

		Cases.	Deaths.
Brazil, Rio de Janeiro	July 20th to 27th	2	
India, Bombay	August 2d to 9th	..	1
Calcutta	July 31st to August 6th	..	2
Norway, Christiania	August 20th to 27th	1	
Russia, Odessa	August 13th to 20th	2	
Odessa	August 20th to 27th	4	
Warsaw	August 13th to 26th	..	3

CHOLERA.

		Cases.	Deaths.
India, Calcutta	July 24th to July 30th	..	2

YELLOW FEVER—UNITED STATES.

		Cases.	Deaths.
Louisiana, Franklin	September 5th to 13th	42	2
Mississippi, Jackson	September 10th	2	
Orwood	July 30th to September 1st	41	

YELLOW FEVER—FOREIGN.

		Cases.	Deaths.
Brazil, Rio de Janeiro	July 20th to 27th	18	13
Mexico, Vera Cruz	August 30th to September 1st	..	4

PLAGUE.

		Cases.	Deaths.
India, Bombay	August 2d to 9th	..	85

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Original Articles.

SOME DESPERATE CASES OF TYPHOID FEVER TREATED WITH AND WITHOUT COLD BATHS.

BY SIMON BARUCH, M.D.,

NEW YORK.

THE trend of medical opinion may be readily ascertained by consulting the files of a wide-awake medical journal. The true position of the bath treatment of typhoid fever within the past decennium may be gathered from the following quotations from the MEDICAL RECORD. Referring to a paper on this subject, read before the State Medical Society, the MEDICAL RECORD of February 16, 1888, says editorially, that "if the author succeeds in arousing the profession to a realization of the fatality of typhoid fever in our midst, and in directing attention to the success of the cold-bath treatment, which, for obvious reasons, has not yet obtained firm footing, the outcome may be valuable.

"It will be difficult to persuade the profession, which has been long under the dominion of the *laissez-faire* policy, to adopt the heroic method of cold bathing. The most important point made by the author seems to us the emphasis placed upon the object of the cold bath being antifebrile rather than antithermic, inasmuch as its action is chiefly directed toward the neutralization of the febrile toxæmia due to the typhoid process."

That the continued agitation of the latter point has "aroused" the leading teachers and practitioners of this city and country to the "realization" referred to by the MEDICAL RECORD is evident from the following quotation from an editorial in the issue of May 7, 1898, nine years later:

"Advocates of the bath treatment seem to be increasing in number. It is generally conceded that excellent results are to be obtained by judicious cold-water treatment, and the closer the Brand method has been followed the better the reports seem to be."

That the MEDICAL RECORD voices the opinions of the leaders of medical thought may be gathered from discussions in our medical societies and from the records of our great hospitals.

In his first plea for the Brand bath the writer insisted upon the necessity of following the strict technique of Brand. While he still holds that when cases are seen in the first stages of the disease the latter is absolutely essential to success, a large experience has convinced him that in the later stages of cases which have not in the beginning been treated by the Brand bath a decided deviation from the latter is imperative. Some of the following histories will illustrate the proposition:

Mr. G——, aged thirty-two years, seen with Dr. Nicolai, in the fourth week of a severe typhoid. The patient had suffered during the past few days from decided cardiac failure, with its frequent accompaniment of renal inadequacy. An eminent consultant had suggested alcoholic stimulation and digitalis, but the patient's condition grew worse until his life was despaired of. I found him in a semicomatose condition, with eyes half closed, occasional twitchings of the facial muscles, subsultus tendinum, tympanites, and muttering delirium. Touching his body produced short but mild convulsive movements. The urine was scant; the quantity drawn during the past twelve hours had been ten ounces. Several bloody stools had been passed. The indications of treatment seemed to be to stimulate the failing cardiac innervation, and to remove uræmic poisoning by enhancing cutaneous and renal activity. The external use of cold water in any form was contraindicated by the condition of the cerebro-spinal centres. Hence hypodermics of strychnine, one-thirtieth of a grain every three hours unless contraindicated by trismus, were substituted for digitalis, and the nude patient was snugly wrapped in woollen blankets and given six ounces of cold water every two hours, alternated with six ounces of milk, until he perspired freely. During the next twenty-four hours forty ounces of urine were drawn. The first sound of the heart was stronger, despite the passage of another bloody stool. Improvement of cardiac and renal action continued and the patient made a slow recovery.

Mr. L——, aged twenty-six years, seen with Dr. Baran, had been ill with typhoid fever five weeks. The morning temperature had during the past week registered 99° F., but usually reached 102° F. or more in the evening. An eminent consultant had advised large doses of quinine and other judicious treatment, which, however, failed to control the fever. I found the patient greatly emaciated, too feeble to move in bed, but with clear intellect; pulse, 150; first sound feeble; no intestinal or other complication. The fever seemed to be due to sepsis, as was also the cardiac adynamia, both being the sequels of an exhausting typhoid which he had survived only under the most judicious management. Cold baths were out of the question. With little hope of benefit, ablutions of 65° F., carefully made, with friction over portions of the trunk only, every two hours, and guardedly repeated in accordance with reactive capacity, were advised. The patient being so feeble, the technique was carefully explained to the nurse. Intelligently and actively executed under Dr. Baran's supervision, this simple hydriatric measure, added to the judicious nutrition and stimulation already in operation, rescued this man from most desperate straits.

How much so simple a procedure may accomplish even in the earlier stages of the disease also, is illustrated by the following history:

M. W——, aged thirty-five years, seen with Dr. Simpson, had been ill five days, temperature ranging from 102° to 106° F., pulse from 120 to 140. Urine, examined by Dr. Simpson, contained albumin and granular casts; quantity during past twenty-five hours, twenty-seven ounces. The patient was delirious, muttering, sleepless. Up to this time the treatment had been homœopathic, with alcohol sponges for temperature reduction. This was withdrawn and for it were substituted ablutions at 65° F. every two hours, and hourly compresses at 60° F.; internally, five drops of diluted hydrochloric acid in water, followed by six ounces of cold water. Under these the temperature fell to 102° F. It fluctuated between 101° and 102.5° F. for five days, gradually falling every day or two until

it reached normal in four weeks, so that a tub which had been ordered proved unnecessary. The pulse never exceeded 100 after the second day of the simple hydriatic treatment, and averaged 80 during the last two weeks of the disease. The kidneys responded in a marked manner. The quantity of urine increased in one day to 60 ounces, registering afterward 87, 92, 98, 117, 113, 123, 90, 116, 82, 119, 82, 112, 81, 83, 90, 76, 86, 86, 90, 70, 80, 82, 79, 60 ounces by exact measurement. Albumin and casts disappeared in ten days. That these results were accomplished without cold baths is worthy of remark, and may encourage those who are timid in advising the latter in the more systematic hydrotherapy of typhoid fever.

The following case, from the records of the J. Hood Wright Hospital, is of interest as demonstrating how a modification of the Brand method and a substitution of affusions may lead to a successful issue in the most desperate condition:

E. J. C——, aged twenty-seven years, was sent to the hospital by Dr. Frank Daniels, after thirteen days' treatment in a boarding-house, where his temperature had ranged from 103° to 105° F., and his pulse from 120 to 150; he had most of the time muttering delirium. When admitted he was dull and apathetic, his tongue was dry and brown, the teeth were covered with sordes, the skin was cyanotic, abdomen tympanitic, subsultus marked. Three baths of 80°, 75°, and 70° F. for fifteen minutes during the night reduced the temperature one degree but did not remove the subsultus and mental apathy. The temperature being 102.2° F., affusions at 60° F. were substituted for the bath, to relieve stupor and improve the heart action, six ounces of milk, alternated each two hours with the same quantity of cold water, were also used. In two days the quantity of urine was forty-five ounces, containing albumin and hyaline and granular casts. The mental condition was decidedly improved by these cold affusions. Stimulants were discontinued and two ounces of strong coffee substituted before each bath, alternating with affusions, according to the condition of the patient; the former being used when the temperature reached 103° F., the latter when it was below. Compresses at 65° F. were continued hourly when the patient was awake. After seven days' treatment the mind became more clear and tympanites disappeared; the temperature was 101° F. Affusions were now given as a cardiac tonic. On the following day the temperature rose to 105° F., and the abdomen was again distended. Baths at 70° F. every three hours, with friction, given three times at four-hour intervals, reduced the temperature to 100° F., when affusions were resumed. During the next five days the temperature did not go above 102.8° F. A half-pack at 65° F. was given every hour; the temperature again rose to 103.4° F., but was reduced by one bath at 70° F. for ten minutes. The fæces now containing blood clots, baths were discontinued. After the temperature had been below 100° F. for several days, new rose spots appeared on the abdomen, and the temperature again rose to 103° F. Baths at 70° F. for ten minutes were now resumed every six hours until the temperature remained below 102.5° F. One month after the patient's admission the temperature registered normal. Six weeks later he was discharged.

Commenting upon the case before the Harvard Medical Society, Dr. Daniels, who had followed the case after its transfer to the hospital, said: "I have no doubt whatever that the man was saved by the application of the Brand baths and cold affusions over the head and shoulder, although begun in the third week."

Mrs. P——, aged forty years, was seen with Dr. E. J. Ware at midnight, when I found the family engaged in taking a sad leave of the patient, who was said to be dying. She had been ill six weeks and had been seen by several consultants. Pulmonary hypostasis, a feeble rapid pulse, anxious countenance, absence of first sound, were some of the manifestations encountered. The temperature had recently ranged between 100° and 103° F. The most judicious treatment had been assiduously applied, and during the past few hours hypodermics of brandy had been used. Here cardiac adynamia due to sepsis again confronted us, for which the following treatment was suggested: Hypodermics of strychnine, one-thirtieth of a grain every three or four hours; wet chest compresses at 60° F., cautiously applied every hour, the method being explained to the nurse; ablutions at 70° F. every two hours; regular alternate administration of milk and water, six ounces, every two hours. These measures stimulated the failing heart, removed hypostasis, and initiated a tedious convalescence.

Miss P——, aged thirty years, was seen at Long Branch with Dr. Harry Pemberton. She had been ill with typhoid fever four weeks and had been treated with cold tub baths. She was now sleepless, actively delirious, singing and muttering constantly, failing to recognize any one. Large hypodermics of hyoscine had somewhat controlled these threatening manifestations. The temperature had also yielded, and had been running below 100° F. for several days. Suddenly it had risen to 105° F.; a new crop of spots appeared, the abdomen became more tympanitic, diarrhœa again ensued, and the whole case assumed a most desperate aspect. The first indication being to produce sleep, a wet pack at 70° F. was applied by a skilful nurse, with gratifying result. This was repeated once in twenty-four hours, and full baths at 70° F. for ten minutes, every four hours when the temperature was 103° F. or over, were applied, followed by hourly trunk compresses at 60° F. The temperature and pulse improved under the treatment, until blood clots in the fæces demanded cessation of baths. The temperature rose again. Baths were resumed when blood disappeared, and they were continued for a week, when the temperature remained below 103° F. Compresses were continued until the temperature ceased to rise above 100° F. The wet pack continued to produce sleep, although the mind had not cleared before my departure from Long Branch. The patient made a slow recovery, as I was kindly informed by Dr. Pemberton. I had the singular experience of receiving a letter from this young lady, in which she expressed her gratitude to me, of whom she knew only through Dr. Pemberton's courteous mention, not remembering my presence during an attendance of ten days.

Remarks.—It may be noticed that in the recital of the above short histories, neither sponging nor the ice coil has any place. The writer has abandoned both. They are relics of the time when temperature was the point of attack in the treatment of typhoid fever, and cold water was applied for its reduction. Since the discovery of coal-tar products, it has become known that water cannot vie with these in antipyretic value, and that temperature reduction alone does not fulfil the therapeutic indication. Abundant clinical observation has also demonstrated that the lethal element in typhoid fever is a toxæmia which overwhelms the nervous system, according to its intensity, and depreciates all the vital organs which depend upon the integrity of the nerve centres for normal activity. To this toxæmia may be ascribed the high temperature, stupor, delirium, feeble heart action with its hypostatic conditions, renal stasis, etc., to which the patient so often succumbs. The application of cold to the cutaneous surface by ablutions, affusions, or baths produces a shock. This is followed, if judiciously graded, by a reaction, the stimulating effect of which is conveyed to the central nervous system, arousing it

from a lethargy which, in mild cases, is manifested by the rapid pulse, shallow respiration, elevated temperature, scant secretions, and in severe cases by cardiac failure, delirium, stupor, hypostasis, etc. Renewed energy is conveyed to the organs which maintain life and which have been crippled by reason of defective innervation. This is the prominent and important therapeutic principle, the recognition of which by the lamented Brand has saved many lives, and a correct understanding of which makes the physician independent of methods. The histories are cited to demonstrate the latter proposition; they show that while the full cold bath with friction is the ideal method, the ablution and affusion may with advantage be substituted for it in some cases, judiciously selected and applied. Sponging cools by evaporation. The small quantity of cold water used, and the slight friction produced by a soft sponge passed over the skin, create little or no shock and subsequent excitation of the cutaneous nerves, which in other procedures stimulate the depreciated nerve centres and counteract the lethal effect of the toxic agents circulating in the blood.

The ice-water coil cools only the part beneath it. It contracts the cutaneous arterioles, as is evident from the cyanosed appearance of the skin, and thus prevents all other effect. The continuity of its action prevents the shock and subsequent reaction required. While frequent sponging is far better than no water treatment at all, it may be advantageously discarded, when the cold bath is strenuously objected to or contraindicated, for ablutions, affusions, and trunk compresses, the technique of which may be gathered from works on hydrotherapy, and which should be closely followed.

51 West Seventieth Street.

THE DIFFERENTIAL DIAGNOSIS AND TREATMENT OF CUBAN AND CAMP FEVERS.[1]

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From July 20, 1898, to September 22, 1898, there were admitted to Bellevue Hospital three hundred and sixty men in the service of the United States army and navy. Of this number three had died before the last-mentioned date, and of those remaining in the hospital at the time none was likely to die. The surgical wards had treated one hundred and ten of these patients with one death, and the medical wards two hundred and fifty-one with two deaths. Of the medical cases, fifty-three were treated in the fourth medical division, under the supervision of the writer, without a death. Some of these men had been in the Cuban campaign; others had not been sent farther South than Florida; others had been in camps at Chickamauga and at Montauk Point. The prevailing form of illness among the soldiers from Cuba was malarial fever of the quotidian variety. In a few of these cases the crescent variety of parasite (Hæmatozoon falciparum of Welch) could be demonstrated, but the majority seemed to depend upon a double infection with the ordinary tertian parasite. No case was diagnosticated as malaria, or treated by quinine, until the specific protozoan parasite had been found in the blood. The routine plan of treatment was an initial dose of five grains of calomel with fifteen grains of bicarbonate of sodium, followed by the old-fashioned formula of the late Alonzo Clark, to wit: ten grains of sulphate of quinine with one grain of powdered opium and three grains of powdered capsicum, administered in soft capsules. Then smaller doses of the same combination were given every four hours, until the patient had been seventy-two hours without fever. Treatment of the coexisting anæmia was then commenced and continued until the patient's discharge from hospital. The results from this therapeutic procedure were in the highest degree satisfactory, very few cases resisting the action of the malarial remedies for more than seven days. One case of comatose pernicious malaria received one hypodermatic injection of twenty grains of bimuriate of urea and quinine, and afterward stiff doses of quinine by the mouth. He was a Rough Rider, with a sound heart and kidneys, and a determination not to die. He alternated between delirium and coma for five days, but left the hospital cured on the eleventh day. In every case in which the administration of quinine was not followed by a breaking up of the fever and an immediate improvement in the clinical symptoms, specimens of the blood were sent to the board of health laboratory for the Widal test. A positive reaction was obtained in two cases, in which our own examinations had previously demonstrated the presence of the malarial hæmatozoon. Waiving for the present the question of whether the Widal reaction is a reaction of immunity or a reaction of infection, a positive result in the blood test was taken to mean that the patients were suffering from a typhoid fever made irregular by admixture with malarial poison. For the purpose of getting a little more bacteriological light on this question of mixed infection, samples of the fæces and urine of such soldiers as showed a positive reaction to Widal's test, and also showed the presence of the malarial hæmatozoon in the blood, were sent to the board of health laboratory, but the bacillus of Eberth was not found in any case. Nevertheless the clinical histories, together with the blood examinations, enabled us clearly to place each case in one of three divisions, *i.e.*, malarial fever, typhoid fever, or typhoid fever complicated by malarial infection. In other words, we found no reason to recognize a distinct type of continued fever which is neither malarial nor typhoid, or one which is a compound of both—the so-called typho-malarial fever. As a rule, in these cases of mixed infections the activity of the malarial plasmodium was shown early in the course of the typhoid disease. In one very interesting case, however, that of a private in the thirty-third Michigan volunteer infantry, the malarial symptoms remained latent until he was ready to get out of bed from a severe typhoid, when characteristic chills with intermittent fever developed, and the tertian parasite was found in abundance in his blood. Previous examinations of his blood for the malarial parasite had invariably been negative. Of course the occurrence, late in typhoid fever, of chills with fluctuating temperature, would not alone have warranted us in dosing this patient with quinine, as this might have been caused by factors other than malarial, but microscopical examination of his blood clearly pointed out the therapeutic path. In every case of differential diagnosis between malarial and typhoid fever, the final decision was reached by examination of the blood, and in none was it necessary to employ the therapeutic test of quinine. When the malarial hæmatozoon could not be found, some help in diagnosis was afforded by the Ehrlich diazo reaction in the urine. According to Thayer, this reaction occurs only in six per cent. of cases of malaria, but is invariably present in typhoid fever. The results of the Widal test were not so convincing as they usually are in cases of typhoid fever of Northern origin. They were especially disappointing in the cases of undoubted typhoid fever developing at Chickamauga, in view of the fact that this reac-

[1] Paper read before the Medical Society of the County of New York, September 26, 1898.

tion is said to have been present in 97.9 per cent. of nearly five thousand cases reported by various authors.[1] Of one thousand and nineteen cases in Minnesota, the reaction was obtained in all but three before the twenty-second day.[2] This discrepancy may be due to the fact that there are clinical and anatomical differences between typhoid fever in the South and the North—the disease being much milder in the South.[3] Regarding the causes of typhoid fever at Chickamauga and Montauk, the writer is not qualified to speak from actual observation, and will not trust himself to speak from what has been told him by the soldiers. The charts told their own story of men being sent on long railway journeys in the full flush of typhoid fever, and arriving in New York exhausted, emaciated, and despondent. Their ready response to simple treatment in clean beds, with abundant liquid nourishment and adequate faithful nursing, forms the bright side of the picture. We have no specific treatment for typhoid fever in Bellevue Hospital. Baths are used for high temperature. Pure water is allowed *ad libitum*. Pure milk—peptonized in some cases—is diluted with lime water (one part lime water to three parts milk) and given every three hours. In the intervals other concentrated liquid nourishment (such as expressed beef juice, whites of raw eggs in boiled water, with a little brandy or liquid peptonoids) is given. The patient's wants are promptly attended to. A bedsore is regarded as a blunder rather than as a complication, and, notwithstanding the wretched condition in which some of the men were received, it occurred in but one desperate and protracted case. It may be of interest to mention that the use of bovinine topically seemed greatly to accelerate the healing of this bedsore and to destroy its odor and promote separation of its slough. Drugs in typhoid cases were used only to meet symptomatic indications. Our usual method of tubbing according to the Brand method was inapplicable to nearly all of the cases admitted, because they reached us late in the disease and in wretched physical condition; but sheet baths, bed baths, and even cold sponging with frictions contributed greatly to the comfort of the men, to the reduction of high temperature, and to final recovery. Two soldiers had moderate intestinal hemorrhage. They were treated by withholding food and drink for a time, small pieces of ice being allowed to dissolve in the mouth to quench thirst. In addition, the ice coil was applied to the abdomen, rectal enemata of four ounces of iced water were given, opium was administered hypodermatically in sufficient doses to get drowsiness and contracted pupils, ergotin was also given by the needle, and both patients recovered.

Age of Parents, and its Influence on their Progeny.—As the result of a careful investigation of twenty-four thousand cases, Dr. Jarosie presented to the director of the Hungarian bureau of statistics the following conclusions: The offspring of parents between the ages of twenty and twenty-five are likely to be weak and delicate, but between twenty-five and forty-five will probably be strong and thrive. The mother bears most robust children between her twenty-fifth and thirty-fifth year. When the mother is ten years younger than the father, the proportion of healthy children is greatest, the chances being ten per cent. more favorable than when the parents are of about the same age.

[1] N. E. Brill: New York Medical Journal, January 15, 1898, p. 81.
[2] F. E. Westbrook: Philadelphia Medical Journal, March 26, 1898, p. 551.
[3] Allen J. Smith (Galveston, Tex.): Philadelphia Medical Journal, September 17, 1898, p. 541.

SOME REMARKS ON THE MIDWIFERY QUESTION—MUST THE MIDWIFE PERISH?[1]

By THOMAS J. HILLIS, M.D.
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The influence of the midwife on the practice of medicine has received a large share of the attention of the profession for the past year. One would hardly think that this unobtrusive old lady would be the cause of such fuss and excitement, but such is the fact, and she is now discussed *pro* and *con.* in and out of medical societies—her individuality, her methods, and her prospects for the future.

From this shaking up it would appear that the great body of the medical fraternity has just awoke to realize that such an individual as she has only begun to exist, or is a thing of rapid pernicious growth. They seem to be unconscious of the fact that she was in existence and past grand mistress of her art in the days of the Pharaohs and long anterior to the lawgiver Moses, but are ready and able to believe that after the passage of a law and the stroke of a governor's pen she will receive her quietus and cease to exist as a disturbing element in the medical household.

We would have them remember that the customs and usages of a people for ages are not obliterated by the stroke of a governor's pen or by an act of Congress either. It is easier for a camel to go through the eye of a needle than it is to nullify the unwritten law of the usages of a nation; in fact, it may be said that these old customs and usages are a higher law, and one from which there is seldom any appeal. It is childish to assume that she can be erased and relegated to the shades of some purgatorial limbo for her shortcomings and her memory effaced from the monument she has built for herself in the hearts of the people.

The midwife can be found in every region of the habitable globe, barbarous and civilized alike. She has withstood the mutations of time and fortune for over five thousand years; she will withstand them until time is no more. She was called and anointed to fill an emergency and officiate when bashfulness or expediency demanded her presence, in preference to that of a physician, even though one was in waiting in the anteroom of the accouchement chamber.

Then we shall have to consider this prehistoric figure to-night, as of old, a part and parcel of the social fabric, as to destroy her would be to tear that fabric to pieces and bring about a condition of social chaos.

About that Magazine of Gun Cotton She Carries Concealed in her Skirts.—A great hubbub is now being made about the poor equipment and want of qualification of the midwife of to-day, and about the train of disease and disaster that follows in her wake. One thing, however, is certain, that she is an improvement on her sister of the past; though it must be admitted that, like all of us, she has a great deal to learn before she reaches the perfection mark that some would demand as a necessary adjunct of her calling.

Great stress is laid on a few isolated cases adroitly and hysterically told at the meetings of medical societies from time to time by good men and true, who think they have a mission to perform by opposing her, and who are animated by an honest desire to lay this old lady, the midwife, in the grave of her fathers; as, for instance, a dreadful and tragic event that could have been averted had the female in attendance been an intelligent and qualified person. The truth is simply this: that the exceptional cases told so artfully and well by interested parties only prove the rule, and

[1] Read at the meeting of the New York County Medical Association, June 20, 1898.

that rule is, that it is surprising how few fatal cases occur in midwifery practice, when we consider how widespread that practice is. For instance, about half the obstetric work of Greater New York is done by women, most of whom are ordinary midwives, a small fraction of whom are women doctors; the remainder, a goodly portion, is accomplished through the good offices of neighbors and janitresses, which latter often take the place of first assistants to the historic and much-abused midwife.

In the crowded tenement districts and flats this latter contingent, undergraduates of the midwife, take great pleasure in cheating the attending physician out of his fee, by not sending for him until too late, or by obstructing and badgering those interested in his coming. Their obstetric labors over, they immediately start in to abuse the physician, whom they intercepted, for his tardiness. After the physician has departed in disgust, often in a huff, the auxiliary and impromptu midwives compare notes, and finally compromise with the lying-in woman and other interested ones for a pint of beer, which is drunk with great gusto and many well wishes for the return of the same.

On the Mortality of Midwifery Practice.—Not more than one or one and one-fourth per cent. of the great multitude of lying-in women attended by midwives die in the puerperal condition, and it is doubtful if the services of trained physicians would materially alter these figures.

That He tempers the wind to the shorn lamb is a great truth, but not truer than that nature is kind to the puerperal woman in her simple and lowly condition, especially when surrounded by squalor and filth. Even handicapped thus, nature is loath to destroy her creation, and spreads a network of protection, woven with inimitable art, over the exposed surface; this network will prove a bulwark against disease if the seed of contagion has not been already sown by direct contact with the fingers of the attendant, be that attendant doctor, midwife, or janitress. No such disasters follow in the train of the midwife as we are told of so pathetically, so plaintively, by well-meaning but chicken-hearted gentlemen of our cloth, from this and other platforms.

As a rule, midwives get frightened early in a case, and often summon a physician when his services are not really required, as the case is a normal one and prognosis most hopeful.

For one stupid and incompetent midwife there are a hundred alert and active ones, who are quick to recognize danger and in time to summon medical aid. Indeed much more injury is done by meddlesome young physicians in pinfeathers, who are attachés, aides-de-camp, and supernumeraries of dispensaries and so-called lying-in asylums, with which unfortunately our city is weighed down.

These fledglings often invade a household as the parturient period draws near, and often two or three of them billet themselves on a wretched tenement for periods varying from six hours to four days; sometimes by relays they exceed this mark and sojourn for a week in the poverty-stricken hovel.

This perpetual vigil thus kept up by the enterprising young medicos in anticipation of a momentary accouchement is sometimes rudely broken, for it often happens that their anticipations are not realized. During this sojourn of the young physicians at the humble hostelry of the parturient woman, they make about three hundred vaginal examinations each, and generally succeed in congesting and drying up the parts and causing the woman much pain, often retarding labor for hours and raising the body temperature, thus unfitting her for the ordeal through which she must pass during her lying-in period; indeed, often jeopardizing if not destroying her life.

It appears that the objective point in these over-frequent examinations is the cervix, and the object to be attained the degree of dilatation of that cervix. A matter, too, of the highest importance to them is, what is the presenting part, and what the position of the head? This latter, though impossible at this early stage, is diagnosed with ease and accuracy by these medical wiseacres.

After dwelling in one of these abodes of misery for two or three days at a stretch, waiting and watching for an event that does not obligingly come off, the young disciples with some disgust pick up their belongings and hie themselves to their respective lodgings. It may be worth while to see what these belongings are; they consist of sometimes a change of clothing in a dressing-case and always of an immense gripsack stuffed to bursting with the very latest obstetrical outfit, where it is displayed conspicuously on a front table, that all may see and many wonder and guess of its contents. We will now open the bag thus conspicuously displayed, to find that the young physician provided for himself well in this, his enormous bag, and when he packed it took care to be prepared for all emergencies.

A few of the many things this immense bag contains are a rubber apron, a rubber sheet, a Kelly safety pad, a half-dozen Barnes cervical dilating-bags, an ether cone, a chloroform inhaler, a pair of baby scales, a quarter of a dozen perineum needles, two clamp forceps, two yards of iodoform gauze, one pound of absorbent cotton, a half a dozen two-inch and a quarter-dozen three-inch roller bandages, one tongue forceps, a quarter of a dozen scalpels, keen and shining, a symphyseotomy saw, a cephalotribe, a Tarnier forceps, a pair of non-fenestrated bull-dog forceps, a Lusk short forceps, a pelvimeter, and a full set of transfusion instruments. This, as hinted above, is only a small part of the contents of this remarkable bag, lugged into the sick-room by this young disciple of Æsculapius.

The writer of this article could relate sad reminiscences, reminiscences that would wring the hearts and cause tears to well up in the eyes of strong men, as a result of the meddlesomeness and bungling on the part of those young men playing at medical surgery by the grace and at the pleasure of dispensaries and lying-in asylums; indeed, very much more than he could of the midwife, though intimately acquainted with her methods for twenty years.

How her Departure from the Stage would Affect the Masses.—Now if the midwife was to make her exit from the stage to-night, what would the people gain by her demise and what legacy would she bequeath to us? What benefit would the people who have been accustomed to hear her voice, and shake her rugged hand, and pay her the small fee she asks for professional services—a fee, by the way, always in harmony with the surroundings and never exorbitant—derive from her taking off? They might gain little but lose considerable. The gain would be to force on a woman a man in the shape of a medical adviser whom she does not want; and in order to do this, a constable must be present in the sick-room, a thing as ridiculous as it is absurd for the man midwife. He could not hope to look for more reward than she generally paid to her old nurse and trusted friend, the midwife on her block, who in a poor family often helps in the cooking and in the direction of the household affairs, now left without a head for the time being. To force or push a doctor into the workingman's family when he is very well content with the service of the neighboring midwife is a form of servitude that he will not endure. He will repudiate it at the polls, the police court, and the chancel rail of his church; and however loud some of us of the medical guild

shout to him to desist from further engaging her services and hire one of us in her stead, he will pay no attention to that voice, but consider it a piece of insolence and an invasion of his rights not in consonance with democracy or with the spirit of American manhood.

True, the question will be asked: Have not the authorities power to make and enforce a law that will the better protect the people from the evil results and rash acts committed by ignorant midwives, whom they assume to be capable and hire as such, to attend their families in the important act of parturition? Yes, the authorities have power conferred on them by the people; but how this power is to be used is well defined, hedged in, and circumscribed. This is a question of great moment, but happily one easy of solution, from the fact that the actions of individuals become illegal only when they affect the rights and privileges of others, or when an individual is adjudged incompetent to take care of his affairs himself, as in case of imbecility, lunacy, or childhood.

None will claim, because a woman prefers a midwife to a physician to attend her in her confinement, that she has broken any law or done injustice to her neighbor by the invasion of any right conferred by Providence and the constitution. The woman who prefers the midwife up the street to the doctor across the way to wait on her in her accouchement may have chosen wisely and well, for two reasons: first, because the midwife attended her successfully in four previous confinements, she is right now to assume that this case also will be a success; second, the physician across the way charges twice the fee of her midwife for such professional services, and he does not wash the baby or the soiled clothes, neither does he prepare the noonday meal for her hungry husband when he runs from the factory on a half-hour leave of absence, to bolt his dinner in defiance of dyspepsia and the laws of health. Also she recollects a case the said physician had on the same floor where she lived last year. It was that of a young woman, kind and good, with whom she labored long and hard to employ her midwife in preference to that physician in her approaching labor. Other counsels, however, prevailed, and now the plaintive wails of a motherless child are echoing through the halls.

On the Legacy She Would Bequeath to Us.—It is hardly right to say a word on this subject, as the physician is popularly supposed to have no rights where the welfare and interests of the masses are concerned; still, nevertheless, a wise physician will halt to ask himself: Are my interests affected? What will I lose by the suppression of the midwife if I have to part with half my practice because the methods of the midwife are not agreeable to some of my professional brethren? Who will be the gainer by my loss? If the principal in the case, the parturient woman, is this gainer, why, I am satisfied to lose; but if somebody else and not she is the beneficiary, why should I lose my half to help the stranger to what is mine? Now, who is that stranger who will reap where I have sown? None other than the woman doctor, or what polite usage calls the lady physician.

This woman doctor has been creeping into the ranks of our learned profession, slowly but surely, for some time. Now it may be said right here that it is not the purpose of the author to quarrel with this woman or to criticise her in any manner, only so far as it directly affects the profession of which he is a member. Men, as a rule, are better adapted by nature and training for medical and especially surgical work than are women. This fact is so well recognized and established that nothing more need be said on this point. True, the new woman has entered the field and presented her credentials, but so far little notice has been taken of her or her passports. It will be noted that those who take pains to find out the real sentiment of that great heterogeneous mass called the public, the women of that public in particular, will discover that that sentiment is overwhelmingly against the pretensions and prospects of the woman doctor. They declare with one voice and loudly, "Let the midwife alone to pursue her useful but humble calling. As for the female doctor, we don't know her nor are we anxious to make her acquaintance, though some women's-rights women declare that she is the product of a higher civilization. However that may be, we want none of her; we have our midwives and our family physicians, whom we can call on when in need of their services. As for her, we repeat, we want none of her."

This sentiment is indeed widespread among the people, a thing that will throw a flood of light on the reason why the female doctor is making her way so slowly and meeting with such marked opposition in the practice of her profession, not from her male professional brothers, who, it may be said with some effort at blushing, are perfectly indifferent to her fate one way or the other, but from her own sex.

This will further establish the old saying, that a woman's worst enemy is a woman. If the woman doctor has met with success we will not begrudge that success to her; neither will we, if her efforts have been crowned with failure, cry our eyes out and sit in sackcloth and ashes bewailing her misfortune. As was said before, we are not overinterested about her, and certainly are indifferent to her success. Some physicians, however, believe the measure of her usefulness is filled when she qualifies as professional nurse, and that to step higher is only to insure her fall, embitter her life, and show the world that there are occupations that nature did not fit her for, and that one of these occupations is the practice of medicine.

About the Bashfulness of the Young Practitioner of To-Day Compared to Those of Olden Times.—Once upon a time it was the fashion for the accoucheur to conceal his obstetric outfit on his person, lest he alarm the already frightened woman whom he was called on to attend. This rule held good in the lowest as well as in the highest walks of life. Things have changed since then. Gates ajar! Shades of the illustrious dead, who have taught us to enter the lying-in chamber with bated breath and noiseless tread, behold, and stand aghast! the hippodroming and blowing of trumpets and unloading of nameless trumpery, called surgical appliances, hauled into the bed chamber and displayed with flourish under the very eyes of the woman who, anxious and pale, is now about to become a mother. The one who does all this is a young man just decorated with an honorary title, of great self-assertion and pompous of mien, who has just returned from an extra course in obstetrics at the famous school of Professor Sandyhill, of Edinburgh, after winning high honors for skill in gynæcology at the noted school of Professor Outerhaussen, of Zurich. With all his qualifications—and they are many, for though in years he is twenty-one, in learning he is profound—he is yet woefully deficient in tact and decidedly lacking in respect for the patient to whom he came to render aid; to say nothing of the good manners that prompted him to make a curiosity shop of her humble boudoir for the exhibition of the several trumperies called obstetric outfit, with which his bag is filled to the bursting-point.

The poor woman whom he came to succor may well exclaim in her travail, "Save me from this learned man; give me back my midwife, or indeed anybody whom I can trust!"

The Hardships the Demise of the Midwife will Bring to the General Practitioner.—Now since it

has been pointed out that the great mortality of midwifery practice exists only in the imagination of the alarmists, and since it has been further pointed out who these alarmists are, we will proceed to consider what effect the suppression of the midwife will have on the practice of our beloved profession. It will first deprive some capable and honest women of the means of making a livelihood; indeed, in many cases, throw them on the tender mercies of the commissioner of charities. Second, it will deprive the poor honest man's wife of an attendant of her choice, for if she cannot have her midwife she will not have an inexperienced young physician, such as the lying-in hospitals and charity societies furnish, even if he took a post-graduate course on the planet Jupiter. Third, it will directly affect the general practitioner —in fact, kill him—in the tenement districts, for this reason: the accoucheur accustomed to be there is the midwife, who lives in the neighborhood, and who is in the habit of looking up to the practitioner in her vicinity as something of an oracle when medical advice is the thing to be sought for or the object to be aimed at. She promptly reports a difficult case to him, after which that case is his, she serving merely as nurse and only too eager to obey his every wish. The neighboring doctor and the midwife have a perfect understanding. She does not claim to be an M.D. If a prescription is to be written, he writes it; if a fee is to be obtained, he gets it. In the face of these facts, what do some of us purpose doing? Why, nothing less than destroy our benefactor, have her perish from the earth, that we may kindle into life and put into power another woman, who is working hard against us, and who will further increase her activity if only the opportunity offers.

Are we medical gentlemen of this assembly going to commit *felo de se* and hand over our families, as some would have us do the midwife, to city charity? I hardly think so. The physician who attended the liquor dealer's or the grocer's wife in her confinement is most likely to be the person summoned when the baby has a colic, or when the mother suffers from hemicrania or tic douloureux, be that person man or woman; and it is most likely to be a woman for two reasons: she can afford to work cheaper than the man, and she will.

This quality of cheapness will attract tradespeople in moderate circumstances and readily decide the choice, other things being equal. Again, the natural or assumed bashfulness of some women is to be considered, and as a matter of preference, if one cannot have her midwife, she will choose the lesser evil and employ the woman doctor rather than the young physician so skilled in his art.

Her prejudice against the female physician, confronted by such conditions as these, will die out; then she will adopt and install her as family physician, though Dr. Greatheart down the avenue has attended her husband and children for two years with marked success.

We all of us know how fickle the public is; how a chance acquaintance or the turn of the dice will sometimes decide what physician will preside over the household.

Whose Side to Take in the War Now Declared.—The parturient act is a physiological one, and easily accomplished under normal conditions. If obstruction exists, which happily seldom does, the woman doctor too must summon aid, which is, as a rule, one of her own sex; but remember, she is not quite so quick to take fright and summon help as her stepsister, the midwife, whom she repudiates on professional and other grounds.

By thus suppressing the midwife we open wide the gates to our professional sisters and flood the whole country with female doctors. Practically, we hand this individual over the family practice, for between her and the specialist, whom she greatly admires, there will be no room for the general practitioner; he will get squeezed between the millstones.

After the dawn of this new day—the demise of the midwife—the woman doctor will claim her heritage, and that heritage will be everything in sight; and she will combat every influence that would prevent her from occupying her possessions.

Now what shall we do with the midwife? On whose side shall we range ourselves in the war waged against her? Of course we will be found on the side of right and justice, and at the same time pursue a course that will further enhance us in the eyes of that midwife, while throwing a more efficient covering of protection around the parturient woman.

Each physician can constitute himself a teacher and place himself in communication with the midwife in his immediate vicinity, who will receive him as a friend and listen eagerly to his advice. She will sit at the feet of her Gamaliel and hearken to his admonitions on things pertaining to the art of obstetrics.

Let this course be pursued, and there will be no upheaval, no breaking down of barriers, no tearing away of old landmarks, and no invasions of the rights of others. Let this course of instruction go on until the midwife is not only skilled in the handling of simple cases, but a keen and discerning judge of the conditions that surround and the means to be employed in order to bring the most difficult case of obstetrics to a successful conclusion.

Then let us look kindly on the midwife. She is a grand old figure; she looms up conspicuously through the ages, a figure much more picturesque than we, though we take pride in boasting of our achievements and our antiquity. Take it for granted that she has done some harm, yet she has not done a tithe as much as the medical alarmists would have us believe; nor is she at this moment doing half the injury the young medical gentleman is who takes pleasure in adjusting a Tarnier forceps for high delivery in a normal pelvis, and who has no scruple in using a symphyseotomy saw when the pelvimeter indicates a slight variation from the normal, and who immediately sets about tinkering up the perineum after the fashion of a housewife patching a quilt or a tinsmith soldering a leaky household utensil.

In the face of the facts adduced, let us reflect, and take care to remove the beam from our own eye before looking for the mote in the optic of the poor, simple, unobtrusive midwife.

51 Charleton Street.

An Easy Method for the Removal of Foreign Bodies from the Nasal Cavity of Children.—According to Dr. G. Bieser the employment of the usual methods for removing foreign bodies from the nasal cavities in struggling children and without anæsthesia is attended not only with the dangers from traumatism, but also with difficulty and occasional failure. The employment of aero-dynamics may overcome these objections. The method advised by the author is as follows: The child is placed in the ordinary position for intubation, the assistant holding his hand snugly over the child's mouth; one end of a piece of rubber tubing is snugly inserted in the nostril opposite the one holding the foreign body, the other end is inserted into the operator's mouth; the operator then blows suddenly and vigorously into the nostril and dislodges the offending body. The simplicity, cleanliness, and efficiency of this method are apparent; the child's struggles causing no traumatism.—*Pediatrics*, July 15th.

THE TECHNIQUE OF CLOSING CÆCAL FISTULA.

BY CARL BECK, M.D.,

NEW YORK.

In this era of surgical activity it was to be expected that fecal fistulæ, as sequelæ of appendectomy, should be met with much more frequently than a decade ago. Fortunately their tendency to spontaneous obliteration

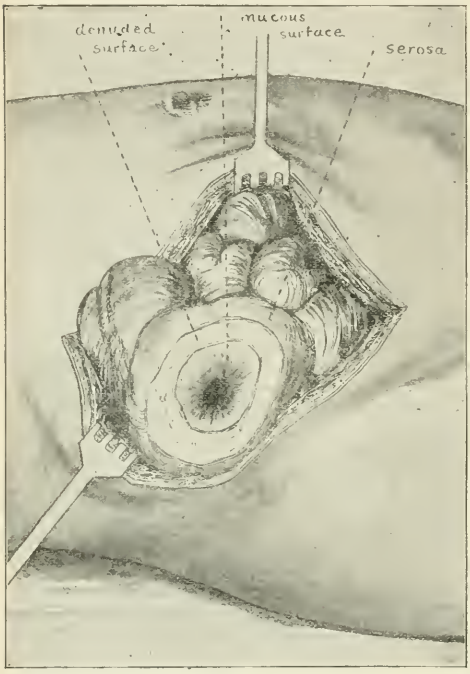

FIG. 1.

is considerable, so that with but few exceptions they close without demanding a secondary operation. But in cases in which the presence of multiple abscesses or gangrene of the walls of the cæcum has caused an extensive loss of substance, obliteration can be attained only by plastic operation.

It is obvious that such operations should consist in the direct plastic closure of the intestinal defect as well as of the opening in the integument. But the recent literature of the subject shows so many failures of this most natural and obvious method that some eminent surgeons advise abandoning it entirely, resorting finally to various kinds of entero-anastomosis. While I fully realize the difficulties of direct approximation, I do not believe them to be insurmountable, since I have succeeded in obtaining direct union in three cases in which the circumstances were not at all favorable.

In considering the technical points involved, it seemed to me that some of them were not appreciated as much as seems to be necessary. These points are thorough preparation, most extensive separation of the adherent intestine, care for a sufficiently large wound surface of the margins of the intestinal opening, straight-cut wound margins, and last, but not least, a simple but minutely applied continuous catgut suture.

The most thorough aseptic precautions should of course be taken. The patient must be well fed until the day before operation, when the intestinal canal should be well evacuated and the stomach washed out. During the last forty-eight hours digitalis is administered, and during the last twenty-four hours, if the patient be very weak, saline infusions are also given. I employ the saline infusion prophylactically in all weak patients before capital operations. It is simply wonderful how such patients generally stand even a prolonged anæsthesia, it seldom being necessary to resort to stimulants either during the operation or after it. As weak patients are liable to collapse during operation, so that powerful stimulants are required, I do not see why the most powerful of all, the saline infusion, should not be administered beforehand, thus in all probability rendering the tedious procedure unnecessary during the operation.

The discharges coming from the fistulous opening cause excoriations of the integument (Fig. 4), which are advantageously treated with a paste consisting of salicylate of zinc. If they cannot be healed, they will thus at least be rendered clean and made less irritating.

No antiseptic drug is used during the operation. The intestinal canal, above as well as below the opening, is packed temporarily with large strips of aseptic gauze, secured by strings, which easily enable the surgeon to pull them out when the intestinal suturing is nearly completed. Thus the escape of any contaminating fluid from the bowel is prevented. A still safer and easier method of preventing infection from the bowel is the temporary closure of the opening by a continuous suture, but the infiltrated-wound margins generally render it impossible to carry this out before the intestine is completely liberated.

This is effected by first circumcising the edges of the fistula far from the opening, sacrificing as much infiltrated tissue as possible, and then freeing the intestine from the adherent integumental strips and cicatricial tissue to the extremest limit. By exercising patience and keeping the knife laterally as far from the intestine as possible, or simply turning the knife, so as not to impair its walls, such liberation can be successfully achieved for a long distance. Then, after the margins of the intestinal opening have been equalized, the protruding mucous membrane is seized with forceps, pulled out, and cut off. Thus a denuded surface is left (Fig. 1) which permits the necessary coaptation of broad surfaces. Broad surfaces are the *conditio sine qua non* for complete union. If the thinness of the cæcal walls and their alteration by the adhesions and by prolonged inflammatory processes are

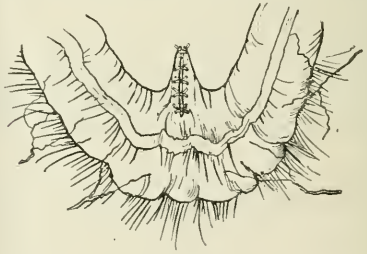

FIG. 2.

the main obstacle to immediate plastic closure, it is evident that by furnishing broad wound surfaces the chances of complete union are very much enhanced.

Extremely thin or much infiltrated portions of the intestine must be resected; then after the edges of the wound surfaces have been trimmed the intestinal walls consisting now of muscularis and serosa only, can be well approximated, so that they can be united by a double row of the continuous Czerny-Lembert suture.

First a deep row, closely touching the margin of the mucosa, but without stitching it, is to be applied; then a second row unites serosa and muscularis above (Fig. 2). After the completion of the sutures the mucosa must be coaptated well, although not sutured. The application of too many sutures should be

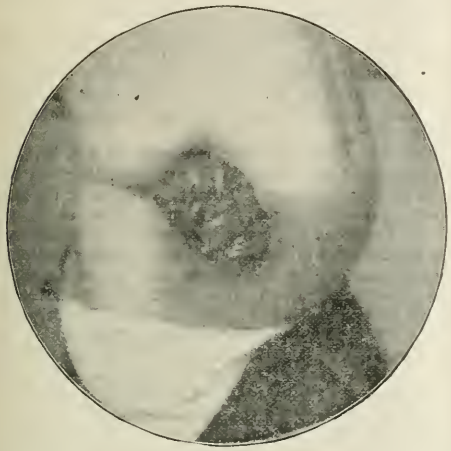

Fig. 2.

avoided, as the blood supply may become impaired and the agglutination thus become less secure.

The peritoneal edges are now to be united. This can be done only after extensive liberation, the tension sometimes being very great. If the tension persists, there will surely be separation of the wound margins. The muscular tissues and the integument are also carefully approximated, after the edges are trimmed in a suitable manner. It is advisable to unite muscles and integument rectangularly to the direction of the peritoneal row of sutures. It is understood that while these manipulations take place the neighboring intestines are protected extensively with sterile compresses.

For suture material I use the thinnest size of formalin catgut, the sterility of which after it has been boiled is indisputable.

Ice-cold milk, wine, and bouillon can be given a few hours after the operation. Opium and bismuth are administered to arrest peristalsis. Three days later soft-boiled eggs, meat, and farinaceous food may be permitted.

Case I.—A strong man, forty years of age, was taken sick January 15, 1896, with intense pain in the region of the umbilicus and of the right iliac fossa. Nausea and fever were also present. In spite of the gravity of the symptoms the patient walked about until January 29th, without consulting a physician. In a septic condition he was then admitted to St. Mark's Hospital. There were a small frequent pulse and high temperature; tumefaction and a corresponding dulness in the right iliac fossa were noted. The diagnosis was appendicitis perforativa. The operation, which was performed at once, revealed partial gangrene of the cæcum. There was a gray-yellowish pus of an offensive odor, but without a serous admixture. The appendix was not found. After the operation the patient recovered somewhat, but soon fell into a state of somnolence. Two days after the operation fæces appeared in the wound, defecation taking place now through the abdominal opening only. The temperature wavered constantly, and the pulse varied from 120 to 150. Repeatedly abscesses which formed near the cæcum between intestinal loops were opened. Then there was always slight temporary improvement, soon followed by the recurrence of septic symptoms, so that we gave the patient up at last. In the mean while an ectropion of the extent of the palm of the hand had formed (Fig. 3). Risking a last effort under ether anæsthesia, in exposing the upper wound margin I detected a small abscess which reached upward to the liver. After discharge of the abscess, the presence of which had not at all been suspected by me, the patient recovered rapidly, so that on March 20th I could proceed to the closure of the enormous ectropion. After having prepared the patient thoroughly for several days, and after having packed the afferent and deferent ostia prophylactically, I severed the intestine extensively from the adhesions, this being particularly difficult posteriorly. The freshened intestinal wound margins were adapted minutely and sewed up continuously, as described above. There was perfect union. The patient had defecated through the abdominal opening from the date of the operation on January 29th. After the enteroplasty he defecated by rectum. Only once, ten days after the last operation, fæces were found in the wound. On the following day perfect obliteration had taken place, and the patient has enjoyed the best of health ever since, except for the presence of a ventral hernia. After the separation of the intestine was perfected an intact appendix was discovered, which was slightly adherent to the peritoneum. Examination showed it to be normal. Therefore it may safely be assumed that originally there was a gangrenous process in the wall of the cæcum.

Case II.—A girl, twenty-four years of age, was admitted to St. Mark's Hospital, March 25, 1895, under the diagnosis of peritonitis. The history revealed that five days before she had been taken sick with pain in the right iliac fossa, fever, vomiting, etc. The pulse was small and frequent, the abdomen meteoristic, but in the right iliac fossa a well-marked dulness could be found on percussion. I immediately opened the abdomen, making an incision from above the symphysis to the anterior end of the eleventh rib. Gangrene of the appendix and of the cæcal portion adjacent to the base of the appendix was found. A large quantity of

Fig. 4.

thick yellow pus of strong fæcal odor was discharged. The tip of the appendix adhered to the tube, the swelling and dark red color of which indicated its direct participation in the inflammatory process. Some portions of the peritoneum showed a greenish discoloration. The intestine was covered with fibrinous membranes. A portion of the omentum, which had a

bluish-black appearance, was tied off and removed. Iodoform gauze packing. On the following day fæces were found in the wound. Later on all fæces passed through the abdominal opening. The patient recovered slowly, after it had repeatedly been necessary to open small abscesses in the immediate vicinity of the infiltrated margins. The patient suffered considerably from the excoriations of the skin (see Fig. 4), which did not yield to any medication.

On May 24, 1895, after thorough preparation, the infiltrated integument was resected in its entirety. Then the fistulous openings were sewed up and the adherent intestine was severed from its connections. The margins of the opening now having been equalized, and the protruding mucosa resected in the manner described above, the large flaps were united by two rows of sutures. Recovery was perfect. Aside from suffering from a small ventral hernia in the scar, the patient enjoys excellent health.

Case III.—A woman, sixty-four years of age, had been suffering from a large inguinal hernia for about thirty years, which became strangulated December 21, 1897. Unfortunately the patient did not submit to operation at once, so that peritonitis developed. When I opened the abdomen, December 24th, I found a large mass of intestinal loops in the hernial sac, among them the cæcum with an apparently healthy appendix. The ileum and cæcum were of a bluish-red color, and were covered with fibrinous membranes and bathed in dark serum of fæcal odor. In manipulation of the brittle intestine a rupture occurred. The vicinity had been well protected with compresses, so that the intestinal contents could escape without contaminating the abdominal cavity. After removal of the whole of the hernial sac and resection of the suspected portion of the intestine, the edges were united by Czerny-Lembert sutures. The patient recovered fairly well, but fæces appeared in the wound three days after operation. Soon an opening of more than half the size of that shown in Fig. 3 was formed, no more fæcal matter passing by rectum then. The patient suffered considerably from excoriations, which sometimes extended over the whole abdomen. On February 24th I closed the large fistula by first resecting the infiltrated margins and then liberating and sewing up the widely adherent intestine, in the same manner as described in Case II. The patient now enjoys perfect health, and there is no ventral hernia.

SCHLEICH'S GENERAL ANÆSTHESIA NOT A SUCCESS.

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LATE HOUSE SURGEON OF MOUNT SINAI HOSPITAL.

Soon after the Schleich method was introduced into this country from abroad, where it was reported to have met with such great success, it was decided to give it a fair and thorough trial in Mount Sinai Hospital, where I had the opportunity of carefully observing the administration of the above anæsthetic and of studying the effects of the same upon the general condition and well-being of the patient after operation.

Although comparatively recent, other hospitals in this city had published such very favorable results concerning the new anæsthetic and its safe administration that we began to use it, at first rather cautiously, but soon extensively—in fact, substituting it for ether and chloroform almost altogether.

Of the solutions employed, known as Nos. 1, 2, and 3, the last was used in the vast majority of cases; No. 2 being employed for patients with serious heart lesions, and No. 1 for children under ten years of age, usually.

The anæsthesia was conducted under the most favorable circumstances, the solutions being carefully prepared by our druggist and known to be chemically pure, and the anæsthetists were reliable and experienced men.

From personal observation of seven hundred cases, the report of which is entirely unprejudiced, I submit the following facts:

Firstly. (*a*) Regarding the mixture itself, the general consensus of patients is that it is not unpleasant to inhale, and those who have taken ether much prefer the former to the latter; on the other hand, the Schleich mixture does not possess this advantage over chloroform.

(*b*) The length of time required for the Schleich mixture is from fifteen to twenty minutes, rarely less and occasionally more. Ether requires about the same time; chloroform, from five to fifteen minutes.

(*c*) The mask employed is a serious disadvantage, as the Schleich mixture contains both ether and chloroform among other ingredients, and the mask must be so constructed as to allow sufficient inhalation of ether while diluting the chloroform sufficiently with air. The mask requires thorough saturation at the beginning of the anæsthesia, and the fluid often trickles down on the patient's face, causing severe burns, several of which I have noted; but this can probably be obviated with a suitable mechanical contrivance.

(*d*) The stage of excitement is less marked (though present) than with ether or chloroform, although occasionally pronounced; general relaxation is present to a greater degree than with ether.

(*e*) Irritation of the mucous membranes, especially of those lining the respiratory and alimentary tracts, during the administration of the anæsthetic is diminished with the Schleich mixture.

Secondly. During the administration of the Schleich mixture the reflexes are lost early, especially the conjunctival reflex, thereby depriving the anæsthetist of one of his most important safeguards. The patient's pulse remains slow throughout, and in the majority of cases which I have seen he assumes a generally cyanotic condition, respirations usually diminishing and the pupils being somewhat dilated. At this stage of the anæsthesia, if not carefully guarded against, general cyanosis increases, respirations become infrequent and shallow, the pulse loses quality, increasing in frequency, and the patient suddenly stops breathing, respiratory failure having ensued, and this without much warning of any kind. I have witnessed certainly half a dozen of such conditions, which included two operations for inguinal hernia, two general laparotomies, one operation for osteomyelitis of the femur, and one for hemorrhoids. In all these cases the face was markedly congested, the reflexes were absolutely absent, the hands and feet were perfectly blue and cold, but the pulse was always perceptible, though slow and feeble and at times intermittent. Artificial respiration was always resorted to, and respiratory and cardiac stimulants, such as strychnine, digitalis, atropine, and whiskey, were at once administered hypodermatically and per rectum. All of these patients, however, recovered after energetic measures were employed.

I must also mention the case of a man, fifty five years old, on whom an enucleation was being performed, whose previous health had been good, who had neither lung nor heart lesions, breathing regularly and slowly, who had taken his anæsthetic without any difficulty, and with an experienced anæsthetist at his head. Suddenly he ceased breathing, his countenance assuming a pale and waxy hue; his radial pulse was entirely imperceptible for two minutes at least, although his heart could be heard beating very slowly and feebly, about 15 to the minute. Another interest-

ing feature observed was that there was no hemorrhage whatever on removal of the eyeball, which was almost coincident with the collapse of the patient. The anæsthetic was, of course, immediately withdrawn, amyl nitrite was applied to the nostrils, and heart stimulants were injected; the chest, particularly the cardiac area, was vigorously pounded with towels dipped in cold solution, ether also being poured over the same region. The pulse thereupon slowly resumed its original character, but not before fifteen minutes had elapsed, and the patient began to breathe more frequently (no Magendie had been administered, either before or during the anæsthesia), and subsequently fully recovered from this attack. I have witnessed several cases of respiratory failure from ether and chloroform, but never cardiac, as this undoubtedly was. I am led to believe that the unconscious state approaches an extreme condition with the Schleich mixture—much more so than with ether or chloroform.

Thirdly. Direct after-effects. Patients gag and vomit to almost the same extent as with ether or chloroform, which is also contrary to what has been claimed for Schleich's mixture as an advantage. The discomfort after operation is quite as marked; it is rather the exception to note otherwise.

The period of awakening from the influence of the anæsthetic is not shortened with the Schleich mixture No. 3, as has been affirmed by some, who claimed that as soon as the operation was over and the anæsthetic removed but a few moments elapsed before full return to consciousness; this has seldom been the rule.

Fourthly. Effect upon the lungs and kidneys. We had long sought and earnestly prayed for an anæsthetic which would eliminate the dangers to these viscera subsequent to anæsthesia. Has the Schleich method obviated these dangers? Certainly not, as will be proven by the following:

Several of the patients developed bronchitis, which was followed by pneumonia in some instances. One in particular which I remember was that of a young woman who, the day after operation, developed broncho-pneumonia, which at the end of two weeks proved fatal. I have also observed several patients with conjunctivitis and rhinitis after Schleich anæsthesia.

Again, I have noted at least three instances in which the urine of the patient previous to operation was perfectly negative, and which after operation contained albumin and casts, proving thereby that the Schleich mixture must necessarily be an irritant to the kidney. The Schleich method has not obviated or lessened the above unfortunate results due to general anæsthesia.

From the foregoing remarks I must therefore conclude that Schleich's solution does not even maintain a position between ether and chloroform, as I was led to believe from the early series of cases, but must foot the others. It is certainly less free from danger than ether and even chloroform, in my experience. It produces the same baneful effects upon the lungs and kidneys, and is a marked respiratory and cardiac depressant. Whether this is due to chloroform in combination with the other ingredients or not, I cannot say, but certainly chloroform alone can be administered more scientifically and with greater exactness than when in solution with other elements, as it is in Schleich's mixture.

The only advantage of the Schleich mixture is its pleasant inhalation, although it is often disagreeable to the surgeon and the bystander. With ether this can be modified by preceding the ether inhalation with a few whiffs of chloroform.

It has been claimed that the Schleich mixture can be administered with safety in serious heart lesions. The incident I have mentioned above disproves this statement, and in a patient with a perfectly sound heart; whereas I have seen chloroform administered in severe cardiac disease without bad results.

I must also add that, owing to the above poor results, we are gradually withdrawing the Schleich mixture from the operating-field and returning to our old friend and standby—chloroform.

Since leaving the hospital, I have learned that the Schleich method has been practically abandoned, and one of our leading surgeons has pronounced it to be an utter failure; also, one of its strongest advocates on its introduction into this country is thoroughly disappointed with its results.

I feel that the foregoing remarks will be substantiated and strengthened by future experiences, and that the Schleich method will be relegated to where it belongs in the order of efficiency.

I am indebted to Dr. A. G. Gerster for kind permission to use the statistics upon which this article is based.

166 East One Hundred and Sixteenth Street

TUBERCULOSIS OF THE MAMMARY GLAND.

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The comparative rarity of this disease, in both primary and secondary forms, in large measure accounts for the meagre literature on the subject, especially in text-books. Of late the reports of cases in the various journals have seemed to awaken more interest and should serve as an incentive to further study of this manifestation of tuberculosis. It is closely allied and quite similar clinically to tuberculous adenitis elsewhere in the body, but it differs from the latter in one most important respect, namely, in diagnosis, since we are obliged to differentiate this affection from the various mammary neoplasms.

An examination of the literature on the subject shows that there have been reported fifty-eight authentic cases, while twenty-three others are reported as of mammary tuberculosis but lack positive and conclusive proof.

The etiology of this disease is of considerable interest. From the record of cases it appears that 89.6 per cent. occur in females and 10.4 per cent. in males. This rather disproportionate ratio between males and females, one to fourteen or thereabouts, doubtless will not be found to remain constant, and from a comparative standpoint seems rather accidental than otherwise. The infrequency of functional activity of the male breast or its exposure to infection by unwholesome practices would seemingly limit the number of cases to those of secondary nature, or, if primary, produced generally through injury. The ratio of one to forty-two, existing in adenoma and carcinoma, will doubtless be found to apply more nearly to tuberculosis, when there are more cases from which to draw deductions. The disease is most common between the ages of twenty and thirty-five, during a period when menstruation and glandular activity are thoroughly established. Cases have occurred before and after the menstrual life of patients. Roswell Park reports a case in a girl of twelve. The diagnosis was made by exclusion and the disease was supposed to be secondary. My own case occurred in a woman over forty years of age, whose menstrual activity had ceased. The number of patients who have borne children is somewhat over one-half. Persons of tuberculous tendencies are of course more prone to the disease. Davis and others report cases that originated during pregnancy. Mammary tuberculosis may be primary, depending upon infection through the milk ducts or through fissured nipples; or secondary, the disease

extending from contiguous foci of infection in the chest, ribs, or pleura, or through the lymph channels and blood supply.

Pathologically considered, the disease presents several interesting features. The axillary lymphatics are enlarged in three-fourths of all secondary cases and are frequently the site of the first manifestations of infection. In other instances axillary involvement may be apparently absent. Frequently a chain of enlarged lymphatics running from a nodule in the breast into the axilla can be easily demonstrated and occasionally the cervical glands also are affected. The terms discrete and confluent, applied by some writers, seem to be somewhat useless as pathological classifications; the tendency is most frequently toward a confluent condition, depending upon the length of time the infection has run. There have been instances in which adenomata, some taking on carcinomatous changes, have become tuberculous. The microscope will serve to establish the identity of the disease and will demonstrate tubercle bacilli either in the pus or in sections taken from the growth. The usual microscopic appearances of tuberculosis in gland substance are to be seen. We find typical tubercles with accompanying round-celled infiltration, epithelioid and giant cells with bacilli in them and in the connective tissue. There usually exists extensive proliferation of connective-tissue corpuscles. The common evidences of caseation, softening, and liquefaction are always to be found, though frequently quite late in the course of the disease. In many cases a period of five or six years may elapse before the occurrence of such changes, though usually a shorter time suffices. Secondary infection is common and various forms of pyogenic cocci are to be found in the discharges. There is a marked tendency toward the formation of obstinate fistulæ, particularly when the breast has been allowed to drain itself.

The symptoms are pain and tumor. In nearly all cases pain is a marked characteristic, and instances of painless tuberculous mastitis are very rare. Shattuck's case is one of these. His patient was a young unmarried woman who carried a painless nodule on her breast for six years, at the end of which time the growth was removed and found to be tuberculous. The pain is described as being sharp and lancinating and radiating to the arm, but more or less spasmodic. Usually pain is the first indication of the disease. A feeling of discomfort is produced by the patient's clothing, and there is a constant sense of uneasiness and weight in the gland. The breast is extremely sensitive to pressure. The tumor may consist of one or more nodules, firm, hard, and freely movable with the gland. The axillary lymphatics may or may not be enlarged. The skin may be freely movable over the growth but frequently is attached. It may be red or mottled in appearance, particularly in the later stages when softening is taking place. The nipple may or may not be retracted. Occasionally the entire breast becomes involved in one large nodular, unyielding, brawny mass, but as a rule the process is confined to the nipple area or some particular quadrant, generally in such cases the upper and inner, where the process extends from foci in the axillary lymphatics.

The diagnosis is usually difficult. Its importance should not be underestimated. The question becomes a most important one in women between the ages of thirty and forty, when the differentiation between tuberculosis and carcinoma is imperative. Under certain conditions it becomes impossible to distinguish them clinically, so similar are the leading characteristics. There is scarcely any disease of the breast with tumor with which this condition may not be confounded, be the case one of chronic inflammation, gumma, cyst, cancer, sarcoma, etc. Infallible means of differentiation are the microscope and bacteriological culture, which will clear up the diagnosis, no matter how complicated or perplexing the case may be under less exact methods of examination. The leading points of differentiation need not, therefore, be mentioned. When fistulæ already exist, the diagnosis is simplified. When softening can be detected, it is always well to aspirate, even when the nature of the disease is reasonably assured, in order that the diagnosis may be confirmed.

The prognosis in cases of primary involvement with or without axillary enlargements is good. In cases in which the growth is secondary the prognosis depends upon the amenability to treatment or removal of the primary source. The dangers of operative measures are slight when the general health of the patient is not seriously impaired.

The treatment consists in the entire removal of the gland, together with a wide margin of skin and all axillary lymphatics, when it can be demonstrated that they are involved. It may be difficult to convince the patient that such radical measures are necessary, particularly when she is assured that the disease is not cancerous. It is always well, consequently, to lay considerable stress on the danger of allowing tuberculous processes to continue. In primary tuberculosis of the gland it may suffice in some instances to incise and drain all suppurating foci and thoroughly curette the walls of the abscess cavities. Particularly will this treatment well apply in cases in which there is no apparent axillary involvement. This method should always be secondary, however, to a radical operation when it will be allowed. In the secondary variety of the disease the surgeon must decide how much operative interference the patient will be able to endure. The primary seat of trouble may be in the lung, and in such cases the removal or mere incision of the breast, even for the relief of pain, must depend on the strength of the patient and the length of time the original focus has been active. In weak or young patients palliative measures may be tried and the breast treated by applications containing resorcin or ichthyol, with perhaps belladonna or opium for the relief of pain.

The following is a case of primary mammary tuberculosis:

Mrs. T——, Scandinavian, forty-one years of age, widow; family history entirely negative. She was married at the age of twenty-five. She has always been in good health and regular in habits and functions. Her height is five feet and two inches; weight, about one hundred and twenty-five pounds. She was slightly anæmic but well nourished. She has four living and healthy children. Her husband, a man of good health from all reports, was accidentally killed in the spring of 1896, six weeks before the birth of her last child. A few months previous to her last conception there had been considerable irregularity in menstruation, with amenorrhœa at times. She carried her child to full term and had an easy and normal labor. She has not menstruated since. Her baby was weaned in January, 1897. She has nursed her children, using both breasts, in which there was always a full supply of milk until her third child was born in April, 1895. At this time the right nipple became sore and she noticed a scarcity of milk and a general tenderness in the right breast. The nipple gradually became retracted and attempts to draw it out gave her considerable pain, so she abandoned the use of that breast altogether. The nipple has since remained retracted. At the birth of her last child the right breast was not used at all, there being no evidences of activity in the gland.

In January, 1897, eleven months after her last confinement, her attention was called to the right breast

by a slight feeling of soreness, and she discovered a sensitive lump about the size of a hazelnut in the upper and outer aspect of the gland. The lump was of slow growth and had attained no larger proportions by March, when she first consulted a physician. I saw the patient in April for the first time. In the inner aspect of the gland a second mass was felt, small, hard, and irregular in outline, movable with the gland, and not involving the overlying skin. A week later the growth had become further disseminated, involving the lower segment of the breast. Some small enlarged glands could be demonstrated in the axilla. She described the pain as being spasmodic in character, sharp and darting, radiating toward the arm, with a continuous sensation of uneasiness and weight, increased by tight apparel. A fortnight later the entire gland appeared to be affected and the overlying skin had assumed a red, mottled appearance, and was attached to the growth in various places. The malignancy of the growth was not doubted, and an operation was advised and accepted. All appearances indicated that, whatever the nature of the trouble, the removal of the breast was necessary. On May 1st, the patient was prepared for operation. It was observed that in three or four places the growth had softened and fluctuation could be detected. Exploratory incisions were made in the softened tissues and about an ounce of pus and considerable cheesy débris were evacuated. The walls of the abscesses were thoroughly curetted. These walls presented a peculiar appearance. They were pearly white, quite anæmic, and of a decided resistance and density to the touch. The knife penetrated with difficulty, yielding a sensation as if it were passing through cartilages. A portion of this tissue together with a sample of pus was sent to Dr. A. S. Warthin at the University of Michigan for examination, who reported the case to be one of mammary tuberculosis. The tissue bore no resemblance to breast tissue, so thoroughly had the morbid process crowded out the gland structures. The patient improved immediately after these tentative operative measures. The relief from pain was complete, and in two weeks' time she was discharged. The incisions had healed, though there was considerable induration still existing in various portions of the gland.

The patient was again seen at the end of August. She looked much better and had better color. She ate and slept well. The breast gave no trouble and was not sensitive to touch or pressure of her garments. On examination no enlarged axillary glands could be detected. The breast itself was smaller than its fellow, but of normal consistence. The cicatrices alone were a trifle dense.

The patient has reported to me in August, 1898, just one year later, that she is perfectly well, and has had no trouble in her breast since it healed.

133 North Spruce Street.

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SOME OF THE SPECIAL GERMS IN INFLAMMATION OF THE MIDDLE EAR, WITH AN INTERESTING CASE.[1]

By WILLIAM CHEATHAM, M.D.,
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It is my purpose in this short paper to refer to the less common germs found in suppurative inflammation of the middle ear, mentioning only casually the more common ones, the streptococci, staphylococci, etc. Of course, in diphtheritic inflammation of the middle ear, the presence of the Klebs-Loeffler organism can be demonstrated; this form of inflammation may be either primary or secondary. If we have tuberculosis of the middle ear the bacillus can be demonstrated. The insidiousness of middle-ear trouble from this cause is one of its chief symptoms, as it is in such involvement in other parts of the body, since "freedom from reaction is possessed by the phthisical organism." Some say the diagnosis can be made by this symptom, and the location and appearance of the perforation. The possibility of a primary tuberculosis of the middle ear indicates the importance of bacteriological investigation.

In ten cases investigated by Milligan,[2] eight, or eighty per cent., were tuberculous. Buck[3] gives three common symptoms of tuberculosis of the middle ear: first, the tendency to localize itself in the vicinity of the upper and posterior portion of the membrana tympani; second, the marked insignificance of the pain, or even its entire absence; third, the intolerance of any but the simplest and gentlest local remedial measures.

Field[4] says: "The specific organisms of scarlatina and measles are occasionally, but not invariably, to be found when these respective diseases are complicated with aural discharges."

Roher asserts that in non-fetid discharges cocci alone are found, but in fetid discharges bacilli and cocci are found together; however, fœtor is not necessary to dangerous sequelæ.

Zaufal and others say that in otitis media acuta, due to cold and catarrhal extension from the nasopharynx, the pneumo-bacillus of Friedländer and the diplococcus of Fränkel play an important part. The bacillus of Friedländer has lately excited much discussion. The following extract concerning it is taken from the editorial of *The Journal of the American Medical Association* of April 23, 1898:

"**The Bacillus Mucosus Capsulatus (Bacillus of Friedländer).**—Since the first description by Friedländer in 1883, and by Weichselbaum three years later, of an organism which was first called a coccus (pneumococcus of Friedländer) and later regarded as a bacillus, occurring in acute fibrinous or croupous pneumonia, this bacillus has been found by many observers in various inflammatory processes in the lungs and other organs. As specific characteristics of this organism were pointed out its raised mucus-like growth on agar and blood serum, its nail-shaped growth on gelatin, its yellowish-gray growth with gas formation on potato, its failure to coagulate milk, absence of indol reaction, and decolorization by Gram's method of staining. It was generally found to be constantly pathogenic for mice, variably so for guinea-pigs (fatal in about one-half of the cases), rabbits, and pigeons; and, finally, its polymorphism and capsule formation were regarded as quite specific. From time to time bacilli differing in some respects from the foregoing description have been met with in pneumo-

[1] Read before the Mitchell District Medical Society, West Baden, Ind., July 21, 1898.
[2] British Medical Journal, November 16, 1895.
[3] Page 404.
[4] Page 219.

nia and other affections, especially in inflammations of the middle ear and upper air passages, as well as in the peritoneum, liver, kidneys, and bladder, and lately also in the accessory sinuses of the nose. For these reasons there have often appeared in recent literature descriptions of a new bacillus, pathogenic for man. Most of the authors have pointed out the striking similarity between these various organisms and the bacillus of Friedländer. More or less striking differences in growth and other characteristics have nevertheless been assigned as sufficient reasons for establishing new classes. Fricke has been able to collect from the literature twenty-two bacilli which resemble the bacilli of Friedländer. He points out the many identical features and includes them in one group, with that of Friedländer as the type. He proposes as a name for this group the bacillus mucosus capsulatus. He has found such organisms thirteen times, often mixed with pus cocci, in the tympanic cavities of thirty-two cases of otitis media, in one case in the antrum of Highmore, in ulcerative endocarditis, in the stools in seven cases of gastro-enteritis. He makes the differences in the pathogenic actions of these bacilli the basis for two groups. In the first group he places those bacilli that kill white mice after subcutaneous inoculation, and which have none or only a passive pathogenic action when inoculated into the abdominal cavity of guinea-pigs and rabbits. In the second group are included those forms that are not pathogenic for mice on subcutaneous inoculation. Most of these were pathogenic for guinea-pigs."

W. C. C. Pakes, in the *British Medical Journal*, gives the morphological characters exhibited by this bacillus of Friedländer in some cases of pharyngitis and tonsillitis, as follows: "(1) Non-motility. (2) Polymorphism. (3) Decoloration when stained by Gram's method. (4) The presence of a well-developed capsule, especially when taken from the heart blood of the inoculated mice after death. The cultural characters were as follows: (1) Whitish, semi-translucent, sticky growth in bouillon. (2) Aerobic and anaerobic growth in gelatin, causing no liquefaction. (3) Whitish, moist, raised growth on slanted gelatin, the growth slipping to the bottom of the tube after four or five days. (4) Abundant gas production in glucose-gelatin stroke cultivation. (5) Slimy and almost transparent growth on agar and blood serum. (6) Formation of acid in dilute lactose bouillon. (7) Coagulation of milk with an acid reaction (in four cases before the ninth day, in one case on the eleventh day). (8) Brownish abundant growth on potato."

In regard to its pathogenicity, Dr. Pakes says that "mice were inoculated at the root of the tail, with a small quantity of a young agar culture from each case. In two cases the mice were dead on the second morning; in the other three cases they were dead on the third morning. The typical capsulated bacilli were found in the heart blood and spleen of each mouse, and from the heart blood pure cultures were recovered."

Just here I wish to report a case of acute suppuration of both middle ears, the left resulting in attic trouble, the pus showing externally about on the level of the superior edge of the external auditory canal posteriorly. A free incision was made, and drainage established; the patient made a perfect recovery in several weeks. The point of interest in the case, however, was the presence of a pure culture of the diplococcus of Weichselbaum, the description of which is given in the accompanying letter of Dr. H. H. Koehler, who made the investigations. It will also be observed from this letter that the disease started as an acute tonsillitis, in which there was also a pure culture of this diplococcus.

"Louisville, Ky., January 19, 1898.

"*Dr. William Cheatham, Louisville, Ky.*

"My Dear Doctor: It affords me great pleasure to comply with your wish in reference to the bacteriological aspect of the case of B. I——. When I first saw the patient both tonsils were much enlarged, the follicles containing a thick cheesy material, some of which I inoculated upon the Loeffler blood-serum mixture for diphtheria bacilli. An examination of the resulting growth disclosed that the organism was a diplococcus and in a state of pure culture, none of the ordinary pus germs being present. Neither were there any Klebs-Loeffler bacilli to be seen at any time. It is very unusual to obtain a pure culture from throat secretions; doubly so to obtain one from a diplococcus.

"Further to isolate and reveal any possible contamination, I made a number of plate cultures, but each resulting colony proved again to be only the diplococci as first seen. The patient by this time having developed a severe otitis media, some of the pus from the ear was sown on the blood-serum mixture, with the result of obtaining once more a pure culture of diplococci.

"This diplococcus on further investigation proved to be beyond a doubt the diplococcus of pneumonia of Weichselbaum, the other names for the same being micrococcus of sputum septicæmia Fränkel; lancet-shaped micrococcus of Talamon; micrococcus pneumoniæ crouposæ Sternberg; streptococcus lanceolatus Pasteur. Gabbi, in 1889, obtained this coccus in pure culture from a case of tonsillitis. In otitis media it has occasionally been found—by Zaufal in six cases, by Levy and Shrader in three cases, by Metter in five cases. It has also been found in an arthritis complicating a pneumonia. This coccus is a facultative anaerobic, growing well on glycerin-agar, blood serum, and gelatin, which it does not liquefy. It is always seen in pairs or a chain of pairs, a distinct halo surrounding the two.

"There being but one organism present in this case, it is but reasonable to suppose it to be the cause of the inflammatory troubles. It is a frequent inhabitant of the healthy mouth, and at times contaminates to a slight extent other cultures made from throat material.

"In conclusion, I wish to emphasize that the diplococcus of pneumonia must not be confused with the so-called pneumococcus, from which it differs essentially. The pneumococcus is misnamed, it being the bacillus pneumoniæ of Flügge.

"Respectfully,

"Henry H. Koehler."

This report of Dr. Koehler's is certainly of much interest. From it and the investigation of Milligan and others, it would seem proper to examine more frequently than we do the secretions from suppurative inflammations of the middle ear, and especially in those cases in which we might suspect tuberculosis.

The Elimination of Morphine.—Morphine is eliminated chiefly by the bowels, to a small extent by the kidneys, and still more slightly with the saliva. The man who would use the stomach pump in a case of poisoning by hypodermic injection of morphine would, by most people, be set down as an ignoramus; but he would be right, for it has been shown experimentally that, when the drug is administered subcutaneously, much of it is eliminated by the stomach—in fact, by repeatedly washing out of the stomach, more than half the quantity injected may be recovered.—William Murrell, "A Manual of Pharmacology and Therapeutics," p. 297.

A PRACTICAL MODE OF ADMINISTERING IODINE HYPODERMICALLY IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

By CHARLES WILSON INGRAHAM, M.D.,
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The hypodermic administration of therapeutic agents insures the immediate and complete absorption of the remedies injected. Further than this, it insures the highest degree of therapeutic potency. Hypodermic medication is, in fact, a truly scientific procedure of a most practical and serviceable nature, and is applicable to the treatment of a large range of acute and chronic diseases.

It was at a comparatively recent date that hypodermic medication came into general use in the continued treatment of chronic diseases, but it has been shown that there is no disease or morbid condition in which it is of greater usefulness than in pulmonary tuberculosis. It is now six years since I became interested in the treatment of the disease by hypodermic medication, during which period I have devoted much of my time to this branch of practice, and it is the object of this article to set forth my experience therein. I have long since come to regard hypodermic medication as solving many of the difficulties attending the treatment of tuberculous diseases, and its value I hope to be able to prove to the satisfaction of my readers.

In the first place, hypodermic medication is superior from the fact that it relieves the stomach of the necessity of digesting the therapeutic agents, which otherwise must pass through the stomach and assimilative organs. It is well understood that tuberculous diseases have a peculiar degenerative effect upon the functions of the gastric organs, which renders them unable properly to digest and assimilate the common food products, upon which the nourishment of the body depends.

This constitutes one of the most important reasons why hypodermic medication should be employed in the treatment of tuberculosis. The maintenance of general nutrition is eminently important for success, and the physician must concentrate his best energies upon securing and maintaining this in the highest possible state of efficiency. There is no possibility of any treatment being permanently successful if, in consequence of its administration, the factors which sustain general nutrition must suffer. By reserving the gastric functions for the support of general nutrition, and securing the continued introduction of necessary therapeutic agents through other channels, we have accomplished much toward final success in the management of each and every individual case of tuberculous disease.

Next in importance in favor of hypodermic medication is the fact that remedial agents hypodermically administered are assimilated in a condition which insures their most powerful medicinal action.

My chief dependence in the treatment of tuberculosis is placed on the local and constitutional effect of iodine hypodermically administered with regularity. Iodine is too well known to require an extensive introduction here. It is a remedy which has been widely employed for generations, and as a valuable and generally useful antituberculous agent it is more easily underestimated than overestimated. Its effects upon the system when hypodermically administered, as compared to its effects when administered by the stomach, are far superior. Iodine, administered by the stomach, is very apt to induce more or less serious gastric irritation, which will prevent its continued use in the majority of tuberculous cases. Then, again, as before stated, its medicinal effect is very inferior, and the prompt and thorough antituberculous results observed following its hypodermic use are seldom seen when the remedy is administered by the stomach.

Without entering into the scientific details of the subject, I would state that, used in the incipient stages of tuberculosis, iodine, hypodermically administered, systematically and continuously, for a sufficient length of time and in proper dosage, will in the large majority of cases quickly bring the progress of the disease under safe control, and eventually, by its alterative and reconstructive effect upon the tissues and fluids of the body, bring about a permanent healing of the pulmonary or laryngeal lesions, as the case may be. I do not think that iodine exercises a direct antituberculous effect, but rather that its control over the tuberculous processes is brought about by a modification of the tissues and fluids of the body, especially of the glandular system; and secondarily, through its re-establishment of a condition of general and local nutrition, approaching, if not reaching, the normal.

I find that in some text-books it is claimed that iodine exercises a direct action in tuberculous cases, by removing effete material from the tissues and rendering them less favorable for the development of the tubercle bacilli. I have employed iodine alone and in combination, in oil solution and in alcohol solution, and during the past five years have used a compound of iodine expressed in the formula herein contained. Especially have I found oil of peppermint, or its derivative, menthol, of great value used hypodermically in oil solution in combination with iodine. I first used iodine and menthol separately, but for some time have used them in combination. The formula of the iodine compound, upon which I depend almost exclusively in the treatment of tuberculosis, is as follows:

℞	Iodine	gr. $\frac{1}{2}$
	Bromine	gr. $\frac{1}{14}$
	Phosphorus	gr. $\frac{1}{100}$
	Thymol	gr. $\frac{3}{8}$
	Menthol	gr. $\frac{3}{8}$
	Sterilized oil	ʒ i.

The commencing dose of the formula is fifteen minims, while the maximum daily dose is one fluid drachm. The injections are never given oftener than once daily.

As is well known, iodine is an agent of wide chemical affinity, and when menthol and thymol are brought into its presence a chemical reaction occurs which deprives the iodine of its characteristic irritating properties and renders its hypodermic injection practically painless; whereas, in its natural state, iodine, when injected under the skin, induces severe pain and after-soreness at the site of injection. This compounding of the iodine results in a cherry-colored and perfectly transparent solution.

It is important, in the preparation of this formula, that the highest degree of chemical purity should be secured, and it is equally important that the most thorough antiseptic precautions should be constantly observed. Rancidity of the oil used should be guarded against.

It is not generally understood that menthol and thymol are each nearly as powerful germicidal agents as carbolic acid, and while they respectively possess this important germicidal potency they are each ten times less poisonous than carbolic acid. Hence with this iodine compound a very powerful local and constitutional effect is secured from the menthol and thymol.

Another factor in favor of the use of menthol hypodermically is that it is eliminated to a considerable extent through the lungs, and the odor and taste of menthol are frequently noticeable to invalids for several hours following the administration of the daily injection.

The fact that menthol, hypodermically administered,

is principally excreted through the lungs, is of great importance when considered in relation to the treatment of pulmonary tuberculosis, and it is a fact which I believe has not been previously reported, although it has been shown that oil of peppermint, administered internally and by inhalation, exercises a very powerful antituberculous effect in pulmonary and laryngeal tuberculosis.

Concerning the administration of the injections, it will be necessary only to state that they are given principally in the shoulders, from which location, on account of a minimum of muscular activity, but little soreness develops.

On account of the non-irritating action of the fluid, very little trouble occurs at the site of the injections. Their effect is almost immediately apparent, and is first manifested in the checking of the tissue waste peculiar to tuberculous disease and in a consequent rapid gain in flesh. As a rule, a decisive gain in weight is noticeable during the first two or three weeks of treatment. This gain in flesh, which is an indication of returning general nutrition, continues in curable cases to the point of normal weight, and coincident with this improvement the distressing symptoms of the disease disappear. The fever and night sweating are among the first to vanish, showing a decisive effect upon the toxins of the disease. Expectoration is promoted, and irritating or unnecessary cough in this manner relieved.

In all cases I administer the most thoroughly nutritive remedies in connection with a nutritious and easily digested diet.

If the patient is properly managed as concerns exercise, occupation, and environments, and a suitable course of nutritive treatment is employed, together with the systematic hypodermic administration of the formula given above, a splendid percentage of recoveries will follow and the permanency of recovery will be equally satisfactory.

I will report one case of typical pulmonary tuberculosis, hypodermically treated with the iodine compound, which practically illustrates the method advised.

Case I.—Patient, a man about thirty-two years of age; occupation, farmer. The history showed that he had contracted a severe cold, from which he did not recover, and which subsequently developed into tuberculous disease of the lungs. He had been under very thorough general treatment, with little or no benefit, as the disease had continued with progressive loss in weight and strength. Examination of the chest showed a very limited movement, with contracted walls. Percussion gave dulness over the apices of both lungs, while on auscultation respiration of a bronchial character was heard over the areas of dulness, with more or less complete absence of the vesicular murmur. Crepitation was present throughout the affected areas.

The iodine-compound injections were begun in December, 1892, and continued until March of 1893. At the end of the first month the patient had made a very apparent gain both locally and constitutionally. The cough was much improved, and expectoration had diminished in quantity and in degree of purulence. The fever and night sweating were also diminished, and there was a noticeable gain in weight. When treatment was discontinued, the following March, the cough, fever, night sweating, and other symptoms had disappeared some weeks previously, and the patient had gained about twenty pounds, having reached his normal weight. During the course of treatment I had encouraged him to practise chest gymnastics, and his chest expansion had increased from two and one-half to five and one-half inches. Examinations of his chest made at the time treatment was discontinued, and likewise several months later, showed an absence of the tuberculous disease, with resumption of the normal functions throughout the formerly affected areas.

The patient, whom I have carefully kept sight of since discharging him from treatment, has remained strong and well in every respect, and there has been no return of symptoms of pulmonary disease.

August 12, 1898.

Progress of Medical Science.

Vomiting of Pregnancy.—Dr. Bacon concludes an article in the *American Journal of the Medical Sciences* for June as follows: (1) The abnormal irritability of the nervous system, including the vomiting centre, is to be allayed by keeping the patient in the horizontal position; by attention to the skin, bowels, and kidneys; rectal and, if necessary, hypodermic injections of salt solution being used. (2) The hysterical condition, which is so commonly found present, should be controlled by strengthening the will and influencing the dominant ideas of the patient. (3) All sources of peripheral irritation should be discovered and treated. (4) In extreme cases subcutaneous saline injections serve a threefold purpose: (*a*) diluting the blood and increasing vascular tension; (*b*) eliminating toxins through renal and intestinal emunctories; (*c*) furnishing two most important kinds of food. (5) Induction of abortion is never indicated. At a stage when it is safe and efficient it is not necessary, and in extreme cases it adds greatly to the danger, rarely stops the vomiting, and can be avoided by the use of artificial serum.

Production of Immunity.—Whatever method be used, the following points are now almost proved: (1) the immunizing substances are in all probability of a proteid nature; (2) sterilized cultures or filtrates deprived of their specific poisonous properties may have a marked power of producing immunity; (3) an inoculated animal is for a short time after inoculation more susceptible to an attack of the specific disease, but as soon as this stage of susceptibility has been passed the resistance is increased; (4) whatever specific bacteria are used, either in the virulent or the attenuated form, the aim is to produce a mild attack of the disease, as a result of which the animal is immune; (5) the period required for the acquisition of immunity is in this case much greater than when antitoxin blood serum is used, in which latter case a protective influence is recognized almost immediately, or, at any rate, in the course of a few hours; (6) it is found, however, that the immunity so produced (the passive immunity of Ehrlich) is more transient than that obtained by inoculation with microorganisms or their products; (7) the blood serum of naturally immune animals has not yet been proved capable of producing immunity when injected into susceptible animals.—Dr. German Sims Woodhead, Treves' "System of Surgery," vol. i., p. 23.

Influenza in Children.—Dr. L. Fuerst (*Deutsche Medizinal-Zeitung*) recommends salipyrin, to which he attributes almost specific action. To obtain good results it is of prime importance that salipyrin be given at once and in not too small doses. He generally prescribes for small children (up to five years) 0.25 *pro dosi* (four grains); older children (five to ten years) 0.5 *pro dosi* (eight grains); still older children (ten to fourteen years) 1 *pro dosi* (fifteen grains), to be given three times a day in hot tea. Generally, after two days it suffices to use it only twice a day, and with this he continues until three or four days after the beginning of convalescence, the child, all the while, being kept in bed.—*The Medical Bulletin.*

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SOME OF THE MEDICAL LESSONS OF THE WAR.

THE recent war has been productive of new and instructive lessons for the future. This is particularly the case in reference to the proper care of the sick and wounded, in which the medical profession of this country, for humanity's sake and for its own good name, has the deepest concern. The widespread criticism of the management of the medical department of the army, however justly based, has assumed the ominous proportions of a public scandal. Whoever is to blame, there is no doubting the fact that the sick soldier has been most outrageously neglected. No one doubts that there was great mismanagement somewhere and by some parties, who should be made responsible for the gross neglect of duty which occasioned the privation and suffering of the men who had a guaranteed right to expect the best of care. Unfortunately for the medical department of the army, as the matter concerns the care of the sick and wounded soldier, the surgeon-general has been compelled to bear the brunt of blame and has been kept busy in explaining why what appears to the public to have been his duty in the premises was not properly performed. While no attempt can be made now to forestall opinion in view of a pending inquiry, enough facts have been brought forth in the controversy to prove the necessity for an entire reorganization of the medical service.

There are certainly many circumstances extenuating the charges of culpable negligence which deserve to be suggestively considered in the light of necessary reforms. There is no doubt that red tape, lack of system, and conflict of authority have had very much to do with the results in question.

It would appear from the testimony of such as have been charged with neglect of duty that the army in Cuba was a mere picnic of undisciplined troops, without suitable supplies of food, medicines, or surgeons, and without a responsible executive head. It is claimed that ample provisions were made for emergencies in different lines, but when the need for them became urgent the means for help were not at hand. Why this difficulty was not obviated as soon as it was discovered is not yet satisfactorily explained.

There is no doubt that there was much difficulty experienced in the transportation of supplies, but why this was not remedied as soon as discovered is also an open question. The surgeon-general blames the quartermaster's department, and the latter in turn shifts the responsibility on the medical department. Whoever is responsible for this, the fact remains that many of the supplies not only failed to reach their destination, but were actually sent home unused by anybody, while hundreds suffered and died for want of them.

The lesson to be learned from this is that no opportunity should be afforded in the future for thus shifting respective responsibilities. If the medical department had control of its own transportation of supplies, the surgeon-general would have been left without any possible excuse for not performing an obvious duty. In a general sense it is only fair, when great responsibilities are thrust upon an officer of the army, that he should have the power to discharge them.

The lack of competent surgeons for any campaign should never again be an excuse for neglect of needful ministration to the inmates of camp and hospital. The greatest possible care should be exercised in the selection of such men. As it was, the surgeon-general has been forced into the anomalous position of complaining that many of the men, who were presumably selected by himself, were inexperienced and incompetent. A great deal of this inefficiency on the part of the volunteer and contract surgeons was due to the fact that they were not properly officered by the regular army surgeon, who is trained to executive duties and knows the value of discipline. It is certainly a reflection on the intelligence, skill, and training of the regular army surgeon that it should be found necessary to outrank him in so many instances by the appointment of civilian practitioners to important and responsible positions. If there is any criticism or suggestion to be made on this score of inexperience of the newly appointed volunteer surgeons, its main reason is that the regular army surgeon was left too much in the background. It needs no argument to prove that the man who has been trained all his professional life to field, camp, and hospital duties should be the one to control and direct the fresh recruit.

It has also been proven that there is very much yet to be learned in the matter of camp sanitation. If there is any doubt on this subject, we have but to study the frightful prevalence of typhoid fever in all the localities where the soldiers have been congregated. The only seeming chance for a soldier to be gazetted is when his name appears on the mortality list. The country has been full of such silently suffering heroes. Here also is manifested the necessity for the selection and sanitary control of such camps by the medical authorities of the army. It is charged, with abundant opportunities for reasonable proof, that most of these selections were the results of political jobbery. In view of the deplorable unsanitary condition of most of them, it is impossible to believe that any well-qualified medical officer could have been guilty of such ignorance and stupidity as to advise their occupation.

While it must be frankly acknowledged that when typhoid fever attacks any camp it is liable to spread, it must also be admitted that there is no chance whatever of keeping an epidemic within bounds when such

a shameful lack of sanitary precautions was everywhere evident. The whole system of camp sanitation requires to be reorganized. We are tired of hearing it was this or that man's fault. If there is no one who can be made responsible for this wrongdoing thus far, let us see to it in future that some regulations are made and enforced which shall make a repetition of many of the errors of the past war inexcusable and impossible.

THE INVESTIGATING-COMMITTEE AND THE CONDUCT OF THE WAR.

The committee appointed by President McKinley to investigate the war scandals of neglect of the sick and wounded soldier, has commenced its work by the formulation of some questions to be answered by the different heads of departments. Although these inquiries appear to cover a great deal of ground, they are in reality too general in their scope to be of any real value. Those referring to the medical department of the army are particularly open to the objection of being for the most part indirect in their aim and quite unpromising in their results. While there is a disposition on the part of the committee to make the examination as comprehensive and as thorough as the circumstances will admit, its powers are necessarily limited, not only by virtue of its appointment as a part of a political machine, but also from the fact that it can have nothing more than a nominal authority to summon witnesses and none whatever to administer oaths. It is easy to see how under such circumstances no examination can be thorough enough to yield any practical outcome of radical reform. Whatever the verdict may be, it will be of necessity incomplete. The only committee to try the case is one appointed by Congress, and one which can call even the President himself to account.

THE FLY AS A PROPAGATOR OF TYPHOID FEVER.

The study of the numerous epidemics of typhoid fever in our various camps has developed an unusual amount of interest in the widely varied etiological conditions associated with their development. Every practitioner throughout the country, for obviously good reasons, never tires of collecting new facts, of examining new theories of the disease, and of applying new preventive measures against its insidious spread. The prevalent theory that a contaminated water supply is the main source of infection hardly needs additional proofs of its tenability, but the numerous and indirect ways in which the microbe can enter the system through the alimentary canal have hardly received the attention which they deserve. With the broader views of the many and complex causative influences regulating the extension of the disease, there is hardly an end to the number of conjectures which may fit the possibilities of the case. In the light of such considerations, it would appear almost impossible for any one to escape an attack at some time or other, so long as he or she is in any kind of contact, directly or indirectly, with men and things. Infected milk and food supply, soiled clothing, unclean utensils, careless disposal of dejecta, bad drainage, unwashed hands of attendants, and even the otherwise innocent oysters are now the recognized and dreaded carriers of the widespread and almost omnipresent poison. When large numbers of fever cases are congregated in one spot, the difficulties of meeting the emergencies of the situation are proportional to the intricate and multiplied possibilities of circumventing them. Under such circumstances there is a geometrical expansiveness of increased possibilities acting and reacting upon each other in many and constantly varying directions. Although attempts have been made to prove that the poison can be conveyed through the air and enter the system by way of the respiratory apparatus, there is yet nothing demonstrated which tends to militate against the present theory of intestinal infection. It is not sufficient now to say that the fever was not due to microbic contamination of water or milk, or to the usual causes so well known and understood, but we must take into account all the probabilities of infection through other and more indirect media. Lately the ordinary house and field fly assumes a comparatively new rôle as a ready and plentiful distributor of the poisonous microbe. The recent observations made by the government bacteriologists in one of the Southern camps invests this part of the subject with an interest and importance which can scarcely be gainsaid. Although, so far as has yet been stated, the proofs that the fly can carry typhoid are not so demonstrable as is its ability to convey cholera infection, the analogy of relations between cause and effect is strikingly probable.

Dr. M. A. Veeder in a recent issue of the Medical Record has recorded some observations on the point at issue, which are of the greatest importance in settling any reasonable doubt on the subject. The experimenter in question proved that flies readily devoured the microbes in alvine evacuations and discharged them in their fæces and also carried them on their feet, infecting every article of food or drink with which they may come in contact. From all accounts there were abundant opportunities offered the government experts for demonstrating how this could be done in the camp under observation, as the flies were very plentiful and the open privy trenches were very near the food supply. From a logical point of view such observations are exceedingly valuable and deserve thoughtful consideration. The fly is a natural scavenger, which is capable of transferring wound poison from one patient to another, is charged with propagating yellow fever and cholera, and, being very much of a gypsy in its migratory tendencies, may be found to be the ever-ready disseminator of the typhoid poison when under other circumstances the cause of the fever in distant and isolated districts would be inexplicable.

The Onion is believed to be a wholesome and nerve-soothing artice of diet, and still a Harlem physician's domestic unrest, resulting in divorce proceedings, has been traced to this fragrant vegetable.

HUNTING ACCIDENTS.

The sad misfortune which has during the past week befallen a well-known physician of this city is being followed by similar accidents, such as one has come to look for in considerable numbers at this season of the year.

A hunter at Lake Placid has just mistaken for a deer and mortally wounded his brother-in-law, and it was but recently an Adirondack guide shot his son, after having shot another son the year before. The loss of life from these mishaps is so great each year in our Nothern and Eastern hunting districts that, while no intimation of intention, so far as we remember, has of recent years been suggested, the State of Maine last year felt called upon to ask its legislature to establish a penal clause against the carelessness which at times must exist.

To fire into bushes simply because they move seems at least somewhat unsportsmanlike, and where there is a possibility of other hunters being the innocent cause of the commotion too much care cannot be exercised. In Vermont as well it has been proposed to put up notices of warning in the woods and at railway stations, to restrain the overzeal of the inexperienced. This or other means of giving publicity to the matter may serve to reduce the much too large number of killed and wounded hunters.

News of the Week.

The Presence of Yellow Fever in the South is still causing some uneasiness in the minds of the people and great watchfulness on the part of the health authorities. On September 26th twenty-six cases of a mild type were discovered in Wilson, La. The source of the infection is unknown.

Transposition of Heart and other viscera necessitated the firing of five shots into his chest by a suicide in San Francisco on Sunday last.

Insanity in Great Britain.—According to the latest report of the commissioners in lunacy, the number of patients under treatment in the public insane asylums of Great Britain and Ireland on January 1st of the present year was greater by 2,607 than that on the same day of 1897, and by 5,526 than that on January 1, 1896. The average yearly increase during the past ten years was 1,933. These figures do not necessarily indicate that insanity is increasing, for the statistics are those of the inmates of public institutions, and show merely that there is an increasing tendency to send to asylums for careful treatment many cases which formerly would have been retained at home or in the workhouses. Many persons, also, who are suffering from senile dementia now become inmates of lunatic asylums, whereas formerly they were allowed to end their days in the public workhouses and were classed as paupers and not as lunatics.

The Accidental Shooting of the son of Dr. Andrew F. Currier, of this city, while hunting with his father in the Adirondacks during the past week, will call forth much sympathy from the doctor's many friends.

New York's Opportunity.—In a short time New York will reassume its former pre-eminence in the number of under-graduate students, for all the States are getting medical laws which demand a preliminary examination of a proper character, and the student will find it no easier to get a degree of M.D. or to enter upon the study of medicine elsewhere than is now the case in New York.—*The Post-Graduate.*

General Wood's Powers Enlarged.—The jurisdiction of Military Governor Wood, formerly colonel of the Rough Riders and before that a surgeon in the army, has been extended by President McKinley, until it now embraces the entire province of Santiago de Cuba.

Cigarettes in Syracuse.—A new ordinance in Syracuse requires cigarette dealers to pay a license fee of $25, and provides for the appointment of an inspector to prevent the sale of "impure" cigarettes—whatever that may mean.

Bicycling is recommended by an asylum superintendent in Scotland as useful in the treatment of some forms of lunacy. A clear case of *similia similibus curantur.*

Chewing-Gum Thrown Out. — In an interview granted to a reporter at Jacksonville on the occasion of his visit of inspection to the camp there, Surgeon-General Sternberg said that he should not be held responsible for the mistakes of all the officers under him, and yet he had been criticised for all that had happened. He said that every requisition that had come to his office for supplies had been promptly filled, and that he knew of but one item that had been cut from a requisition, and that was chewing-gum. His department had been ready to meet every demand, and if the supplies wanted had not been asked for it was not his fault.

Red Cross Work in Porto Rico.—According to a report from Mr. H. F. Barnes, Red Cross agent at Ponce, the American army in Porto Rico is now, and has been for weeks, entirely dependent upon the Red Cross for all of its hospital food supplies. The Spanish hospitals, he says, are well supplied with everything needful for the comfort of the sick. The number of sick among our troops on the island is about ten per cent. of the entire force. Most of the cases are of malaria, dysentery, and typhoid fever.

Obituary Notes.—Dr. Winthrop B. Hallock, of Cromwell, Conn., died of apoplexy in this city on September 24th. He was sixty-five years old, and was a graduate of the Long Island College Hospital Medical School in the class of 1864. He was formerly an acting assistant surgeon in the United States army.—Dr. John W. Detwiller, of Newport, R. I., died on September 26th, of appendicitis. He was forty-seven years of age, and was a graduate in medicine of the University of Pennsylvania in the class of 1873.—Dr. John F. Isom, of Cleveland, Ohio, died recently of heart disease. He was sixty-seven years old, and was a graduate of the medical department of the Western Reserve University in 1877.

Dr. Rush S. Huidekoper, professor at the New York College of Veterinary Surgeons, the author of some excellent veterinary manuals, lieutenant-colonel of volunteers, formerly medical director of the camp at Chickamauga, and more recently surgeon-in-chief of the American army in Porto Rico, has been relieved from duty and ordered to report to the surgeon-general. It would be interesting to know how a man—who is, it is true, a graduate of a medical college, but whose practice has been confined, of late years at least, to dogs and horses—came to be appointed to the medical corps of the United States army, and placed in authority over medical practitioners, both civil and military, of long experience and wide reputation.

Major Brown.—A correspondent writes that Major Brown, of Camp Wikoff, to whom we referred recently as one of the members of the medical corps of the regular army, is a surgeon of volunteers. While gladly correcting the error of statement, we have no apology to make to Major Brown, for the company with which we classed him is one that would do honor to any man.

Army Surgeons Prevented from Making an Autopsy.—A member of a Texas regiment stationed at Jacksonville died recently in hospital while under anæsthesia, and the report got out among his former comrades that he had died in consequence of ill-treatment. The surgeons were preparing to make an autopsy, when the captain of the company forbade them to do so and sent a detail of men to see that his orders were obeyed. A military commission of surgeons was finally appointed to investigate the cause of death, which was found in a cardiac lesion.

An Emergency Medical Corps. — The following plan for relieving the government from the necessity of employing acting assistant surgeons is proposed by *The Medical Examiner:* "That there be established by the government and at its expense, either in connection with an already established institution or as an independent college, a post-graduate course for the purpose of instruction in all those medical matters which bear upon the military or naval service; that the students of this government institution be selected from the brightest graduates of the established medical colleges; that during this post-graduate course the students, limited in number, be maintained at the expense of the government; that in addition to the regular curriculum they be instructed and drilled in military and naval technical matters, sufficiently to enable them to understand military and naval manœuvres; that at the end of the course, to those who can pass the necessary examination, a diploma shall be given which shall set forth the fact that they are qualified to act as surgeons in the army and navy without further examination. But this diploma shall not excuse from a further examination for promotion in the service from grade to grade. By virtue of this government diploma the holder must stand ready to serve his country as a surgeon at any time when he may be called upon, until he shall arrive at the age of forty-five years, but it does not prevent him from engaging in regular practice wherever he may elect."

Investigation of the War Department.—The commissioners appointed by the President to investigate the conduct of the war department, and to place if possible the responsibility for the unnecessary suffering and loss of life of the soldiers at Santiago and in camp at home, met at Washington on Saturday last. The medical member of the commission is Dr. Phineas S. Conner, of Cincinnati—Dr. Keen, of Philadelphia, who was first mentioned for the place, having been unable to serve. The departments to be specially investigated are the medical, the commissary, and the quartermaster's departments. The commission has no authority to compel the attendance of witnesses or to make those testify who have responded to the invitation to be present.

The Idaho State Medical Society held its sixth annual meeting at Moscow on Tuesday and Wednesday, September 6th and 7th. The election of officers resulted in the choice of the following to serve for the ensuing year: *President*, C. W. Shaff, Lewiston; *Vice-President*, E. F. Guyon, Montpelier; *Secretary*, Edward E. Maxey, Caldwell. The next annual meeting will be held at Lewiston, September 5 and 6, 1899.

Dr. Sternberg's Literary Activity.—In a recently published biographical sketch of the surgeon-general, we are told that he is the author of no less than one hundred and twenty-two journal articles in English and Spanish, and twenty-nine single works. This list does not include his many letters to lay and medical journals in reply to criticisms of the army medical department, written during the past three months.

Bellevue Hospital.—The following appointments have been made to the visiting staff of Bellevue Hospital: Dr. Henry C. Coe, gynæcologist; Dr. L. Bolton Bangs, genito-urinary surgeon; Dr. B. Farquhar Curtis, surgeon; Dr. George D. Stewart, surgeon; Dr. Egbert Le Fevre, physician.

The Death of Dr. J. E. H. Nichols.— A special meeting of the medical board was held at the Manhattan Eye and Ear Hospital, on September 13, 1898, to take action on the death of Dr. J. E. H. Nichols. The following resolutions were adopted:

"*Whereas*, We have heard with sorrow of the death of Dr. J. E. H. Nichols, in North Carolina; and

"*Whereas*, He has been connected with this institution for the past twelve years, the latter five of which as surgeon; therefore be it

"*Resolved*, That in the death of Dr. Nichols the hospital has lost one of its most efficient and faithful workers, and we, his colleagues, a loved and valued friend;

"*Resolved*, That the flag of the hospital be displayed at half mast until after his interment;

"*Resolved*, That we extend to his family our sincere sympathy in their sorrow;

"*Resolved*, That these resolutions be spread on the minutes of the medical board, and that a copy be sent to his family and published in the New York Medical Record and in the *New York Medical Journal.*

D. B. St. John Roosa, *President of the Medical Board;* Frank N. Lewis, *Secretary.*

Society Reports.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNÆCOLOGISTS.

Proceedings of the Eleventh Annual Meeting, Held in Pittsburg, Pa., September 20, 21, and 22, 1898.

First Day—September 20th.

The association met in the assembly hall of the Monongahela House, and was called to order by the president, Dr. Charlls A. L. Reed, of Cincinnati, Ohio, at 10 A.M.

Dr. John Milton Duff, of Pittsburg, welcomed the association on behalf of the local medical profession.

Lieut.-Gov. Walter Lyon followed with a brief but very eloquent address of welcome on behalf of the citizens of Pittsburg and of the State. President Reed, in behalf of the association, responded to these remarks of welcome in a very concise but graceful speech.

Following the preliminary exercises came the first paper of the scientific session, by Dr. Frederick Blume, of Allegheny, Pa., entitled

Some of the Complications following Vaginal Hystero-Salpingo-Oöphorectomy in Pelvic Suppuration, with Remarks on the Objections to this Operation.—He said that a perusal of the literature of the past few years proved that vaginal hysterectomy had made its way here and abroad. Its condemnation upon theoretical grounds had decidedly diminished. Its advantages were too plain to permit being longer ignored. Men who, in the beginning, strongly objected or opposed this mutilating operation, as some were fond of styling it, had changed their opinions. Guided by the experience of others, they had adopted this method and confirmed the assertions of its advocates that it was a conservative operation in the broadest sense of the word—a procedure which, though sacrificing the uterus, conserved the life of the patient even under circumstances in which the suprapubic route would mean certain death. The propriety of removing the uterus in suppurative disease of the appendages had been questioned ever since Péan introduced vaginal hysterectomy. Briefly stated, the chief objections were: (1) that the uterus was not a useless organ after the ablation of the appendages, and should not be sacrificed unless seriously diseased; (2) that vaginal hysterectomy was an incomplete procedure, was followed by serious complications, and was not curative. The disposition to preserve the uterus during the child-bearing age in women with healthy tubes and ovaries or in unilateral suppurative pelvic disease could well be understood, but why this organ should not be removed as the initial step of a life-saving operation, when the ablation of both appendages became a necessity, was beyond comprehension. The assertion that the uterus without the appendages was still an important organ, that its functions had not ceased with the artificial induction of the menopause, must be rejected as untenable in the light of present knowledge. The arguments that after the extirpation of the uterus the nervous phenomena were more pronounced than when the appendages were left alone, had strongly influenced many surgeons against vaginal hysterectomy. Careful investigations, however, had shown that these arguments could not be verified. Mainzer, in a report of two hundred vaginal hysterectomies for chronic inflammation of the adnexa, performed in Landau's clinic, had arrived at the conclusion that there was less disturbance of the nervous system after the radical operation than after salpingo-oöphorectomy alone. He further had stated that the age of the patient bore no relation to the presence or absence of these nervous symptoms. Dr. Blume did not confirm the view that the removal of the uterus increased the nervous disturbances incidental to the menopause, and he was inclined to believe that this view was based upon the complaints of neurotic women. As to the sexual passion, his patients, with but one exception, had stated that they had as much sexual appetite now as at any time before operation. Two of them, young widows, who married a year after the operation, informed him repeatedly that they were more passionate and enjoyed sexual intercourse more than ever. The mortality of vaginal hysterectomy was considerably less than that of the abdominal operation. There was, however, a diversity of opinion as to the ultimate results of the vaginal procedure. The essayist did not resort to the vaginal method in those cases in which there was a possibility of saving one tube and ovary; *i.e.*, in cases of unilateral suppuration, even when due to gonorrhœa. He was not yet convinced that both appendages must be sacrificed, far less the uterus, when gonorrhœal infection was limited to one tube and ovary. His personal experience with vaginal hysterectomy for pelvic suppuration was limited to forty-two cases operated upon during the years 1895 to September, 1898. This series, though small in number, was quite interesting, on account of the extent and the gravity of the pathological changes. Of the forty-two patients, eighteen belonged to that desperate class of cases which, if treated by the abdominal route, were either left unfinished or, according to the statements of prominent operators, had a death rate of from twenty-five to thirty per cent. in the hands of the most skilful surgeons. The pelvic organs were agglutinated into one mass, and could not be distinguished by vaginal or rectal examination. In some instances these masses reached half-way to the umbilicus; while in others the peritoneal cavity was less involved and they extended downward into the vagina, pushing the uterus against the symphysis pubis and compressing the rectum to such an extent that an ordinary rectal tube could not be passed without difficulty. The lesions of the remaining twenty-four patients were not quite so extensive, yet in every instance both appendages were so far involved that a conservative operation was out of question. Complications occurred in three cases.

Dr. Joseph Price, of Philadelphia, said that the sexual appetite of women, alluded to by the essayist, following a variety of operative procedures, was in many instances improved rather than impaired. It was rare for a woman to complain of impaired sexual appetite after a supravaginal hysterectomy. Age, however, should be considered in discussing the nervous phenomena incident to a normal or precipitate menopause. He advocated the abdominal route, saying that the vaginal method was an incomplete one. The latter method favored bowel obstruction. In ten vaginal hysterectomies performed by Coe in his early work, there were two deaths from intestinal obstruction.

Dr. Edwin Ricketts, of Cincinnati, cited an instructive case in which it became necessary to resort to the combined method. He spoke in favor of the vaginal route in some cases, but not in all instances, for pus in the pelvis.

Dr. Rufus B. Hall, of Cincinnati, was willing to admit that there were cases that could be dealt with by vaginal section and drainage, but the field for this operation was limited. In cases in which there were dense adhesions of viscera, good complete work could not be effected by the vagina. Experience had taught him that if a patient was under thirty-five and the uterus was removed by an abdominal operation and the cervix was left, she suffered less from reflex disturbances than she did when the uterus was left.

Dr. Charles Greene Cumston, of Boston, said

that suppurative conditions within the pelvis demanded different treatment, according to their situation, the number of foci, their size and nature; and the gynæcologist in making the diagnosis and considering the choice of operation should take account of all of these things, whether the case was suitable for the vaginal or for the abdominal route. In most cases of pus in the pelvis, considered in a broad sense, posterior colpotomy was a trifling operation, yet a conservative one. It could be performed in chronic purulent cases of the female pelvic organs and in acute suppurations in which it would be dangerous to do either abdominal or vaginal hysterectomy.

Dr. James F. W. Ross, of Toronto, said that at the Montreal meeting of the British Medical Association vaginal hysterectomy for cancer was discussed, and his experience agreed with that of Price, that this operation for carcinoma, no matter how early it was done, was not satisfactory. High amputation of the cervix after the method of Byrne had been satisfactory in his hands.

Dr. L. H. Dunning, of Indianapolis, remarked that the character of the suppurative products encountered by the surgeon called for different lines of procedure. In the cases described by the essayist, in which the pus accumulations were exceedingly large, extending as high as the umbilicus, fixed, and extending down into the vagina, it had been his practice for the last ten years, and he saw no reason to change it, to do vaginal section. In such instances, when vaginal hysterectomy was done it was exceedingly difficult, if not impossible, to remove the pus sac. He had operated by vaginal incision in fifty cases of the kind described. Of these patients, four returned for subsequent operation. All but one of them had made primary recoveries.

Dr. B. Sherwood Dunn, of Boston, believed that the perfection of the technique of hysterectomy by the vaginal route greatly exceeded in difficulty that by the abdomen. The complications following operation by the vaginal route exceeded those of operation by the abdominal method. The danger to the ureters and the bowel and postoperative hemorrhage were very much greater by the vaginal than they were by the abdominal route. He restricted vaginal hysterectomy to a few selected cases in which he was fearful of death of his patients if operated upon by the suprapubic route. The vaginal operation was difficult, and in many instances it had to be followed by a second operative procedure through the abdominal wall.

Dr. W. E. B. Davis, of Birmingham, held that vaginal incision and drainage had a large field. There was a great deal of difference between operating in old gonorrhœal cases and operating in fresh ones. Unquestionably all of the cases following the puerperal state, in which the surgeon could place his finger upon the side of or behind the uterus, could be dealt with better by the vaginal route. The surgeon made a mistake if he opened the abdomen to deal with this class of cases, when vaginal incision and drainage were such a simple procedure. While a few cases would return for secondary operations, the surgeon should be willing to give young women several operations, if necessary, to save important organs.

Dr. C. A. L. Reed, of Cincinnati, formerly resorted to the vaginal route, and, after trying it carefully and conscientiously in many cases, he had practically abandoned it and had returned to the abdominal incision. He had found, however, a class of cases in which hysterectomy was a very important concomitant in the course of treatment, but even in these he did not remove the uterus per vaginam.

The paper was further discussed by Drs. A. B. Miller, of Syracuse, and J. Henry Carstens, of Detroit.

Operative Technique for Intraligamentous Ovarian Cystomata.—Dr. D. Tod Gilliam, of Columbus, Ohio, contributed this paper. Prior to the enucleation method of Miner, the surgical treatment of these cases was crude and incomplete. Miner's method marked a new epoch and would ever remain the foundation principle of their surgical treatment. It was, however, attended with so much difficulty and danger as greatly to abridge its usefulness. The chief danger was from hemorrhage, which was oftentimes fearful and not infrequently fatal. Other and by no means unimportant dangers came from injuries to important pelvic structures inflicted during hurried and blind dissection. There was a crying need for something better. The essential factors of the ideal operation were: (1) tapping, to reduce the volume of the cyst and to open the way for hæmostasis and enucleation; (2) ligating the supply vessels to control hemorrhage; (3) enucleation along the line of cleavage to insure easy, rapid, and safe dissection. This technique was foreshadowed in a case in which the essayist operated on October 30, 1894. Here he gained his first knowledge of the line of cleavage for intraligamentous cyst, and reported it to the Columbus Academy of Medicine. In 1896 Kelly announced the line of cleavage for intraligamentous uterine fibroid. Hall (in 1897) was the first to combine all the essential factors of the ideal operation. Hall's method, however, included hysterectomy. The method of the essayist without hysterectomy was as follows: First tap the cyst and drain off its contents; then ligate the ovarian artery near the pelvic wall and place a clamp between the cyst wall and the uterus. Select a point as low down on the anterior wall as practicable, and with a pair of forceps lift up the capsule and make a small opening. Insinuate a finger and sweep it around, separating the cyst from its matrix at the base. Now turn the finger upward and work in the direction of least resistance, slitting the capsule as you go. This will indicate the line of cleavage and will generally run upward and outward diagonally across the face of the tumor. Now introduce the hand and strip off the capsule from below upward, following the line of cleavage. Enlarge the opening by making an incision parallel to the capsular margin; seize the cyst and roll it out of its bed, stripping it from the posterior capsular wall. Trim and suture as in other cases.

General Considerations on Septic Infection of Ovarian Cysts.—Dr. Charles Greene Cumston, of Boston, read this paper. Inoculation experiments had shown that if the liquid contents of an ovarian cyst were not contaminated by bacteria, they would remain aseptic and would undergo no change. But if, on the contrary, microbes attacked a cyst and entered it, its contents would serve as excellent culture media and symptoms of infection would soon appear. But the human organism would take on the offensive and would react against the bacteria which had infected the cyst; leucocytes came from the walls of the vessels and attacked the invading microbes, and thus we had the transformation into pus of the liquid contents. There were two kinds of septic infection of ovarian cysts, namely, pathogenic infection and saprophytic infection. Pathogenic and saprophytic organisms often entered ovarian cysts through puncture, incision, and drainage. As puncture was discarded in a great number of instances by the majority of the profession, it was clear that the patient contained the agent of the septic process under consideration. The germs did not come from without, but from the interior of the organism, and the process might be called a true auto-infection, which took place in one of three ways: (1) By means of the blood, in which case the infection was direct, produced by phlebitis, which extended up to the cyst; or it might be indirect, in which case the infective elements were carried in the gen-

eral circulation into the tumor by means of its pedicle. (2) Infection might take place by way of the lymphatics, in which case the lymphatic channels acted as the contaminating canals and allowed a direct introduction of the germs into the interior of the cyst up its hilum. (3) There might be infection through adhesions, which were plentifully supplied in new-formed vessels and which were intimately connected with those in the walls of the cysts, and thus allowed an easy transportation of the bacteria. After giving at considerable length the symptoms of ovarian cysts and dwelling upon the diagnosis and differential diagnosis, the author dealt with their operative treatment. Operation for the removal of ovarian cysts which were the seat of septic infection might be divided into four stages. The first was incision of the abdomen; the second, the breaking up of the adhesions and ligation of blood-vessels which they contained, and then the pus might be removed by trocar and not with the knife, because if the cyst was incised pus would immediately flow out and the wound would very likely become infected by the septic material. The third step in the operation was the extraction of the cyst through the wound, and in doing this the surgeon should be careful to avoid infecting the abdominal incision at the time he was drawing the pocket through, but this complication could be easily avoided if aseptic gauze sponges were tightly packed around and inside the line of incision. Next came the ligation of the pedicle and its section, after which it was dropped into the abdomen. The fourth step in the operation consisted in the cleansing of the peritoneum, which should be done with great care, especially when the operative field had run any chance of infection. If this had occurred, free irrigation of the peritoneum was proper, but it should be done with care and the liquid employed should be a warm decinormal salt solution. Care should be taken to limit the irrigation to the subumbilical portion of the peritoneal cavity, and a back flow of the liquid toward the diaphragm should be prevented by having the operating-table perfectly flat and the thorax slightly raised.

A Second Contribution to the Surgical Treatment of Intussusception in Infants, with Cases.—Dr. Henry Howitt, of Guelph, Ontario, read this paper. In the paper the term infant was restricted to those under one year of age. After briefly describing the different varieties of intussusception that occurred at any period of life, and also referring to particulars in regard to statistics, modes of growth, length of bowel involved, and the severity of attack in the varieties, he stated that in the infant we had only the acute forms with which to deal in practice; nay, possibly only the ileo-colic, which all authorities agreed to be the most acute and rapid variety of invagination. It was, he stated, the ileo-cæcal form plus the valve distended and the lumen occluded by the swollen and œdematous invaginated portion of the ileum which, owing to the tight constriction at the neck by the valve, in a manner resembled a well-hammered boiler rivet, that no evenly distributed pressure from within could force out. The author believed that many instances of the trouble occurred in infants, leading invariably to death, without the true nature of the malady being recognized by the attendant; and that when the facts having reference to this variety of intussusception became generally known, fewer deaths would be recorded in certain bowel affections and more lives saved by surgical means. He had seen seven cases, six of them almost within the past five years, or since his attention was drawn to the subject. Six were in male children; all came from a district the population of which was under twelve thousand. He had operated successfully on four, all of whom were under six months of age. A fellow-practitioner lost one, owing to an accident during operation. In one case the friends refused operation and death resulted, and one child died shortly after the onset, before anything could be done. The symptoms of ileo-colic intussusception were fully dwelt upon. In regard to its diagnosis, the speaker emphasized the importance of the history of the onset, and stated that without it the attendant might be likened to a ship in a storm without helm or compass. In fact, the nature of the onset might suffice for a diagnosis. The detection of a tumor in the course of the colon left no room for doubt. The condition in this form of intussusception was such as to preclude the hope of recovery by any method short of operation. No time should be lost in trying either bowel inflation or injection of fluids. They could do no good. His method of operating was as follows: He maintained the temperature of the child by suitable applications to the extremities and body during operation. Rigid aseptic preparations and precautions should be carried out. A median, three-inch incision, avoiding the high-placed bladder, was made; the small intestines were eventrated as rapidly as possible, and protected with gauze, which was irrigated with water of suitable temperature. The evisceration allowed the obstructed portion of intestine to be brought into view. When, as was generally the case, the invagination had reached the transverse colon, the surgeon could not bring it out of the wound till the part of the large bowel implicated was disinvaginated. This was accomplished by making pressure on the apex of the intussusceptum while the intussuscipiens was pulled in the opposite direction. It was done by grasping the colon close to the apex with the hand, and following it up the bowel step by step till the colon and cæcum were free. The mass was now lifted out of the incision. Then came the most difficult point—the reduction of the invaginated portion of the ileum. The part was grasped in the hand and firmly pressed for a few minutes; then pressure was made with the thumbs on the apex, while the fingers surrounded and supported the outer orifice of the ileo-cæcal valve. The method resembled that used in paraphimosis, only the large bowel covered the part from view. Before the intestines were returned to the abdominal cavity, the contents which had accumulated in the ileum above were forced through the affected part into the colon; this would prove that the difficulty had been effectually overcome and insured an early movement of the bowel. Drainage was not necessary. The omentum was spread over the intestines to prevent adhesion of the bowel to the line of incision. The dressing was covered with oiled silk, the edges of which were sealed with collodion to prevent urine reaching the cut.

Dr. Reed said his experience was restricted to a single case of intussusception in infants. The child was operated upon *in extremis*, and died within the first five hours following operation. With early interference the outcome might have been different.

Dr. Price said the cases reported were a beautiful demonstration of what could be accomplished by good judgment, great diagnostic skill, and early surgical interference.

Dr. W. E. B. Davis thought it was unusual for one man to have so many cases of invagination in infants. He had met with only one case, and this occurred ten days ago, the child, a male, being eight months old.

Dr. Hall recalled half a dozen fatal cases of intestinal obstruction in infants in sixteen years' general practice. He believed the invagination was overlooked in the majority of instances.

Dr. John M. Duff believed that intussusception in infants occurred more frequently than was generally supposed. He had held post-mortems in several cases in which the diagnosis had been doubtful, but intestinal obstruction was found. He had seen two cases within the past year; in one operation was refused, and the

child died. At the autopsy intussusception was found. The other case was operated on after peritonitis had set in, and was also fatal.

Dr. Cumston had seen four cases of invagination in children.

Nursing in Abdominal Surgery.—Dr. Joseph Price, of Philadelphia, read a paper with this caption. The time had passed when any question was raised by intelligent and experienced members of the profession as to the value of the trained nurse. Nurse-training schools had become important institutions, not only to young women who with a creditable ambition entered them to fit themselves for the profession of nurse, but to the physician, for the latter, whether in general or special practice, knew the value of the trained nurse, understood the close and vital relation she held to his patient; how much her care and quick intelligence of needs did to relieve his anxiety and promote the welfare of his patients. The training of these schools should be specially and simply directed to fit pupils for the duties of nurses. These duties in all their details, and all the steps in the training essential to discharge them faithfully and intelligently, should be definitely, orderly, and clearly outlined by teachers of thorough experience. Those desiring to become nurses should commence their work early, while young, studious, and ambitious; while their habits were not so fixed as to make a change difficult, if not impossible. Too much had always been expected of nurses in private nursing. Nursing through twenty-four consecutive hours was too much to require of human endurance, and resulted in neglect of the patient. Systematically trained special nurses were usually bright, cheerful, interested, and spirited: were alive to the importance of their work; cared for and infused into their patient some of their own animation. The untrained nurse, on the other hand, was meddlesome id dangerous. Young, healthy, unmarried women ere to be preferred—not widows, or grass widows, great-aunts, or grandmothers.

Second Day—September 21st.

Dr. W. J. Asdale, of Pittsburg, read a paper in which he reported an interesting case of extra-uterine pregnancy, with a mature fœtus, and exhibited the specimen. The skeletal remains were borne seventeen years over the completion of the gestation term, and the condition was eventually complicated by an ovarian cyst. No operation was performed. The patient died. At the autopsy a monocyst of the right ovary of large size was emptied and withdrawn. One of the long bones of a fœtal skeleton was found free in the pelvis. High in the left hypochondrium, underlying the left lower ribs and just beneath the diaphragm, the remains were found—skeletal—of a fœtal body, disarticulated and closely packed together. The bones were invested by the intestine, a portion of which was cut away in the removal. The fœtal soft parts had, at the time of autopsy, almost entirely disappeared. Records of successful operations undertaken for the removal of long-retained fœtal remains were so rare as yet to be exceptional, and how much more doubtful surely would be the result of operative interference in such a complicated case as this.

Remarks on Primitive Amenorrhœa, with Report of a Case and Presentation of Accompanying Pathological Specimen.—Dr. Walter B. Chase, of Brooklyn, read a paper on this subject, in which he said that the essential fact in the sexual life of woman was the predominating control of ovarian influence, and the central fact in the pathology of woman's sexual life was due in large degree to changes or perversion of function or structure of the ovary. While ovarian function was not the single influence which swayed woman's existence, the absence of it would dethrone her womanhood. The commonly accepted theory concerning the functional activity of woman's sexual life was that menstruation marked the commencement of ovulation, and that in its ordinary manifestations they were, in point of time, coincident. The experience of all observers doubtless furnished exceptions to the common law, but these exceptions served rather to confirm than abrogate it. Among these variations or absence of physiological processes amenorrhœa in some of its forms was of common frequency. An intelligent and comprehensive distinction in amenorrhœa embraced a difference between those cases which were congenital and those which were acquired. In the former, emansio mensium, or primitive amenorrhœa, the causes were congenital, and chiefly physical; while in the latter, suppressio mensium, or acquired amenorrhœa, the causes were functional, or largely so. In the first class menstruation had never been present; in the second class the function once present was arrested. Primitive amenorrhœa might result from congenital deficiency or imperfect development, as follows: absence or imperfect development of ovaries and uterus; degeneration of the ovaries, cystic or otherwise; the formation and development of benign or malignant tumors of the ovaries sufficient to preclude or abolish their function.

Report of Case.—Mrs. B——, aged twenty-four; a woman of refinement and fine physical development; had been married about two years; was sterile, and had never menstruated. She gave an intelligent history of having had all of the symptoms which usually accompanied menstruation, since the age of puberty, except the appearance of the menstrual flow, commencing at about eighteen years. The symptoms of discomfort developed with perfect regularity every twenty-eight days, with a history of increasing pain and nervous excitability, until during the eighteen months previous to his having seen her the pain had become unbearable and nervous perturbation such that she and her friends feared insanity. The one subjective symptom which gave rise to her fears of mental disturbance was severe headache and pressure felt at the vertex, which were present for several days at each menstrual molimen. During a year or more she had been conscious of a gradual enlargement of the abdomen, and could herself easily define an abdominal tumor. She entered the service of Dr. Chase at the Bushwick Hospital, and a careful study was made of her case by the consulting gynæcologist and himself. The patient was desirous of an operation, which was performed. The first tumor removed was a dermoid and had no pedicle, but was closely adherent to the uterus and the right broad ligament. The second tumor was a suppurating multilocular cyst of the left ovary. The report of the pathologist was: (1) The dermoid had usurped the place and destroyed the function of the right ovary. (2) In one of the walls of the multilocular ovarian cyst was found a shrunken ovary, the size of a large lima bean, and within this ovarian stroma was found a corpus luteum spurium. To the presence of this ovarian stroma were due the womanly development, with ovulation, and the futile effort of menstruation and its consequent suffering. (3) It demonstrated the possibility of ovulation without menstruation. (4) It left us in doubt whether the absence of the Fallopian tubes was primary or secondary to the grave disease of the ovaries, with the possibility that they were congenitally absent. (5) It presented the rare and exceptional condition of a perfectly developed woman who had an ovary and a uterus, who ovulated, was sterile, and had never menstruated, and yet was ruined in health by nature's effort to establish an impossible normal function.

The remainder of the morning session was devoted

to the presentation and discussion of pathological specimens. Specimens were exhibited by Drs. John B. Deaver, X. O. Werder, Rufus B. Hall, and William H. Humiston.

President's Address.—This was delivered by Dr. Charles A. L. Reed, of Cincinnati, Ohio. He selected for his subject "The Evolution of Specialism." Modern specialism in medicine, he said, dated from the period when the French schools, in the early decades of this century, took up seriously the question of pathological anatomy. This was the physical basis upon which the work of division began. The obstetrical art was as old as the function of reproduction, although the later ages had witnessed its present refinements. It had been said that obstetrics married surgery, and that the fruit of the union was bright-eyed gynæcology. The accouchement probably occurred at the time Récamier invented the speculum, in 1801. Surgery had its first rational development in the United States in 1809 under the masterly hand of the immortal McDowell; everything from that day to this was essentially contemporaneous history, in which occurred conspicuously many of the proudest American names. Specialism became a verity in response to natural laws, which even to-day determined its destiny. There was not a day but the general medical profession became enriched in resource and potentiality by the accretions derived from specialism. Each specialty, however assiduously cultivated, remained an integral part of the great general profession, the masters of which must ever stand as our ideals. All specialists to-day were primarily the products of general medical culture.

Third Day—September 22d.

Dr. D. Tod Gilliam, of Columbus, Ohio, read a paper on the "Treatment of Granular Erosions of the Cervix," and reported three cases which he had treated successfully by ligation of the cervical vessels.

The Relation of Nervous Affections to Diseases of the Female Pelvic Organs.—Dr. B. Sherwood Dunn, of Boston, followed with a contribution on this subject. He limited his remarks to the great neuroses of neurasthenia and hysteria and insanity. He was totally opposed to any operative procedure, except when pathological conditions were demonstrable. He had no confidence in operations upon healthy organs for the cure of any neurotic condition, and believed that such were now generally condemned by the profession. He, however, looked upon the position taken by some neurologists, that there was no relation of cause and effect between the various neuroses and psychoses and disease of the female pelvic organs, as being as extreme and condemnatory as the advocacy of the removal of normal organs in the female pelvis for the cure of nervous diseases, by some ill-advised persons calling themselves gynæcologists. In operating upon diseased conditions in the pelvis, the gynæcologist did not expect to remove the symptoms of the neuroses, but only those symptoms properly belonging to the pelvic disease itself. But, strange and disappointing as it might seem to be to some of the critics, when those pathological pelvic conditions were removed or corrected, the nervous system, relieved from the source of unceasing irritation, gradually returned to its normal poise, and the patient was cured of her neuroses as well as her pelvic disease.

Graver Forms of Nervous Disturbances Due to Organic Changes in the Genital Organs.—Dr. William H. Humiston, of Cleveland, Ohio, read this paper. In the last five years of his work the essayist had never operated in any case in which the correlation between the diseased pelvic organs and the nervous symptoms was not clearly defined before an opinion from a neurologist relieved him of a doubt of a nerve or brain lesion, with one exception. He reported six cases in which great relief—in some, cure—followed operative interference. The first case was one of insanity; the second, melancholia; the third, neurasthenia; the fourth, insanity; the fifth, hystero-epilepsy; and the sixth, hysteria. The cases were reported with the hope that some effort would be made to secure for women confined in county and State institutions for the insane such surgical measures as would, in a large proportion of cases, be a curative means for their mental ailment, and which must, in a vastly greater proportion, at least improve their condition, both mentally and physically.

Albuminuria Complicating Gynæcological Operations.—Dr. Rufus B. Hall, of Cincinnati, read a paper on this subject. The speaker referred first to the conditions predisposing to this complication. He urged careful examination of the urine preceding operation, so as to determine if possible the presence of nephritis or other causes leading to suppression. The most common cause was a pre-existing nephritis, but unfortunately in granular nephritis a most careful examination of the urine might fail to show the presence of the disease. One of these patients after the operation might have suppression followed by coma and death. The speaker said that we might also have suppression following operation in a patient with a fatty heart or with atheromatous arteries. He considered it of the greatest importance to have the patient thoroughly prepared for operation. If he found the least indication of pre-existing nephritis, he advised chloroform for the anæsthetic, regardless of the age of the patient. In his early operative work he used ether almost exclusively. He cited a hundred and ten sections in which ether was given. In thirty-three cases there was a trace of albumin in the urine in the first twenty-four hours. In ten cases there was partial or complete suppression, and two patients died in coma. During the time he had used the ether, he had operated on seven patients known to have nephritis. They were given chloroform and were included in five hundred sections in which that drug was the anæsthetic. Eighty-five of this number showed a trace of albumin in the urine in the first twenty-four hours after the operation. Ten patients had suppression and four died of uræmic coma. All patients who were known to have kidney disease were given chloroform. There were thirty-five, and the deaths in the chloroform list were from this number. To avoid the dangers from the use of chloroform, the speaker urged that its administration be intrusted only to one expert in its use. He closed the paper with a *résumé* of the preliminary treatment he accorded every patient about to be subjected to a section, of the manner in which he conducted his operations, and of the measures he employed if albuminuria occurred following the operation.

Dr. X. O. Werder, of Pittsburg, gave the clinical observations of over one hundred abdominal sections for ovarian tumors.

Dr. Frederick Blume, of Allegheny, Pa., reported a case of double uterus and vagina with pregnancy in one horn, in which he excised the vaginal septum.

Officers.—The election of officers for the ensuing year resulted as follows: *President*, Edward J. Ill, Newark, N. J.; *First Vice-President*, Edwin Ricketts, Cincinnati, Ohio; *Second Vice-President*, A. B. Miller, Syracuse, N. Y.; *Secretary*, William Warren Potter, Buffalo, N. Y., re-elected; *Treasurer*, X. O. Werder, Pittsburg, re-elected; *Executive Council*, A. Vander Veer, L. S. McMurtry, W. E. B. Davis, John M. Duff, L. H. Dunning, and Walter B. Chase.

Indianapolis, Ind., was selected as the place for holding the next meeting, the time of which was left to the executive council.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, September 26, 1898.

ARTHUR M. JACOBUS, M.D., PRESIDENT.

Officers Nominated.—*President*, Samuel Oakley Van der Poel and N. E. Brill; *First Vice-President*, Henry C. Coe and Frank H. Daniels; *Second Vice-President*, Charles E. Quimby and J. Clifton Edgar; *Secretary*, William E. Bullard and James H. Burtenshaw; *Assistant Secretary*, John V. D. Young; *Treasurer*, John S. Warren and Henry S. Stearns; *Censors*, Arthur M. Jacobus, Henry Ling Taylor, J. H. Byrne, H. L. Collyer, John T. Nagle, E. B. Bronson, John A. Fordyce, Eugene Fuller, H. T. Hanks, and W. L. Carr.

The Differential Diagnosis by Means of Blood Examination between Tropical and Malarial Fevers and Typhoid Fever, Including their Etiology, Prevention, and Treatment. — DR. JAMES EWING opened the discussion on this subject. He said that his work at Camp Wikoff comprised eight hundred blood examinations in seven hundred and fifty-four cases of suspected malarial fever. In one hundred and twelve cases the æstivo-autumnal organism was found; in thirteen crescents alone were found, and both forms of organisms were observed in five cases. It was no exaggeration to say that at least ninety-nine per cent. of the men at the camp suffered more or less from some form of malarial infection. In the majority of cases at least a week or ten days seemed necessary for the development of the disease. The evidence obtained regarding the relation of infection to the presence of mosquitoes was equivocal, but the soldiers very generally complained of the dreadful exhalations from the Cuban soil. The negroes were much less susceptible to infection than the whites. In most of the cases there was a chill of moderate severity at first, and the fever usually reached its height on the third or fourth day. The impression was very general that the third paroxysm of Cuban malaria proved fatal. The examinations seemed to show that the blood was rarely infected with more than two generations of parasites. The cerebral type was quite common, and unless these cases responded immediately to the subcutaneous administration of quinine death supervened in about twenty-four hours. After one or more acute paroxysms, many cases had a remittent fever. A rather remarkable fact was that not infrequently the anæmia and prostration became steadily worse after the disappearance of the organisms from the blood. In the mild seizures, even when examined at or immediately after the chill, he had been rather frequently unable to find the malarial parasite. Ordinarily, owing to the press of work, it was impossible to devote more than half an hour to the examination, so that it was quite possible that in some instances the parasite would have been found if the search had been more prolonged. The young crescentic forms first appeared on the third or fourth day after the paroxysm. In the febrile period following the acute attack the crescents were usually found in greater or less abundance in the circulation, even in patients who took quinine. He had repeatedly found them two weeks after all distinct acute paroxysms had ceased. Their presence might be the only sign that an apparently cured case was liable at any time to be followed by a relapse. The majority of the comatose cases, seen in the camp, came from the regimental camp. In most of these cases the crescents were found in abundance, but occasionally they were not observed until a careful and prolonged search had been made. The coma was apparently referable to some embolic process, and not to the discharge of spores. Sporulation seemed to be invariably followed by rise of temperature and increase of the pulse rate. In a considerable number of mild paroxysms with slight rise of temperature and associated with restlessness or vomiting, young crescents were found in considerable number, leading to the conclusion that the presence of these organisms was responsible for the occurrence of many of the acute phenomena of malaria.

Malarial Remittent.—In many of the acute remittent cases isolated crescents were found, but in a larger proportion no distinct organisms were found at all. In these cases, however, pigmented leucocytes were found, and this was so uniform that Dr. Ewing expressed the opinion that the presence of these leucocytes constituted the most characteristic feature of ordinary malarial remittent fever. When associated with marked anæmia, the diagnosis was almost certain.

Mixed Infection: Typhoid Fever and Malaria.—A great many cases which were indistinguishable from typhoid fever without the most careful clinical examination proved to be clear cases of infection with the æstivo-autumnal organism of malaria. Over two hundred cases of typhoid fever were studied, and in nearly all of these there was also malarial infection. In spite of these favorable conditions for mixed infection, in no undoubted fatal cases of typhoid fever (in which the diagnosis was confirmed by autopsy) was the malarial organism found. In five cases of typhoid fever the plasmodium of malaria was found in the blood during acute exacerbations occurring during convalescence from the typhoid fever. From these observations the following conclusions were drawn: (1) Mixed infection of typhoid fever and malaria undoubtedly exists. (2) When typhoid develops in a case of active malaria, the malarial element nearly always becomes quiescent, and has little or no effect on the course of the typhoid fever. (3) Malarial infection frequently outlasts the typhoid infection, and makes itself manifest during convalescence.

Pernicious Malaria and Amœbic Dysentery.—In nine cases of pernicious anæmia and amœbic dysentery, the æstivo-autumnal organism was found in the blood and the amœbæ were present in the stools.

Widal's Test.—Dr. Ewing said that his experience at the Montauk camp with Widal's reaction had been unsatisfactory, probably owing to the very unfavorable conditions under which it was necessary to conduct the bacteriological work. It was possible that the very large doses of quinine, by subcutaneous injection, had some influence on the Widal reaction. A very striking group of cases was that in which severe vomiting in afebrile cases was associated with the presence of the malarial organisms in the blood. The value of blood analysis in cases of tropical fevers had been abundantly demonstrated at this camp. Some of these fevers, that had been proved by such examination not to be malarial, seemed to improve more rapidly after the withdrawal of the quinine.

DR. W. GILMAN THOMPSON continued the discussion by a report of his experience with these cases after they had reached the Presbyterian and Bellevue hospitals. He had studied one hundred and seventy-three cases. Some of the cases came from Santiago, others from Porto Rico, and others from Chickamauga. Typhoid fever not being endemic in Porto Rico, the cases coming from there were probably of American typhoid, which had been carried there and brought back again, so that they came under observation rather late in the disease.

Special Clinical Features.—In many of the cases there had been great difficulty in making the diagnosis at first. Many of the patients suffering from the æstivo-autumnal variety came under observation at a time when the fever had been more or less continuous, and the symptoms resembled more closely those of typhoid

fever. Usually the malarial spleen was larger than the typhoidal spleen, but in the cases under consideration this had often been reversed. In bad cases of malarial infection there was often seen the mental hebetude so generally observed in typhoid. The temperature had very generally been lower than that observed in our ordinary cases of malaria here. Icterus, anæmia, and herpes were found in these cases of typhoid fever, as well as in the cases of malaria.

The Serum Test.—The serum test for typhoid fever had been applied in all of the cases. It was now known that the serum reaction had been observed long after a genuine attack of typhoid fever—even from three to ten years afterward. Although, therefore, its negative value was not great, it had a distinct and positive value as a confirmatory test. In a series of four thousand reported cases of undoubted typhoid fever, the reaction was present in ninety-five per cent. He had himself collected a number of cases, apparently accurately observed, in which this serum reaction had been noted in other diseases than typhoid fever. It was very unfortunate that among these diseases were those which were most apt to be confounded with typhoid fever—for example, malaria. The test was of little or no value before the seventh day of the disease, and quite frequently it was not obtained until considerably later—indeed, in quite a number of cases it was not observed until the relapse.

The Plasmodium May be Found during the Course of Typhoid.—Regarding mixed infection with typhoid fever and malaria, the speaker said that four or five years ago he had reported several cases in which clinically there seemed no doubt as to the diagnosis of typhoid fever, and yet the malarial plasmodium was found in the blood during the course of the disease. At the time of these observations the Widal reaction was not in use. Since this time several other clinical observers had made similar reports.

Dr. C. E. Nammack then presented the results of his study of these cases in the fourth division of Bellevue Hospital (see page 471).

Limitations of the Widal Test.—Dr. William H. Park said that he had had a rather large experience with the Widal reaction. Only to-day the health department had received forty-seven specimens for examination. His own experience with the test was that the rapid clumping with a 1 to 10 or possibly a 1 to 20 mixture was obtained only with typhoid fever. The reaction was not quite so rapid with the latter dilution. To avoid confusion he thought it very desirable that the line should be quite sharply drawn here. This intense reaction was not obtained early in many typhoids, and not at all in many others; hence the test should not be considered as having any negative value. While it was true that the reaction was occasionally observed long after an attack of typhoid fever, it was rarely observed after the expiration of six months.

Mixed Infection.—Regarding mixed infection, Dr. Park said that he had inquired as to the experience of the various hospitals in this city, and in all but one hospital the malarial organisms had been found in the blood of from one to five per cent. of the typhoid-fever cases.

Dr. Alfred Meyer said that there had been thirty or forty of the soldiers at Mount Sinai Hospital this summer, and he had made an effort to collect evidence of simultaneous infection with typhoid fever and malaria. In only one instance was there any approach to such infection. Unfortunately this man came to the hospital too late to show anything more than the existence of malarial poisoning during convalescence from typhoid fever. The Widal tests at this hospital had been carried out with a dilution of one part of blood to twenty parts of distilled water or of the serum, and every effort had been made to conduct these observations with scientific accuracy.

Typhoid Fever at Camp Black.—Dr. N. S. Jarvis said that he had been stationed in this city, and had consequently had the cases under his observation only for a short time. But on a visit to Camp Black he had seen one hundred and sixty cases of typhoid fever, and had endeavored, with the medical officer there, to determine the origin of the disease. At that time there was no typhoid fever in Hempstead. It was evident that the old pits had not been thoroughly covered up, and some of the kitchens were situated near these pits. His own opinion was that the typhoid fever originated at this camp, either at these points or from the wells in the neighborhood. One of the springs most frequented by the soldiers was within twenty-five feet of a privy.

Treatment of Cuban Malarial Fever.—Dr. A. M. Lessèr said that the typhoid-fever cases that he had seen in Cuba were at Siboney, and were observed very shortly after the arrival of the American troops. The patients all had a rather typical temperature, and recovered without complications. Dr. Lessèr then read a report regarding the cases on the *Concho* and the nature of the fevers. He stated that when the soldiers were taken on this ship they were apparently well. There were on board some typical cases of both intermittent and typhoid fever, together with some other Cuban fevers. In these fever cases there was often an initial rise of temperature to 106° or 107° F., with a pulse of 130, and without a corresponding acceleration of the respiration. This fever lasted, with but few remissions, for thirty or forty hours. Then the temperature began to fall, and quickly reached 101° or 102° F. In the evening it rose again, but fell during the next night, and the patient had a profuse sweat. After this, some went on uninterruptedly to convalescence, while others had remissions and exacerbations for an indefinite time. Such fevers were especially observed on the ship among those who were convalescent from yellow fever. The anæmia was very marked. The malarial plasmodium was uniformly found in the blood on the fourth day in spite of the large doses of quinine. This organism still persisted in the blood when the patients appeared to have recovered. His treatment had consisted in an initial dose of a saline cathartic. It was found that the intense headache was best relieved by small doses of gelsemium. Finding that the large doses of quinine had but little effect while the temperature remained high, smaller doses were given at intervals of a few hours, along with hydrochloric acid. No food, either solid or liquid, was given while the temperature was above 101° F. After recovery from the acute attack great care should be taken properly to restrict the diet, and convalescence would be assisted by the administration of a tonic consisting of sulphur, camphor, and capsicum. The malarial plasmodium disappeared from the blood much more quickly under the use of this tonic than under the administration of quinine. Of the forty-one hundred and sixty-two cases of sickness under his observation, twenty-four hundred and twelve were of Cuban malarial fever, and all ended in recovery.

Conditions at Camp Alger.—Dr. Elmer Lee spoke of his experience at Camp Alger. He said that if one-half of the money spent for medicines and such unimportant things as proprietary articles and flannel bandages for the abdomen had been applied to the purchase of proper accommodations for bathing and promoting personal cleanliness among the troops, there would have been much less sickness. His own experience was that the number of nurses at the camp was sufficient, but the work would have been better done by women. The methods of cooking and serving

the food were unnecessarily primitive. The number of cases of fever at this camp was not excessive, considering the conditions under which twenty thousand volunteers were brought together. From two to ten per cent. were sick, and many cases of illness were due to overloading the stomach with food and not taking sufficient water. Many of the men abstained from drinking, fearing that the water was not good, whereas as a matter of fact it was as good at this camp as in New York City. Too little thought was given also to properly clothing the soldiers.

Conditions at Mobile and Miami.—Maj. Daniel Mitchell Appell, surgeon, U. S. A., said that he had been at the camp at Mobile last spring. There were six regiments of regular infantry and two of cavalry. Most of the regiments remained there for four or five weeks, and during this time there was very little sickness. The camp was supplied with water from the water supply of Mobile. The Texas troops had been mustered in at their State camp, and they had cases of typhoid fever among them before reaching the Mobile camp. The same was true of the Louisiana regiments. The Alabama troops were encamped on the bay shore at a notoriously unhealthy spot, and in spite of the protests of the medical officers of the army and of the city. They brought in a number of diseases, including small-pox. Out of eleven hundred men, two hundred were sick shortly after their arrival. The division moved to Miami, Fla., about July 1st. Here the climate was very similar to that of Cuba. The sickness rapidly increased here, so that at one time nearly fifteen per cent. of the command were sick. Most of the cases, however, were instances of mild malarial infection. Typhoid fever had been unknown at Miami for years previously. No preparation had been made for the camp, and it became necessary to clear the ground for that purpose, which during this season of the year was contrary to the State law. There was a great deal of malaria here, and all of the men seemed to become quickly enervated. They were improperly clothed, and were compelled to do a great deal of drilling. The water at this camp was taken from a stream which ran from the Everglades—a large morass. This water tasted and smelled swampy, though analyses showed that the water was potable at the time of the arrival of the troops. Before the water could be piped to the camp a number of pumps were used temporarily, and undoubtedly many of them became sources of infection. Sewers were also constructed, but the work was done by inexperienced volunteers and consequently it took much longer than it should have done.

Dr. Ewing, in closing the discussion, said that it might appear to many that he had emphasized too strongly the importance of the pathological evidence of mixed infection of malaria and typhoid fever, but it was just because of the doubts and uncertainties which surrounded this subject that he had brought forward so prominently his positive, though comparatively limited, experience. To his mind, the value of anatomical evidence was greater than clinical evidence as to the nature of these mixed infections.

Memorial to O'Dwyer.—Dr. T. J. McGillicuddy presented a resolution, which was adopted, calling for the appointment of a committee of three, whose duty it should be to take steps looking toward the raising of the necessary funds for a suitable memorial to Dr. Joseph O'Dwyer. The committee consists of Drs. McGillicuddy, A. Jacobi, and Louis Fischer.

Endometritis and Endocervicitis.—

℞ Iodine ..... gr. xl.
Carbolic acid ..... ʒi.
M. S. Apply locally.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE HOT SEASON—THE WATER FAMINE—THE COMING SESSION — POST-GRADUATES — ANOTHER POST-GRADUATE SCHEME — NURSING-HOME SCANDAL — BELFAST EPIDEMIC—BRITISH ASSOCIATION — PRESIDENT'S ADDRESS—PREDICTS A WHEAT FAMINE.

London, September 9, 1898.

The heat wave soon passed by, but left fine warm weather behind. We have, in fact, had the warmest August since 1893. But, though we talk so much of heat, you would think little of it, judging by the figures reported from your side in our newspapers. Indeed, the thermometer reached only 89° F. on August 21st, and, though the month has been a warm one, the temperature has been only slightly above the average. Much the same may be said as to June and July. The periods of sunshine recorded at the meteorological office show, further, that we have had no excess. In June the number of hours of bright sunshine was 127, against an average of 167. In July there was a gain, and we had 163, one above the average. August made up for it by giving 189, against an average of 151.

Thunderstorms have been rare, and, what is more important, the rainfall has been below the average.

But all these figures do not justify the pretence of the East London Water Company, that prolonged drought is the only cause of its failure to carry out its contract. One fact shows this, viz., that the other companies have experienced no difficulties and can even afford to sell to the defaulting company. A further excuse has been that there is undue waste in the district, and the local government board seems to have accepted this statement, for it has addressed the vestries on this alleged "large waste, in some cases wilful, in others the result of carelessness." The Hackney vestry has sent a spirited reply to this "charge," and declares it to be "without a shred of evidence in its favor." This vestry has come to the rescue of the poor with water carts in parts where the company has no pipes, and has done good service. Its committee protests indignantly against the "gross libel," and expresses "astonishment that the government board should have made such an accusation on an *ex parte* statement of the authority which is solely to blame for the scarcity of water."

The Shoreditch vestry has replied in still more forcible terms and with a dash of sarcasm, which may well make the clerks of the board rub their eyes, and even "my lords," in whose names they write, wake up to the necessity of action directed by reason.

The probability is that this charge of waste of water by the victims of its scarcity only covers a leakage from the company's mains.

There are signs of the approach of the new session at the medical schools. Teachers who have returned from their holidays are talking of the 1st of October and speculating on the probable entries. The arrangements for opening the session are well advanced. *Conversazioni* and dinners maintain their encroachments on the time-honored introductory lectures, but these latter will also be represented. The *pièce de resistance* undoubtedly is offered by Charing Cross Hospital, for this school has secured the promise of an address by Virchow, who cannot fail to draw. The veteran pathologist will be duly dined and feted.

Another sign of approaching October is the appearance of the students' number of each of the medical journals. This annual number is for the most part made up of reprints of official regulations and prospec-

tuses. It is supposed to be consulted by parents in selecting a school, but I doubt if this is often the case. There is usually a leader of advice to students, but even that is probably neglected for the advice of the teachers at the school which has been chosen.

What will probably be of greater interest to your readers is the facility of post-graduate instruction in London. Not so long ago clinical instruction for qualified men was without organization. Visitors were welcomed for a time to see the practice, and had only to bring an introduction or present a card. Of late years there has been an effort to follow in the wake of New York. Classes for graduates have been arranged at several institutions, and vacation courses have also been given.

Now another arrangement has been made, which will prove a formidable competitor to the post-graduate courses. This is no less than a sort of union between all the hospitals having schools attached (except the London and St. Bartholomew's). This union will issue tickets admitting to the clinical instruction of any or all of the nine hospitals included, at a single fee of 7 guineas for three months, or 10 guineas for six months. It is anticipated that qualified men will avail themselves of this opportunity of seeing the practice of various teachers, that visitors from a distance will be glad to obtain for so moderate an outlay entrance to some of the hospitals in an independent manner, and that the scheme will react favorably on the schools and on the teachers.

Nurses we have always with us, and sometimes their vagaries are very trying. The spread of nursing-homes, too, is not altogether a blessing to the profession. They are too often abused. Some of them are rather homes for unqualified practice. Lately the profession in an Eastern suburb has been obliged to combine against the action of a local maternity charity, which sent out its nurses to attend midwifery cases at a fee of 5*s*. To a protest on the part of the doctors the "charity" has calmly replied that it will raise the fee of nurses' attendance to 10*s*, except when the husband's wage is £1 a week or under, and, further, except for patients furnished with a recommendation from a clergyman or medical man. It is easy to see that such a plan is liable to gross abuse. It appears that the "charity" is ready to undersell the profession in all ways, and purposes to extend its operations among the more well-to-do further than it has hitherto done. Of course, if it continues to obtain subscriptions it can easily do this. Here we have a sample of numerous cases in which so-called charities existing on subscriptions are ready to snatch the bread from the mouths of the most ill-paid members of the profession.

This maternity home has lately been before the coroner for the district in reference to the death of a child, and it looks almost as if the charity was carrying on something in the nature of a baby farm.

The typhoid epidemic at Belfast seems to be abating. The number of fresh cases notified during the week ending on Monday night was 269, as against 333 in the previous week, and the decrease has been fairly steady from day to day. Of course this may, as is hoped, go on, but a recrudescence is always to be feared, and Belfast offers a sad instance of prolonged sanitary neglect.

The annual meeting of the British Association for the Advancement of Science opened at Bristol on Wednesday, under the presidency of Sir William Crookes. The Colston Hall, the largest suitable building in Bristol, was last week burned down, to the consternation of the local committee as well as of the city. Every effort was, however, put forward to meet the emergency, and the meetings are proceeding.

The president succeeded in his address in keeping up the custom of making a startling statement, which has prevailed for a few years. Of course he passed in review the more recent discoveries, but more than half his time was devoted to a discussion of the great problem of providing food. He calculated that if the present rate of increase in population is to go on, the world will be unable to provide a wheat-growing area to supply the bread required by the year 1931. What then? Is the Caucasian race to be squeezed out by those who do not eat wheaten bread?

Sir William Crookes does not say this, but, after rebuking us for throwing nitrogen away in sewage to the tune of £16,000,000 a year, says we must look to chemistry for a supply of that element. The free nitrogen of the atmosphere is the source to look to—as all others will be exhausted—and that can be fixed by electricity generated by water power. Here is hope for the Caucasians, for he reckoned that Niagara could be thus made to yield sodium nitrate at £5 per ton or less, while Chile nitrate costs half as much again—and the great cataract could supply the energy required without much lessening its mighty flow.

HEART DISEASE AND TALL SCHOOL-HOUSES.

To the Editor of the Medical Record.

Sir: A matter which has been most forcibly brought to my attention, on account of chronic heart trouble of one of my own little ones, is the unusual height to which the public schools of this city are being built.

In this particular case the little one was utterly unable to climb the five flights of stairs required to reach her classroom. After several days' attendance, at the beginning of the school session, her trouble became so marked as to require her remaining away from school until such time as rest would correct the injury brought on by the unusual exertion to which she had been subjected.

In another case, dating back a few years, the daughter of a colleague had recently recovered from scarlatinal rheumatism, followed by marked heart lesion; after she had made several efforts at regular attendance during a period of six months, it was found absolutely necessary to withdraw this child from the public school and have her education continued in a schoolhouse which did not require such high stair climbing.

In the two cases just mentioned no serious deprivation of education would occur to either child, as it is possible for the parents to avail themselves of other means of instruction than those obtained in the public schools; but in many cases, when children have recently recovered from any disease which weakens the heart, the strain required by high stair climbing to reach classrooms would still further weaken it, and probably to such an extent as to require their removal from these schools and so deprive them of an opportunity to receive a liberal education, on account of lack of means on the part of the parents to send them to other schools where such conditions would not exist.

As the city of New York is spending money without stint for purposes of educating the coming generation, erecting public school buildings replete with every sanitary arrangement to prevent the communication of disease, and architecturally, in almost every case, ornaments which the citizens may well be proud of, I think that some of the more ornamental features might well be dispensed with, and the money so saved used for the purpose of installing one or more elevators for such children as those mentioned above and who present certificates from their physicians to the principal of the school of their inability to climb several flights of stairs; or a larger space of ground could be taken and lower buildings erected, the classrooms of which

could be reached without difficulty oy any child whose heart was more or less seriously affected, and also be more readily emptied in case of fire.

MICHAEL B. FEENEY, M.D.,
Chief Sanitary Inspector.

32 EAST THIRD STREET, September 26th.

THE QUALIFICATIONS, RESPONSIBILITIES, AND DUTIES OF THE REGULAR ARMY SURGEON—A REPLY TO DR. SENN.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: In the issue of *The Journal of the American Medical Association* for September 3, 1898, there appears an article by Dr. Nicholas Senn on "The Qualifications and Duties of the Military Surgeon," the object of which appears to be an attempt to demonstrate the inferiority of the personnel of the present medical corps of the army to physicians in civil life, particularly those at present in the volunteer service. The author is a man of such wide reputation and acknowledged distinction in his specialty of practice that, it seems to me, his specious argument and unjust conclusions should not go unanswered. Although those whose names and position would make their evidence of weight and value in the refutation of these charges do not seem inclined to defend the corps against them, as one of the younger members of the medical corps I feel constrained to take issue with Dr. Senn and to deny the justice or correctness of his conclusions. Notwithstanding the contrast between my own position as one of the junior army medical officers and the eminence of the surgical specialist who has produced this article, I am tempted to break a lance with him, taking courage from the knowledge that—

> "Thrice is he armed who hath his quarrel just,
> And he but naked, though locked up in steel,
> Whose conscience with injustice is corrupted."

Dr. Senn speaks of the "lethargy" and the "ease and luxury" of the senior members of the corps; of their use of "compends" in preparing for examination, and, as to the corps in general, of its inferiority in the "practical knowledge required in the treatment of injuries and disease." These are quite serious charges, it seems to me, coming, as they do, from such a source.

Any one who has been connected with the army in time of peace will know at once that these statements are incorrect, but others might not unnaturally be expected to believe them. The life of the army surgeon is a hard one at best; any one who will take the trouble to examine the papers required in the examinations for the grades of lieutenant, captain, and major will see that they cannot be passed by the use of "compends;" and the annual reports of the surgeon-general will show that the results attained by army surgeons "in the treatment of injuries and disease" are unsurpassed anywhere. The members of the army medical corps are graduates of the foremost medical colleges and hospitals of this country, are selected after a most severe competitive examination including laboratory and clinical subjects, and are obliged to "familiarize themselves with the most recent advances in medicine and surgery," if they retain their commissions. So far as my observation extends, the average national guard surgeon belongs, on the other hand, too often to the type of practitioner who, illiterate at the start (as admitted by Dr. Senn), graduates at one of the inferior medical colleges, subsequently accepts the Woodbridge method of treating typhoid fever as a great therapeutic discovery, and seldom prescribes an official preparation when he can find a proprietary article in the drug store. Laboratory methods are a sealed book to him, and I do not believe there are half a dozen men in the volunteer medical service who could make a sanitary analysis of a water sample. I wish to present here a few specific allegations against the national guard surgeons (as exemplified by their greatest representative and most distinguished mouthpiece), which I think will leave a doubt in the mind of any unprejudiced reader as to their superiority to the regular army surgeon.

1. In the article quoted, Dr. Senn says (and I believe him entirely correct in this statement) that "the first and most important duty of the military surgeon during active warfare is to prevent disease and unnecessary suffering by giving early advice and resorting to timely precautions. The location of camps, policing of the same, the water supply, food, and clothing are subjects which must receive his early and earnest attention." How many national guard surgeons have any experience in this direction? In the issue of *The Journal of the American Medical Association* for July 2, 1898, p. 35, Dr. Senn says: "The water is wholesome and palatable. . . . The only microbe which I was able to cultivate was the colon bacillus, and the presence of this microbe could be readily accounted for by the blocking of the sewer pipe, an evil which was promptly remedied." Now I do not believe that any officer in the army medical corps would make such a statement as this in reference to a water supply; the whole article would lead a professional sanitarian "to suspicion" that the perusal of a "compend" on hygiene would do no harm to the author in the event of his taking part in another war.

2. Dr. Senn's article is unprofessional and unethical, particularly, coming as it does from a member and ex-president of the American Medical Association. I think it is a violation of the spirit if not of the letter of the code of that association. If his criticisms were just, the fault would lie in the system rather than with individual officers, and the author has brought them forward at a very inopportune time for the interests of the present junior members of the army medical service. As is known to every one, the worst type of sensational journalism has selected the doctors of the war with Spain as scapegoats for the inevitable misfortunes of war, and it can be readily seen that the professional army surgeon is the only one who has anything permanently at stake and must bear the burden of any opprobrium that may result. Medical men all know what investigations of professional subjects by the laity are likely to amount to, no matter how high the personnel of the investigators. They might consider it advisable to inject a little new blood (of the vigorous volunteer variety) into the higher ranks of the medical corps in order to arouse it from its "lethargy." It is needless to point out that such a course as this, if allowed by Congress, would result in the complete ruin of the professional prospects of junior medical officers.

3. No regular army surgeon would speak or publish the statement that it was "the arrogance or stupidity of the commanding general of the invading army that is responsible for the extensive outbreak of yellow fever during the Cuban campaign." If he did, he would violate paragraph 4 of Army Regulations and probably be promptly court-martialed under the twentieth article of war. He would not desire to do so in any event, for he has learned the first principles of army discipline. The volunteer spirit of insubordination and lack of discipline (fostered by the newspapers and the women) have led to many evils in the present war, such as the making of perfect babies out of men who are supposed to be soldiers, and an utter subversion of discipline which, on account of association, it may take even the regular army a long time to recover from. Any one who intelligently reads the daily press will understand the point I am making,

especially if he has ever done any active service in time of war.

I believe that the whole trouble with Dr. Senn lies in the fact that his *ipse dixit* has been accepted so long in all matters pertaining to operative surgery he is inclined to believe he can speak *ex cathedra* about another distinct speciality—army medical administration—which he has temporarily invaded. This, coupled with his well-known *cacoethes scribendi*, will sufficiently explain his remarkable article.

There is, unfortunately, a hysterical idea prevalent among the laity, and I fear among some professional men as well, that the one thing needed in the medical line in time of war is brilliant operative dexterity. As a matter of fact, operative work is a matter of secondary importance in army medical affairs. All doctors can operate with reasonably good results, especially since the introduction of antisepsis and the modern small-calibre firearm, but none without army experience can organize and successfully administer large military hospitals. Then the records of all wars show much greater incidence of, and fatality from, internal diseases than from wounds and their results. Another very important point is the training of the army surgeon in theoretical and practical hygiene, particularly military sanitation. This the civil practitioner does not study and, naturally enough, cannot learn in a short campaign.

In conclusion, I desire to express my regret at being drawn into anything resembling a newspaper controversy. This is my first and probably last essay in that field. I simply felt that my corps should be defended from the aspersions cast against it by such an eminent man. I am sorry that one of greater prominence, one wielding a more facile pen, has not done something in its behalf. I have always had the greatest admiration for the professional and scientific ability of the author of the article reviewed. His work in introducing the knowledge of modern surgical pathology into this country (not to speak of his great skill as an operator) would alone entitle him to recognition as one of the greatest medical men this country has produced. I trust that, in the future, he will confine his genius to those fields in which it is so well qualified to range. Very respectfully,

CHAMPE CARTER MCCULLOCH,
Captain and Assistant Surgeon, U. S. A.

WEST TAMPA FIELD HOSPITAL, TAMPA, FLA.,
September 18, 1898.

HAS A GREAT OPPORTUNITY BEEN LOST?

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Your esteemed paper of last Saturday (September 17th) recorded, under "News of the Week," the magnificent gift of $1,500,000 for a Cornell Medical College, from Mr. Oliver H. Payne. This means another medical college added to the many already existing. When, a year ago, the medical press announced the prospective union of Bellevue and the University medical colleges, all true lovers of advanced medical education in our country rejoiced, for this would have created one greater and better-equipped school, instead of two rival institutions. But a controversy arose, the facts of which are too well known to need repeating. Enough that it resulted in a split, and, although the two colleges finally united in name, their respective faculties, both composed of equally prominent members of the profession, separated, and a new medical college (a rival to the University Bellevue Hospital Medical College) sprang into existence.

Paris, Berlin, and Vienna, the greatest centres of medical learning in the world, each have but one medical faculty. Why must New York have a dozen (this is the actual number of chartered medical colleges now existing in the city of New York)?

Is it a wonder that even our best medical schools do not receive abroad the prestige which they deserve? It is the multiplicity of medical schools in the United States which weakens their standing.

Never in the history of medicine has there been presented from one individual in the interest of medical education so munificent a gift as the one above referred to. What a great school would have been the result of the actual union of the two faculties with men like Mr. Payne as trustees! The combined facilities for clinical, experimental, and didactic teaching, which the new Bellevue University College and the new Cornell school would offer, could hardly be surpassed by any school in this country or abroad. These two schools combined, and perhaps a future amalgamation with the excellent medical department of Columbia University, would make Greater New York the possessor of the best, the largest, and the richest medical school of the old and new worlds.

Perhaps it is not too late yet, and all lovers of advanced medical education in this country may yet see realized this beautiful dream of one great medical faculty in Greater New York.

The medical press has been largely instrumental in obtaining the higher standing which our medical colleges now enjoy, and has recently advocated the amalgamation of medical schools and the reduction of their number.

Let the good work go on, and let us hope that the grand opportunity for uniting the two great faculties is not yet lost. S. A. KNOPF, M.D.

955 MADISON AVENUE.

ONE OF THE CAUSES OF AN EPIDEMIC OF TYPHOID FEVER IN MILITARY CAMPS. SPECIAL REFERENCE TO CAMP CUBA LIBRE.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: When there is an epidemic or many cases of typhoid fever occur at any place, the first thought is of the water supply. The water used by all the soldiers encamped at Jacksonville, Fla., is from artesian wells, eight hundred to a thousand feet deep, and piped to each company. There is no way by which it can become contaminated. When the first regiment of troops arrived at the camp, they found this artesian water awaiting them. And it has preceded the other regiments.

Three days after the first regiment arrived, a surgeon stated that three soldiers had typhoid fever. Other regiments brought it with them. The second Mississippi brought six or eight cases.

The regiments encamped within the city limits immediately built privies, which had tubs to hold the fæcal discharges, and these were hauled away at night. Other regiments as they came, and these first after they moved camp, dug sinks for the excreta. The contents of the sinks were supposed to be covered over with earth once or twice a day, at first.

The company kitchens were only a short distance from the sinks and privies. Many of the regiments had canteens, where various articles of food, etc., also beer and other drinks, were sold. Around the different camps there sprang up almost as if by magic many small houses in which were sold soft drinks, melons, fruit, cakes and pies, and other things. Each of the latter places, of course, had to be supplied with a sink, which could be used by soldiers if they desired.

Flies encamped with the soldiers, and increased by the thousands. They swarmed over and upon the ex-

creta in the tubs and sinks. When interrupted, some would, with feet, legs, proboscides, and perhaps wings and body carrying typhoid germs, seek new pastures round the company kitchens, the tables of the restaurants, the counters of the canteens and the booths. These places were never lacking of them. They were on the glasses, cups, plates—everything, and, of course, the food. What easier or more certain method could there be of spreading the typhoid bacilli? In my humble judgment there is no other possible way, at this camp, by which so many soldiers could contract typhoid fever. If this is true, or if it is even one of the principal ways the disease has spread through the camp here, then it can also be the principal method of its extension in the other camps. I have been informed that flies were very numerous in all.

Private soldiers in camp usually act as big, overgrown boys, and need the intelligent, watchful, and kindly care of the officers. The government furnishes abundant food, of the best quality and sufficient variety. The officers should not only see that the men get it, but also that it is properly cooked and served in the most cleanly manner possible, thus preventing much sickness. The officers certainly should be as sedulous in seeing that the best sanitary regulations are carried out, as they usually are in pressing the drill and manual of arms. The one is as important as the other. And when it is correctly done there will no longer be the reproach that in war twice as many soldiers die of disease as are killed and die from wounds. The sinks should have strict attention given them. The fæces should be covered with earth immediately by each soldier. Besides, proper disinfectants should be freely used.

Where camps of instruction are established, as at Chickamauga, Camp Alger, Jacksonville, etc., it would be economy to have the company kitchens screened to exclude flies, as some of the officers' kitchens or mess tents have been here. The cost would be a mere bagatelle compared with the amount paid for pensions on account of deaths from diseases that might be thus prevented.

Very few of us in this country will believe that selected, healthy volunteers cannot be congregated in properly located camps, in the South or the North, without their ranks being thinned by preventable diseases.

I have just read, in to-day's *Times-Union*, a statement by Dr. James Carroll, bacteriologist of the National Medical Museum in Washington, who was sent here by the war department to investigate the diseases prevailing among the soldiers at Camp Cuba Libre, that there is not a single case of malarial fever in either of the seventh corps hospitals—that all the fever is typhoid. This certainly speaks well for Jacksonville, for the typhoid was brought here by the soldiers.

E. M. Nolan, M.D.

Jacksonville, Fla., September 18, 1898.

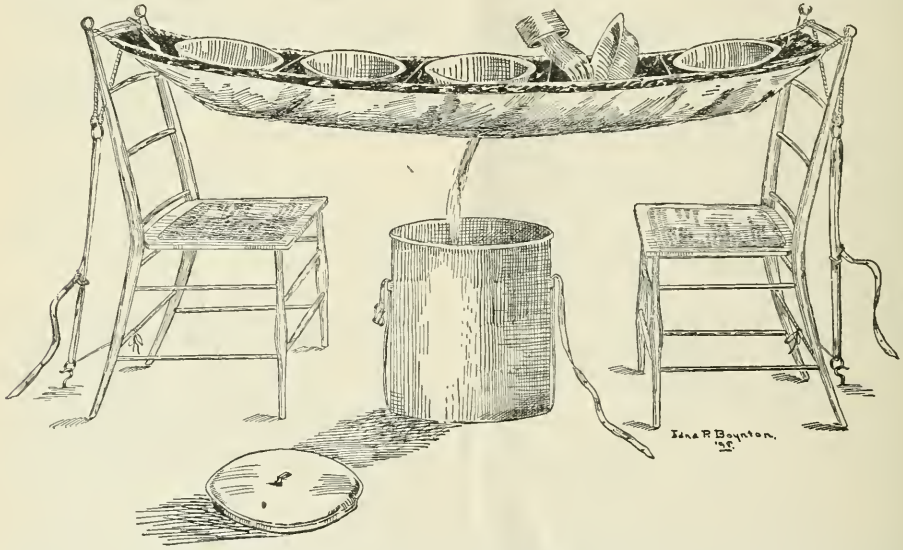
New Instruments.

THE HAMMOCK WASHSTAND.

By CEPHAS L. BARD, M.D.,
VENTURA, CAL.

The utilization of chairs or tables as washstands during operations performed in homes, necessitating, as it does, frequent handling of the basins in emptying and filling them, is unconformable to the requirements of aseptic surgery. That the danger of infection is greatly enhanced by this practice is indisputable.

To reinforce this weak link of the chain of surgical technique, and to provide the surgeon with a convenient and economical device, I would call his attention to "the hammock washstand" invented lately by myself, and which he can readily procure, no matter how remote he may be from the depots of surgical supplies.



By reference to the illustration it will be seen that it consists of a hammock composed of rubber cloth, canvas, or other suitable material, five and one-half feet in length and fifteen inches in width. Its simple construction and position are well shown in the illustration. It is stretched over the backs of two chairs, and its lateral supporting cords are drawn taut by a strap and buckle connecting each end with screw hooks placed in the floor. Additional rigidity is attained by lashing the lower rungs of the chairs to the hooks. The rims of the basins, preferably of granite iron ware, and five in number, rest upon the lateral supporting cords, which are maintained in their proper relation by stay-cords, four in number, which are clearly shown in the cut. It will be observed that, while the width of the material used in the construction of the

hammock proper is fifteen inches, the distance between the lateral supporting cords is somewhat less than the diameter of the basins.

When placed in position every basin is easily tilted and emptied by the immersed hand of the operator, as shown in the illustration, and the withdrawal of the hand is instantly followed by the return of the basin to its original position, owing to the rotatory or pivotal action of its rim on the edge of the hammock. The expelled contents of the basin pass through a circular opening, one inch in diameter, in the hammock's most dependent portion, into a pail, made of galvanized iron, tin, or other suitable material, placed beneath it, and which serves also as a receptacle for the storage and transportation of both hammock and basins. Before being placed in position the hammock and basins are thoroughly sterilized by being boiled in their container on the kitchen stove. Scrub brushes, trays for instruments, and other articles can be carried and sterilized in this same pail.

If the handles of the pitchers used in replenishing the empty basins be covered with sterilized gauze, the danger from infection by contact will, so far as this feature in technique is concerned, be reduced to a minimum. As will be readily understood, the features of this device can be utilized in making a permanent washstand in the operating-room of the hospitals, substituting a metallic trough for the hammock and a waste pipe for the pail.

Therapeutic Hints.

Treatment of Cirrhosis of the Liver.—Dr. J. Barr, after excluding the rarer etiological possibilities, recommends that alcohol be interdicted and the gastritis treated; and further, that a large sinapism be applied over the epigastrium and liver. If there is portal obstruction he advises restriction of the fluid ingested, as the work of the heart is thus lessened. To relieve the hepatic and portal engorgement he employs calomel; but he objects to hydragogue cathartics for the purpose of reducing ascites. Digitalis and a little nitroglycerin may be used as diuretics to diminish peripheral resistance; he has found copaiba useless. If paracentesis be necessary, it should be done early, before the abdominal walls are relaxed. If the walls become relaxed, tapping is accompanied by distressing meteorism. In certain cases venesection and the establishment of a collateral circulation may be used.—*St. Louis Medical and Surgical Journal.*

Treatment of Palpitation.—Dr. Henri Huchard treats this symptom according to its cause. The palpitation of toxic origin (coffee, tobacco) or from drugs (quinine) disappears when the cause is removed. If it is of gastro-intestinal origin and generally nocturnal, due to dyspepsia, with excess of hydrochloric acid, alkalies in sufficient dose and regulation of diet are necessary. Iron does not produce palpitation unless in consequence of its intemperate administration, as in dyspeptic chlorosis it produces or accentuates a drug gastropathy. Since it is true that there is no part of the body which may not be the cause of cardiac palpitation, it is necessary to investigate all possible causes before attributing a lesion to the heart. Of these lesions which are accompanied by palpitation (acute aortitis at its commencement, acute endocarditis and pericarditis, pericardial adhesions, obstruction or insufficiency at the mitral valve), the symptoms of cardiac erethism are benefited by a pill of one and one-half grains of quinine hydrobromate, three-fourths of a grain each of powdered digitalis and extract of convallaria, twice to four times daily.—*Revue Générale de Clinique et de Thérapeutique.*

Treatment of Alcoholism.—Dr. N. S. Davis (*Quarterly Journal of Inebriety*, No. 2, p. 162, 1897) believes that the patient should be instructed in regard to deceptive and injurious influences of alcoholic drinks, so that he is actually convinced that their use is, on all occasions, unnecessary. The patient should be placed under good physical and social surroundings. For impaired digestion, irritable nervous system, and disturbed sleep, one-sixtieth of a grain of digitalin with one-thirtieth of a grain of strychnine at each meal, with from twenty to thirty minims of diluted hydrobromic acid at bedtime, will give excellent results. For constipation, thirty minims of fluid extract of rhamnus purshiana may be added to the acid. Instead of the digitalis and strychnine, a pill or capsule of a grain of extract of hyoscyamus, with three grains of cerium oxalate, may be given. Before an anticipated period of dissipation, a pill of two grains of quinine sulphate, the same amount of extract of eucalyptus globulus, and one-third of a grain of extract of cannabis indica should be given with each meal for two weeks. The patient should be separated from his associates, and if this cannot be done in any other way, he should reside in a well-regulated asylum for six to twelve months.

The Treatment of Graves' Disease.—Dr. Hector Mackenzie (*American Journal of the Medical Sciences*) speaks as follows in regard to the treatment of Graves' disease by means of thymus gland: "I am of opinion that the dose, to be of any use, should be at least one or two drachms a day, of the fresh gland or its equivalent in the form of extract or powder. The conclusion at which I have arrived is that the thymus gland possesses no specific action in Graves' disease. I have found it in most cases to have no effect either on the heart, on the goitre, or on the exophthalmos. At the same time it appears to be a remedy of some value, improving the general condition, and, in this way, may assist toward the recovery of the patient. I should, at present, place it in the same class of remedies as cod-liver oil."

Treatment of Burns.—The most exquisitely painful burns are assuaged in a few moments by an application of campho-phénique after the following formula:

℞ Cocaine hydrochlorate..... gr. v.
Campho-phénique..... ʒss.
Olive oil..... ʒss.
M. Rub up the cocaine and campho-phénique and add the olive oil.

A man whose hand had been torn and badly burned by an electrical discharge, the pain of which was so severe that he fainted twice before the dressing could be applied, expressed himself as absolutely without pain in less than one minute after the application.—*St. Louis Medical and Surgical Journal.*

Vermifuge for Children.—

℞ Benzonaphthol,
Santonine.....āā gr. xxx.
Sugar..... gr. lxxx.
M. Divide in twenty powders. S. Give two to five powders daily.

Obstinate Chronic Cough.—

℞ Tinct. sanguinariæ..... ʒ ij.
Antimonii et potassii tartratis..... gr. i.
Morphinæ sulph..... gr. ij.
Spir. anisi..... ʒ ss.
Glycerini..... ʒ ij.
Syr. simplicis.....q.s. ad ʒ iv.
M. S. ʒ i. q. 3 h.

—Dr. J. D. Ely, *Toledo Medical and Surgical Reporter.*

Pneumonia.—Silver nitrate, from 0.005 gm. to 0.015 gm. per diem, divided into ten doses in pill form.—Caccianiga, *Gazz. degli Osped.*, May 1st.

Pruritus Vulvæ.—

℞ Quininæ sulphatis..... 1.5
Menthol..... 0.5
Acidi carbolici..... 1.75
Ung. citrini..... 4
Ichthyoli..... 10
Lanolini..... 25
Olei castorei..... 40

—Beall.

Syphilis.—

℞ Alum. crud..... 5
Aquæ destill..... 500
Aquæ menth. piperitæ..... 30
M. S. Mouth wash.

—Dr. Julius Scheff.

Bronchitis.—

℞ Apomorph. hydrochlor..... 0.03
Morphinæ hydrochlor..... 0.02
Acidi hydrochlor. dil..... gtt. 5
Syr. aurantii cortic..... 15
M. S. To be taken in divided doses during the day.

—Neusser.

Pertussis.—

℞ Tinct. digitalis..... ♏ xvi.
Antipyrini..... gr. xxxij.
Tinct. opii camphor..... ʒ i.
Syr. tolutani..... q.s. ad ʒ ij.
M. S. ʒ i. three times a day.

—Koplik.

Dry Pleurisy.—

℞ Menthol..... 0.5
Cocainæ hydrochl.,
Morphinæ hydrochl ..... āā 0.1
Unguent. simpl..... 50
M. S. Apply twice daily.

—Neusser.

Tuberculous Laryngitis.—

℞ Carbolic acid..... 1–5 gm.
Lactic acid..... 2–15 "
Neutral glycerin..... 20 "
S. First anæsthetize affected parts with ten-per-cent. cocaine solution and then apply.

—Dr. R. Botey.

Decayed Tooth.—

℞ Crystallized carbolic acid..... 2 gm.
Oil of lemon..... 2 "
Alcohol, ninety per cent..... 10 "
S. Apply on cotton.

—Dr. S. Dunogier.

Acute Eczema.—

℞ Picric acid..... 3 parts.
Tepid boiled water..... 250 "
S. Apply locally.

—Dr. Paul Thièry.

Rickets.—

℞ Phosphori..... 0.1
Olei jecor. asel..... 100
M. S. Teaspoonful once daily.

—Kassowitz.

Vulvo-Vaginitis.—

℞ Aluminis,
Acidi carbolici..... āā 1
Aquæ fontis..... 100
M. S. Apply three times a day.

—Monti.

Aromatic Cod-Liver Oil.—

℞ Olei jecor. asel..... 400 gm.
Syr. bals. tolutan..... 200 gm.
Tinct. bals. tolutan..... gtt. xij.
Tinct. caryophyl..... gtt. ij.
S. Shake well before using.

—Bricemoret, *Gaz. Hebdomad.*, No. 15, 1898.

Insomnia of Alcoholic Pneumonia.—

℞ Codeine..... gr. ij.–iv.
Elix. chloralamide..... (gr. xx.–ʒ ss.) ʒ ij.
M. S. Tablespoonful, to be repeated if necessary every two hours until three doses are taken.

—A. A. Smith.

Severe Syphilis.—

℞ Iodine..... 1
Potassii iodidi..... q. s.
Glycerin, neutral..... 5–10
Acidi citrici..... 15
Syr. simplicis..... 1,000
M. S. ʒ i.–ix. daily, half-hour before meals.

—Bouveyron, *Lyon Médical, 2, 1898.*

Pruritus Scroti.—

℞ Hydrar. chlor. corrosiv..... 0.05
Alcohol,
Aquæ chamomill..... āā 25
Chloroformi..... gtt. 5
Aquæ laurocerasi..... q.s. ad 100
S. Use as a wash.

—Leistikow.

Habitual Constipation.—

℞ Podophyllini..... 0.5
Extr. aloes,
Ext. rhei..... āā 3
Ext. taraxaci..... q.s.
M. ft. pill. No. xl. S. One or two pills before retiring.

—Nothnagel, *Zeitschrift für Krankenpflege*, April, 1898.

Polyarthritis Rheumatica.—

℞ Salipyrin..... 6
Glycerini..... 14
Aquæ destill..... 40
Syr. rub. idæi..... 30
M. S. Tablespoonful every hour.

—Kölbl, *Allgemeine Wiener Mediz.-Zeitung*, Nos. 5 and 6, 1898.

Diffluvium Capillorum.—

℞ Resorcini,
Quininæ sulphatis..... āā gr. xx.
Tinct. cantharid.,
Tinct. capsici..... āā ʒ i.
Vaselini..... ʒ i.
M. S. Rub ʒ ss. into scalp daily.

Pertussis.—

℞ Phenocol hydrochloride,
Antipyrin..... āā gr. viiss.
Potassium bromide..... gr. vi.
Syrup of bitter-orange peel,
Orange-flower water..... āā q.s.
M. S. Divide into four doses and give all in twenty-four hours to a child of eight years.

—Guaita.

Hemorrhoidal Conditions during Pregnancy.—

℞ Potassii bitartratis,
Sulphur. præcipitatis..... āā p. æ.
M. S. ʒ i. twice daily.

—Da Costa.

Acute Bronchitis.—

℞ Ammonium chloride..... ʒ iij.
Comp. syrup of squill..... ʒ vi.
Syrup of wild cherry..... q.s. ad ʒ iij.
M. S. Teaspoonful every three hours.

—Eshner.

Chronic Conjunctivitis.—

℞ Acidi tannici..... gr. ij.–iv.
Sodii biboratis..... ʒ i.
Glycerini..... ʒ ij.
Aquæ camphoræ..... ʒ iv.
M. S. External use.

Or:

℞ Ichthyol..... ♏ xx.
Aquæ sambuci,
Aquæ destill..... āā ʒ ij.

—Berry, *Medical News*, January, 1898.

Pharyngitis Sicca.—

℞ Acidi carbolici..... ʒ i.
Tinct. iodi..... ♏ v.
Tinct. opii..... ♏ vij.
Tinct. aloes..... gtt. x.
Glycerini..... ʒ i.
M. S. Apply to the pharynx thrice daily by means of an atomizer.

—*Medical News.*

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending September 24, 1898:

	Cases.	Deaths.
Tuberculosis	133	146
Typhoid fever	167	29
Scarlet fever	59	3
Measles	41	3
Diphtheria	109	17
Cerebro-spinal meningitis	0	5
Laryngeal diphtheria (croup)	6	3

Tight Lacing.—Dr. W. E. Fitch read a paper with this title before the Georgia Medical Association, on April 21st, upon the relation of tight lacing to uterine development and to diseases of the female organs of generation, in which it is stated that "Africans, Indians, and all other people who wear loose clothing are almost entirely free from pelvic disorders. It is in this class of women that we find the most natural and perfect pregnancy, the easiest and most natural deliveries, and the most satisfactory puerperium."

Infectious Diseases tend to get well of their own accord; that is, the inherent forces of the tissues themselves are generally sufficient to overcome the infection and prevent any great disorder of nutrition, when the infection is not too great. When the infection is too great, disorders of nutrition are produced, and we find the tendency toward the production of fibrous tissue increased, as we see well illustrated in the sequelæ of scarlet fever, typhoid fever, tuberculosis, and other diseases. Everything seems to prove that syphilis is undoubtedly an infectious disease, and yet one of its most startling anatomic features is the increase of fibrous tissue, which suggests the doubt as to the complete curability of the disease. —Ernest F. Tucker.

Erroneous Habits of Eating.—I have come to the conclusion that more than half the disease which embitters the middle and latter part of life is due to avoidable errors of diet; and that more mischief, in the form of actual disease, of impaired vigor, and of shortened life, accrues to civilized man from erroneous habits of eating than from the habitual use of alcoholic drink, considerable as I know that evil to be.—Sir Henry Thompson.

Professional Secrecy.—A physician in France was recently fined for refusing to testify to the circumstances of an altercation which he had witnessed between husband and wife on the occasion of a visit which he made in his professional capacity. The quarrel occurred immediately upon his arrival, and he went away without either prescribing or giving any medical advice whatever. For this reason the divorce court held that he was absolved from all obligations of professional secrecy, and was bound to disclose what he saw, just as any non-professional witness would be. He contended, on the other hand, that inasmuch as he had been summoned solely as a medical adviser, his presence at the scene was wholly due to his professional character, and that if he had not been there as a doctor he would not have been there at all, in which event he would have had nothing to tell. The smallness of the fine imposed, which was only ten francs, indicates that the court did not deem his refusal to testify a very heinous offence, and before he was compelled to give the desired evidence the case was settled.—*New York Sun*, September 18th.

A Layman's Imaginative Mind.—I remember going to the British Museum one day to read up the treatment for some slight ailment of which I had a touch—hay fever, I fancy it was. I got down the book and read all I came to read; and then, in an unthinking moment, I idly turned the leaves and began indolently to study diseases generally. I forget which was the first distemper I plunged into—some fearful devastating scourge I know—and before I had glanced half way down the list of "premonitory symptoms" it was borne in upon me that I had fairly got it. I sat for a while, frozen with horror; and then, in the listlessness of despair, I again turned over the pages. I came to typhoid fever, read the symptoms, discovered that I had typhoid fever; must have had it for months, without knowing it; wondered what else I had got. Turned to St. Vitus' dance; found, as I expected, that I had that, too; began to get interested in my case, and determined to sift it to the bottom. And so I started alphabetically, read up ague, and learned that I was sickening for it, and that the acute stage would commence in about another fortnight. Bright's disease, I was relieved to find, I had only in a modified form, and, so far as that was concerned, I might live for years. Cholera I had with severe complications; and diphtheria I seemed to have been born with. I plodded conscientiously through the twenty-six letters, and the only malady I could conclude I had not got was housemaid's knee.—Jerome K. Jerome, "Three Men in a Boat."

Sudden Death in Children.—Sudden death of apparently healthy children, according to Dr. Bertholl (*Archiv für Kinderheilkunde*, No. xxiv., 1898), is usually due to acute or subacute hyperplasia of the thymus gland. He concludes as follows: (1) In spite of opposing views, the existence of an idiopathic hypertrophy of the thymus, capable of bringing about the death of an infant, has been demonstrated. (2) A swollen thymus gland, in association with rachitis and the status lymphaticus, may also play an important rôle in the sudden death of children during an attack of laryngismus stridulus. (3) Finally, an acute lordotic flexion of the neck may compress the trachea in such a manner that sudden death by asphyxia can take place.—*Pediatrics*, June 15th.

The Disinfection of Rooms.—Novy and Waite (*Medical News*, May 21st) conclude a paper upon the above subject with the following general directions:. (1) All cracks or openings in the plaster or in the floor or about the door and windows should be caulked tight with cotton or with strips of cloth. (2) The linen, quilts, blankets, carpets, etc., should be stretched out on a line in order to expose as much surface to the disinfectant as possible. They should not be thrown into a heap. Books should be suspended by their covers, so that the pages will fall open and be freely exposed. (3) The walls and floor of the room and the articles contained in it should be thoroughly sprayed with water. If masses of matter or sputum are dried down on the floor, they should be soaked with water and loosened. No vessel of water should, however, be allowed to remain in the room. (4) One hundred and fifty centimetres (five ounces) of the commercial forty-per-cent. solution of formalin for each one thousand cubic feet of space should be placed in the distilling apparatus and be as rapidly distilled as possible. The keyhole and spaces about the door should then be packed with cotton or cloth. (5) The room thus treated should remain closed at least ten hours. If there is much leakage of gas into the surrounding rooms, a second or third injection of formaldehyde at intervals of two or three hours should be made.

The Bengalee have no lunulæ. Jews as a rule have large ones. In Greeks the thumb only has one.

The Discovery of America.—The *Medical Age* calls attention to the part played by a physician, Dr. Paolo Toscanelli, of Florence, Italy, in the following terms: "The Spaniards are probably asking themselves what on earth possessed Christopher Columbus that on an evil day he should have discovered America. Now that everything Spanish is to be reprobated, it is satisfactory to find that, while Columbus actually discovered the western continent, the existence of it and the way of reaching it were suggested to him by a Florentine doctor named Paolo Toscanelli. The truth seems to be, according to Professor De Lollis, that Columbus placed himself in communication with Toscanelli in 1479, and that Toscanelli provided Columbus with a map which guided the discoverer in his voyage. Columbus, in his log of the ship, admits the service that Toscanelli performed. The Florentines are about to celebrate the part Dr. Toscanelli performed in the discovery of the western continent."

Roentgen Skiagram in Persistence of Ductus Botalli.—In a case presented a short time ago to the Berlin Society for Internal Medicine, the diagnosis of a persistent ductus Botalli was confirmed by an *x*-ray picture. Gerhardt has pointed out that there is in such cases an area of dulness above the base of the heart to the left of the sternum. This is considered to be due to the dilated pulmonary artery. In this case a distinct shadow was found in this situation in the Roentgen skiagram. This, too, is typical of the Zeitgeist in Germany, for, while scarcely a surgeon makes a diagnosis of a fracture without a skiagram, no internist concludes definitely as to the presence of an aneurism without the same aid, and even invokes it at times for tuberculous infiltration of the lungs and other intrathoracic conditions.—*Philadelphia Medical Journal.*

For the Removal of Nitrate-of-Silver Stains from Clothing.—A solution of iodine in ammonia water, the so-called colorless tincture, will remove nitrate-of-silver stains from the hands, clothing, etc., but, owing to the danger of the formation of nitrogen iodide, which is a powerful explosive, it is not recommended. A solution of iodine in iodide of potassium dissolved in water is nearly as quick and quite as effective. Dissolve fifteen parts of iodide of potassium in fifty parts of water, and to the solution add ten parts of iodine. When the latter is dissolved add sufficient water to make five hundred parts. Keep in a well-stoppered bottle. Treat the spots with this, and after a few minutes with a ten-per-cent. solution of caustic soda, which will remove the silver iodide formed by the first treatment.—*National Druggist.*

What Constitutes a Liberal Education.—That man has a liberal education who has been so trained in youth that his body is the ready servant of his will, and does with will and pleasure all the work that, as a mechanism, it is capable of; whose intellect is a clear, cold, logic engine, with all its parts of equal strength, and in smooth working order, ready, like the steam engine, to be turned to any kind of work, and spin the gossamers as well as forge the anchors of the mind; whose mind is stored with the knowledge of the great and fundamental truths of nature and of the laws of her operations; one who, no stunted ascetic, is full of life and fire, but whose passions are trained to come to a halt by a vigorous will, the servant of a tender conscience; who has learned to love all beauty, whether of nature or art, to hate all vileness, and to respect others as himself. Such a one, and no other, has had a liberal education.—Huxley.

Modern Medical Students learn surgery, which but few practice; nearly all practise obstetrics, which few learn.—Sinclair.

Compensation in Cases of Appendicitis.—The experienced and really capable physician is entitled to a fee proportionately important to that which surgery expects, when the equivalent in service is rendered. Medical treatment strives to save and prolong human life, and when the result to the patient is the same, whether through the assistance of surgeon or of physician, why need the fee be widely different? The fee of $500 to $5,000 may or may not be too much for an appendectomy, but if the same end is safely and satisfactorily attained by the practitioner, why should his fee be less than that of his surgical contemporary? When the emoluments for medical work, skilfully and successully accomplished, whether by surgeon or by physician, are relatively similar, there will be an incentive for closer co-operation, higher medical thought, and better treatment than prevails in some places at this time. The practitioner is entitled to the full equivalent in exchange for intelligently performed services in the conservation of human life, and that equivalent should correspond to the measure of success in each case treated, with a proper and due regard for the skill, experience, and years in medical practice.—Dr. Elmer Lee, *Journal of the American Medical Association*, September 10, 1898.

Masturbation and Insanity.—Of all sexual conditions complicating insanity, none occupies the importance, either in the professional or the lay mind, that masturbation holds. It is a vice of most frequent occurrence among our sane population, and it is almost universally practised by the insane. That masturbation alone, in the normal individual, produces insanity, is certainly not true; for were this the fact, the accommodations of our asylums would have to be so increased as to hold at least five hundred thousand, rather than the five thousand insane credited to our State.—Dr. J. W. Robertson, *Pacific Medical Journal*, September, 1898.

Laughter is one of the greatest helps to the digestion with which I am acquainted, and the custom prevalent among our forefathers of exciting it at table by jesters and buffoons was founded upon true medical principles.—Hufeland.

Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the Marine Hospital service during the week ending September 24, 1898:

Small-Pox—United States.

		Cases.	Deaths.
Alabama, Dwight	August 1st to September 12th..	12	1
Kansas, Pawnee	September 15th	1	
Virginia, Norfolk	September 20th	2	

Small-Pox—Foreign.

China, Hong Kong	July 31st to August 6th	1	
England, London	August 27th to September 3d ..	2	
India, Madras	August 6th to 12th	1	
Russia, St. Petersburg	August 13th to 20th	1	
St. Petersburg	August 20th to 27th	1	
Uruguay, Montevideo	July 31st to August 6th	1	

Yellow Fever—United States.

Louisiana, Franklin	To date	70	2
Harvey's Canal	To date	1	
Jefferson County	To date	5	
Houma	To date	1	
New Orleans	To date	2	
Mississippi, Jackson	To date	2	1
Orwood	To date	41	
Oxford	To date	9	1
Taylor	To date	23	2
Waterford	To date	1	

Yellow Fever—Foreign.

Brazil, Rio de Janeiro	July 31st to August 6th	11	7
Costa Rica, Limoa	September 4th to 10th	..	2
Limon	September 16th to 24th	..	2
Mexico, Vera Cruz	September 1st to 8th	..	4
Vera Cruz	September 8th to 16th	..	6

Cholera.

India, Calcutta	August 6th to 12th	..	71
Japan, Osaka and Hiogo	July 31st to August 6th	1	1
Osaka and Hiogo	July 16th to 31st	4	2

Plague.

India, Bombay	August 9th to 16th	..	101
Calcutta	July 23d to 30th	..	4

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Original Articles.

CONTUSED WOUNDS OF THE ABDOMEN AND THEIR SURGICAL TREATMENT.[1]

BY JOHN T. ROGERS, M.D.,

CLINICAL INSTRUCTOR IN SURGERY, UNIVERSITY OF MINNESOTA, ST. PAUL, MINN.

THE erect posture of man and the inadequate protection afforded to the viscera by the abdominal walls subject the abdominal contents to various injuries, not the least infrequent of which are abdominal contusions. Our text-books dismiss the subject with unsatisfactory instructions as to diagnosis, symptoms, and treatment, some authors even failing to mention that contusions of the abdomen ever occur. The literature of the present day is likewise incomplete and unsatisfactory in its treatment of this condition. That more cases are not reported in our journals is, I believe, due to the fact that almost all grave contusions of the abdomen result fatally, and we are very loath to report our unfavorable cases, even to the medical profession. The writer hopes that the discussion of his paper will bring forth the reports of many cases which he feels sure have occurred in the practice of the members of this society. My object will have been accomplished if I succeed in interesting you sufficiently to induce you to report your cases, not only to the society but to the journals, thus enabling the profession at large better to understand this condition, and to treat it more intelligently than has been done in the past. Reports of cases with comments by experienced men are, to my mind, better educators on any surgical subject than lengthy articles based upon theoretical knowledge.

Abdominal contusions most often result from kicks from beast or man, blows with blunt instruments, squeezing between two heavy bodies, and, from the nature of their occupation, lumbermen in the woods or saw-millsare frequently the recipients of such injuries.

Symptoms.—From the very extensive distribution of the sympathetics to the abdominal contents, it would be but natural to expect to have shock as a symptom of prime importance. That there are exceptional cases in which no shock is manifest only goes to prove the rule. It is present in nearly every case to a greater or less degree, depending upon the nature of the injury, its location, the character of the vulnerating force, and upon the condition of the abdominal wall and contents of the abdomen at the time of injury. A blow applied directly over the solar plexus always causes a great degree of shock, and has been known to produce death, without injury to the abdominal wall or to the contents of the abdomen. In many cases there is no external evidence of violence to the abdominal wall, or, when present, may be of so slight a nature as to cause little or no attention.

On the other hand, there may be extensive contusion and laceration of the abdominal walls, without injury to the contents of the abdomen. Severe pain, nausea, and vomiting, immediately following or accompanying shock, may be taken as evidence of grave abdominal injury. Obstipation is usually marked.

Great anxiety, restlessness, and fear of impending death are pronounced. Bryant, Hitchcock, and Lambert each report a case in which none of these symptoms were present. The patients in each instance walked for a considerable distance with their intestinal contents in the peritoneal cavity. Usually, however, the pain is excruciating, especially at the seat of injury. Vomiting is continuous. There are great prostration, lividity of lips, and extreme pallor; the pulse is small, rapid, and irregular; respiration is shallow; there are subnormal temperature, leaky skin, and rapidly developing tympanites, due to intestinal paralysis or to the escape of gas from the intestine. Extreme rigidity of the abdominal walls is, perhaps, the most important and characteristic symptom. It is present in every case and may be considered almost pathognomonic of grave intra-abdominal lesion. Deaver says he has seen this condition so pronounced as to call to mind the checkerboard appearance of the normal abdominal walls as represented by artists of former times. In those cases which I shall report later (all of which were fatal), this boardy condition was present in a marked degree. The character of the vomiting was varied from the simple expulsion of the stomach contents to the most violent retching or regurgitation of the intestinal contents, always an evidence of grave abdominal lesions.

Pathology.—Contusions of the abdomen may produce lesions of any of the abdominal viscera. The alimentary tract, being least protected, is most often the seat of grave injury. Seventy-five per cent. of these lesions occur in the small intestines, the rupture usually taking place outside of the mesenteric attachment. It is generally conceded to be due to squeezing of the intestine between the compressed abdominal wall and the vertebral column. Intestines distended with gas or fæces are more apt to be injured than is the collapsed bowel.

Diagnosis.—The chief points to be considered in making the diagnosis of grave intra-abdominal lesions are the history of the injury, location of the injury, character of the vulnerating force, rigidity or boardy condition of the abdominal walls, obstipation, vomiting, pain, anxiety, and restlessness, the degree of shock and prostration. The pulse and temperature, while not to be depended upon in making a diagnosis, may be taken as reasonably safe guides in making a prognosis. Depending upon the degree of shock, the pulse is at first rapid, irregular, and weak; temperature, subnormal or normal. In favorable cases the pulse becomes stronger and regular, temperature normal or above normal. In unfavorable cases the pulse continues weak, intermittent, becoming hard and wiry; temperature fails to reach normal, or there rapidly supervenes a condition of hyperpyrexia. If there be as a result of the contusion lesions of abdominal viscera other than the intestinal tract, the symptoms will be chiefly those of internal hemorrhage, and the various other symptoms referable to the particular organ injured. A detailed description of injuries to the liver, kidneys, spleen, pancreas, mesentery, or omentum and bladder would require too much time to discuss here. Thomas Bryant, in the London *Lancet*,

[1] Read before the Minnesota State Society, at the annual meeting in St. Paul, June 15, 16, and 17, 1898.

December 7, 1898, says: "The character of the force and the mode of its application always appear to be of much value as a help to diagnosis in most cases of intestinal injury, for it would seem that when the force is of a diffused rather than a localized character the injury is more likely to be extensive, or even double. Thus, when a human being is run over, the wheel of a vehicle passing over the abdomen or the back, with the abdomen downward; when he falls from a height, upon a plank or beam; is trodden on by a horse, or is crushed between two obtuse bodies, it is more probable that a solid viscus has been lacerated or that some portion of the small intestine has been torn in one or more places."

Statistics in 149 cases, in which various degrees of rupture of the intestinal tract had occurred, give clearly the history of 80 of these cases. Thirty-six cases were due to horse kicks, 23 to carriage wheels, 13 to kicks from men, and 8 from spent shell fragments or bullets.[1]

Course and Prognosis.—Without immediate surgical interference I believe that not one in one hundred cases of severe abdominal contusion ends in recovery. Sajous' "Annual" puts the mortality at ninety-six per cent. Without operation these patients when they recover from the primary shock, rapidly develop septic general peritonitis and die, or else, especially in injuries to the liver and spleen, they die of hemorrhage. Rupture of one kidney when the other is normal may result in recovery. Rupture of the bladder results fatally if early operation and drainage are not resorted to.

Treatment.—My experience with abdominal contusions and a careful study of all the literature at my disposal teach me to say unhesitatingly that the most conservative treatment is early operation, and I mean by "early operation" as soon after the receipt of the injury as possible; immediately, if the patient is not in collapse. The advances in modern surgery have made it possible to explore the abdomen with impunity, and with almost absolute safety. I believe it is better surgery to open the abdomen in doubtful cases and find no lesion, than to wait in a single instance until signs of septic peritonitis are present. An aseptic exploration will do no harm, while delay means death in ninety-six per cent. of all cases of rupture of the intestine.

The patient should be as carefully prepared as rapidity of action will allow, and a free incision made in the median line and the injured organ located as quickly as possible. Oftentimes this is a difficult procedure. In locating the seat of injury it is important to bear in mind the exact point at which the violence was applied. Immediately upon an injury of this character there is a paralysis of the bowels, and in most cases the rupture will be found immediately beneath the point where the vulnerating force came in contact with the abdominal wall. Of further importance, I believe, is the action of the omentum, especially in those cases in which considerable time has elapsed after the receipt of the injury. It seems to me that in many, if not all, cases of rupture or injury to the viscera, the omentum throws itself into the breach, and endeavors, by adhering to the wounded organ, to protect the general cavity from infection. A large portion of the omentum will be found adherent at the point of rupture. If this is a fact, you can readily see that it would add much to our ease in locating the injury. Prognosis is much more unfavorable if it becomes necessary in any case to expose the intestinal coils. However careful we may be to keep them protected by hot towels, this procedure adds much to the shock of the operation; so much, indeed, that death almost invariably occurs when evisceration is necessary. I doubt exceedingly whether such a procedure is ever necessary, or whether ever justifiable.

[1] Charassi, French Congress of Surgeons, 1885.

After the ruptured intestine is found, pull out only so much as is required for rapid closure of the rent; close it in the usual way, remove all septic material possible by carefully mopping out the cavity with soft gauze sponges.

When nature has had no opportunity to wall off the septic area it seems proper and becomes a great temptation to irrigate the cavity with warm saline solution. But if we stop for a moment to consider briefly the physiology of the peritoneum in its relations to absorption, I think it will be seen that irrigation under these circumstances is an unsurgical procedure. Byron Robinson's conclusions, based upon a thorough study of the subject and much personal experimentation, are as follows:

"1st. The primary path by which fluids pass from the peritoneum into the circulation is by way of the lymphatics. The secondary path is the blood-vessels.

"2d. A stream of fluid exists in the peritoneum directed toward the diaphragm.

"3d. The anatomical structure and physiologic function (respiration) of the diaphragm enable it to act like a suction and a force pump.

"4th. In five minutes after injection into the abdomen of a solution holding Berlin blue in suspension, the colored granules may be found in the subdiaphragmatic lymph bed and intrathoracic glands.

"5th. So far as my experiments extend, the diaphragm is the primary locality of peritoneal absorption of solid granules. Others assert that the rootlets of the portal veins also absorb fluid, but I have not been able to confirm the correctness of the assertion.

"6th. The vast function of absorption performed by the diaphragm and the very small part taken in this process by other portions of the peritoneum account for the non-fatality in the purulent conditions found at the tubal ends and about the appendix and the ruptured gall bladder, which is circumscribed and confined by the ligamentum hepatico-colicum. The virulent microbes or their products are not absorbed but circumscribed."

On account of vigorous absorptive powers, the nearer peritonitis approaches the diaphragm the more dangerous it is to life. Practical experience in irrigating in cases of septic peritonitis convinces me that it should be abandoned. Gently mopping out the cavity and thorough gauze drainage will give better results. If the liver has been ruptured our efforts of course will be directed to controlling hemorrhage, which is best done by packing. The same is true for ruptured spleen, when there is only a slight tear. Rapidly fatal hemorrhage supervenes when the rupture is extensive. Owing to the fact that both kidneys are rarely affected by the same force, injuries to these organs are not so fatal in their results. When laceration is not extensive and hemorrhage is not severe, recovery may take place without surgical interference. If, however, the shock has been great and there be present evidence of great laceration of one kidney, nephrotomy and drainage, or nephrectomy is indicated. Rupture of the bladder, intraperitoneally or extraperitoneally, requires immediate operation for repairs and drainage. I consider the suprapubic method the best procedure. In all operations for the repair of injuries of the abdominal viscera there is great shock, and it becomes our duty to minimize this element by every means in our power. We should operate rapidly, the room should be kept at a proper temperature, hot-water bottles or bags should be constantly applied, even in the warmest room. Infusion or hypodermoclysis with decinormal saline solution is almost always indicated, both during and after operation. Repeated infusions may occasionally carry a desperate case over a period of shock. The after-treatment of these cases is the same as for an ordinary laparotomy.

Report of Cases.—Case I.—Mr. A——, Swede, occupation, moulder; good habits. At the time of admission to Dr. C. A. Wheaton's service at the City and County Hospital, he was in general appearance very much emaciated. Face pinched and anxious, eyes sunken, skin dry, tongue dry and coated. Very weak; persistent diarrhœa; pain in abdomen very severe; great rigidity of abdominal wall. Temperature, 97.8° F.; pulse, 85; breathing labored. Abdomen retracted and very tender on palpation. Temperature remained between 97° and 97.5° F., pulse 80 and 85, during his stay in the hospital. Stools yellow and watery and very offensive in odor; no emesis. Admitted January 30, 1898. On January 20th, while feeding a buzz saw, a board thrown back from the saw struck him across the abdomen, necessitating his quitting work and removal to his home. He says he was very weak at the time, but did not suffer much pain until evening, when vomiting ceased. It commenced again on the following day and had been persistent since. Diagnosis, intestinal gangrene with localized peritonitis. Death occurred February 1st.

Case II.—Mr. B——, admitted to the service of Dr. C. A. Wheaton, October 25, 1898; aged thirty-seven years; male, white, English; occupation, veterinary surgeon; habits good. Three days previous to admission while operating on a horse, he was kicked in the left hypochondriac region. No external injury. Watch case slightly indented. Hiccough commenced immediately after the injury, and was incessant except during a few snatches of sleep. No gas passed per rectum. Stercoraceous vomiting commenced the following day. On admission hiccoughing, complete obstruction of the bowels; intermittent stercoraceous vomiting; abdomen markedly distended, rigid, and tender; tympanitic from level of the umbilicus on either side downward. Temperature, 98° F.; pulse, 120. At 7 P.M. he was taken to the operating-room and abdominal section was made by Dr. C. A. Wheaton. Cavity filled with a pea-soup material, fæcal in odor. Intestines injected. Small intestine picked up and inspected and a couple of perforations found. Some deposits of lymph about them. These were closed with three rows of Lembert sutures. Cavity flushed out with saline solution. Patient moribund when taken from operating-room. Abdomen closed with interrupted wire sutures. Death occurred about two minutes after removal from operating-room.

Case III.—Mr. C——, laborer, aged twenty-five years; white, American; habits good. Admitted to hospital March 26, 1898. At the time of admission he was a well-developed, rugged man. Mental condition good. Beween four and five o'clock on the afternoon of admission he was kicked in the left upper quadrant of the abdomen by a horse, which caused sufficient pain and shock to cause him to lie down, but did not render him unconscious. A physician was called and gave an opiate. The man was sent to the hospital. On admission at 11 P.M. he was in great pain; shock severe. Pain continued to be very severe; vomiting; no passage of gas or fæcal matter, abdomen rigid and tense; tympanites not marked; great pain to the left and below the umbilicus. At 2 P.M. I made an abdominal section and found a couple of lacerations in the jejunum near the duodenal junction. Ruptures repaired; cavity irrigated with decinormal saline solution, drained, and closed with interrupted sutures. Patient suffered severe shock following operation; transfusion of saline solution rallied him for a while, but only temporarily. Died at 1:15 A.M., March 28. Diagnosis, rupture of intestine, general peritonitis.

Case IV.—Dr. D——, white, aged thirty-five years; large, well-developed man. Was coasting down hill in front of a bobsled. When two-thirds of the way down, while going at a terrific rate of speed, he struck another bobsled, which was being drawn across the path. He was unconscious for a few minutes after the receipt of the injury. I saw the patient within fifteen minutes after injury. He was then suffering excruciating pain. Pallor extreme, skin leaky, severe shock. He was removed to the hospital. Pain continued; vomiting; pulse became intermittent and weak; distention of abdomen, complete obstipation, great tenderness and rigidity of abdomen. No external evidence of violence. Great restlessness and anxiety. Temperature subnormal; respiration shallow and labored. Died on the third day. Diagnosis, general septic peritonitis, probable rupture of the intestines. No operation; no post-mortem.

THE BLOOD IN SEPTIC DISEASES OF THE ABDOMEN AND PELVIS.[1]

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It is true that for the greater part a consideration of the subject which has been given me in this discussion must as yet be confined to a record of observations. Time, your patience, and my own inclinations prevent any elaboration of theories; and the pathological phenomena observed in the blood in many diseases, among them septicæmia in its various manifestations, can at present be studied only as a series of interesting facts, valuable, to be sure, to the clinician, but still not wholly satisfactory from a scientific point of view to the pathologist. I shall, however, attempt briefly to show a few of the practical advantages accruing to the practitioner from examinations of the blood in the diseases under discussion.

There are generally recognized three distinct degrees, if not kinds, of sepsis, in each one of which the blood presents certain modifications, not always, however, sufficiently marked to make differential diagnosis a matter of certainty.

The first and mildest form, by Bergmann termed "fermentative fever," by Volkmann "aseptic or resorption fever," and by Matthews Duncan "sapræmia," is by many thought to be in reality a very mild sepsis, in which for unknown reasons the pathogenic micro-organisms are least virulent, or in which conditions in the body are such as to overcome immediately all toxic effects and to resist development of absorption of further toxic material. Such so-called reaction as attends absorption of small blood clots, post-operative or following extravasation of blood from contusions, or perhaps the slight febrile reaction occasionally following parturition, subsiding within a few hours and with no untoward results, are all representative of this form of sepsis.

In these cases the blood is least often studied. The few observations which I have made show no departure from normal save in the mild leucocytosis subsiding almost entirely with the febrile reaction.

The second form or degree is that most often met with, the one in which the reaction in the blood is most marked and characteristic and in which the natural course tends to recovery, but which by long continuance of the septic leak into the circulation or the supervention of the third and most malignant form not rarely terminates fatally. This is a septic intoxication due to the entrance into the circulation of the toxic products of pyogenic organisms, but not to any extent of the organisms themselves. This is the common puerperal sepsis ending in recovery, or an appendicitis in which the inflammatory focus remains

[1] Part of the general discussion on "Septic Diseases of the Abdomen and Pelvis," before the Michigan State Medical Society at the annual meeting in Detroit, May 5 and 6, 1898.

localized, or the common form terminating in recovery following abdominal section, etc. Such a sepsis may be immediately fatal if a sufficient quantity of the toxin is introduced suddenly into the circulation; such a case is not marked to any extent by demonstrable changes in the blood during life, the system being overwhelmed before leucocytosis can occur or the hæmatogenic functions become operative. And aside from the diminution in fibrin threads and the imperfect formation of rouleaux as seen in the fresh specimen before drying, as well as the imperfect formation of the clot, I know of no demonstrable antemortem blood changes.

When, however, the amount of intoxication is insufficient to cause death immediately, the reaction as determined in the blood is most characteristic; and it is a description of such a blood condition that I shall endeavor to give below, as the most typical illustration of septic blood, from which the mild and transient leucocytosis of "fermentative fever" and the almost negative reaction of the more severe true septicæmias are merely in degree departures from the standard.

True septicæmia constitutes the third form or degree of sepsis, so to speak, and is distinguished from the other forms by the entrance into the circulation of sufficient numbers of pyogenic organisms themselves to overcome resistance, either in the form of phagocytosis or antitoxæmia. Such an invasion constitutes a progressive and malignant form of true septic infection, the blood being transformed into an unresisting culture medium, and death inevitably following, as in the case of anthrax, which is the type of true septicæmia. Here the most interesting feature in the study of blood is, of course, its bacteriology. If the infection is gradual or one in which the micro-organism is of the less pathogenic variety, a rise in the leucocyte count will follow and continue in varying degree until resistance is overcome or the source of infection is removed. It is possible that under certain conditions the count might rise as high as in any form of sepsis; but in my experience, which has been limited to observations in two cases of this character (both instances of rupture of a suppurating appendix into the general peritoneal cavity), the highest count was eighteen thousand to the cubic millimetre, death occurring within six hours thereafter and before another blood examination was possible.

In septic intoxication due to obscure pus foci, when drainage is for any cause imperfect, a more or less constant invasion of the circulation by toxic products results in a rapid and often extreme anæmia, both in destruction of red cells and in loss of hæmoglobin. As Roscher has shown, anæmia appears earlier and is more pronounced in sepsis than in any other of the infectious diseases.[1] The blood is thus less resistant and consequently more liable to sudden invasion by and development of the micro-organisms, resulting quickly in death, or by continued attenuation of the circulating fluid, due to the toxæmia alone. Death from exhaustion may occur without even a perceptible rise in the leucocyte count. Such a picture is most often seen at the close of pulmonary consumption, when a prolonged septic fever masks the tuberculous process and becomes the cause of death, and may be witnessed often in those obscure and chronic suppurating diseases of the pelvis and abdomen.

In acute septic intoxication of pelvic or abdominal origin, as following laparotomy; in the formation and retention of pus, as in appendicitis or perinephritic abscess in a patient previously healthy, with the first rise of temperature and pulse, an examination of the peripheral blood will reveal a condition not far removed from the following, which I offer as a type:

[1] Inaug. Dissert., Berlin, 1894.

Blood examination within the first six hours of initial septic intoxication:

General appearance. (1) Flows easily from finger or ear (whichever is employed in the observation). (2) Coagulum forms rather slowly, but the contraction (as observed in the small glass vessels used by Hayem for this purpose) is practically normal, both as to shape and relation to serum. (3) The serum presents no departure from normal.

Fresh specimens under the microscope. (1) Rouleaux normal in length and number of composing erythrocytes. (2) Spaces of normal size. (3) "Hæmatoblasts" appear in normal number and arrangement. (4) Fibrin threads from the first appear fewer and more deliberate in formation—what Hayem would designate "second degree." (5) Neither in shape nor in size do erythrocytes show departure from normal. (6) Leucocytes appear in excess and phagocytic motility is more apparent than normal.

Dry unstained specimen. Shows no departure from normal, except in excessive number of leucocytes.

Stained specimen. (1) Shows no departure from normal in erythrocytes. (2) Leucocytes show the following relative proportion between the varieties: Small lymphocytes, 11 per cent.; large lymphocytes, 5; polymorphonuclear neutrophiles, 78; eosinophiles, 3; large mononuclear or transitional forms, 3. Aside from a slight relative increase in polymorphonuclear neutrophiles this would be a normal relation.

Quantitatively. Erythrocytes, 4,500,000 to one cubic millimetre; leucocytes, 15,000 to one cubic millimetre; hæmoglobin, 70 per cent.; color index, 0.77.

The only practical departure from normal in this specimen is seen to be a very moderate leucocytosis (the low hæmoglobin percentage is probably of more or less long standing and has little or no connection with the sepsis). The increased number of leucocytes, however, is not more than is often remarked in a digestion leucocytosis, except that such error has been eliminated by choice of time of examination. The case might appear, so far as the blood is concerned, a very mild intoxication; possibly even a fermentative fever.

In the case from which this illustration is drawn, one of pelvic abscess, operation was deferred twenty-four hours, when another examination of the blood was made, temperature and pulse remaining practically unchanged, and other conditions as nearly identical with the first examination as possible. At this second examination the following points of difference in the blood are manifest: (1) The serum is perceptibly more watery; (2) "hæmatoblasts" are less numerous; (3) fibrin threads are fewer; (4) leucocytes are much more numerous, as estimated in the fresh unstained specimen; (5) the stained preparation shows like apparent increase in leucocytes, while the proportion between the different varieties shows no important change from that at the first examination; (6) quantitatively erythrocytes have fallen to 4,000,000 in one cubic millimetre; leucocytes have risen to 32,000 in one cubic millimetre. Hæmoglobin remains at 70 per cent.; the color index is raised to 0.87.

Operation at this time was partially successful in securing drainage. Leucocyte counts immediately following operation and at intervals of several days thereafter at first showed marked diminution, falling as low as 10,000; but following with more or less regularity the waves of temperature and pulse, they rose again to 35,000, when second operation secured free drainage, and within two days the leucocytes were within normal range.

Meanwhile, in scarcely a month that the case was under observation, attenuation of the blood as a whole had progressed with remarkable steadiness and ra-

pidity, red cells falling to two and one-half millions to the cubic millimetre and hæmoglobin to forty per cent.

This I think may be fairly taken as a type of the phenomena observed in the blood in an ordinary case of sepsis, resulting in recovery after some delay.

During the course of such a case, if the leucocyte count had suddenly and without due cause (as, for instance, the establishment of perfect drainage) fallen to normal or below, it would have been a bad prognostic sign, as Cabot and others have pointed out, indicating an overwhelming of the system by a sudden and severe general infection.

A sudden and radical rise in leucocyte count would, on the other hand, have indicated an extension of the suppurating process into previously uninvaded tissue without general absorption of infecting material, while a gradual diminution would have been an indication of the "walling-off" process noticed so often in an appendicitis in which no operation has been performed, and the patient temporarily recovers.

I have been unable to find any evidence which points to the existence of characteristic blood conditions in sepsis arising from pelvic or abdominal causes, as distinct from sepsis from foci in other parts of the body, and I think none can be admitted. A felon may produce a leucocytosis alike in kind and degree with that of a septic peritonitis, since the cause of both is the same, while the diseased area involved seems to make little, if any, difference.

Blood examinations, however, are of inestimable value as diagnostic aids in distinguishing between sepsis arising from pelvic and abdominal sources and certain diseases which in other clinical appearances simulate it closely.

Leucocytosis, which is always present in sepsis (except in those severe infections which result fatally within a few hours), is absent in intestinal obstruction (when not cancerous), cystitis, endometritis, tuberculosis (when uncomplicated), typhoid fever, and malaria. Malignant disease is hardly to be confounded with sepsis; but if the question arises, certain morbid changes in the red cells, principally of necrobiotic character, are almost always found in the former, while such changes are rarely, if ever, noted in sepsis, however protracted the case.

The question may arise between a catarrhal and a suppurative appendicitis, in which a blood count, in the opinion of some competent observers, is of diagnostic value.

In a true inflammatory condition about the appendix leucocytosis is almost always present, while in a catarrhal appendicitis leucocytosis may be very slight or absent altogether. I have had little experience in blood examinations for the determination of diagnosis between these two conditions.

A study of the blood will also aid greatly in the prognosis of septic disease. As an indication for operative interference surgeons are more and more availing themselves of its aid; and with the establishment of a clearer comprehension of the causes of leucocytosis and the origin and destiny of the various elements, both normal and pathological, in the blood, a new light will, no doubt, be thrown upon the diseases under discussion, as upon many others which lie much farther within the realm of speculation.

I desire, in conclusion, to acknowledge the assistance which has been given me in the preparation of this paper by Dr. Charles E. Hooker, particularly in the clinical aid which he has rendered me in gathered data. I also take this occasion to thank Drs. Osler, Dock, Loomis, Cabot, and Herrick, for special information on this subject generously furnished me.

May 26, 1898.

THE SERVICEABILITY OF THE ALEXANDER OPERATION IN ASEPTIC ADHERENT RETROVERSIONS OF THE UTERUS, WHEN COMBINED WITH LIBERATION OF IT AND RESECTION AND SUSPENSION OR REMOVAL OF ADNEXA THROUGH THE DILATED INTERNAL INGUINAL RING.

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Retroversion or retroversio-flexion of the uterus is shown by Ruehl [1] and others to be present in twenty per cent. of all gynæcological cases. It constitutes the most frequent and prolific predisposing cause of inflammatory disorders of this kind. The manifest embarrassments to the venous circulation in the organs, arising from their persistent displacement, induce in them trophic changes analogous to those that bring about a varicose ulcer of the leg, so that they lose, to a large extent, the natural and considerable ability of healthy tissues to defend themselves against infection. To this potent pathological entity, furthermore, are added traumata from adjacent organs, to which the more delicate adnexa, that follow the fundus uteri at short range during its descent, are subjected in consequence of the destructive misapplication of intra-abdominal pressure. The palpable every-day evil consequences arising from these backward inclinations of the long uterine axis have been appreciated by the majority of intelligent physicians during the latter half of this century, and they are this day accepted by said majority as common facts, notwithstanding a doubting or protesting minority, some of whom are determined not to see. It is, therefore, not surprising to behold the operative zeal which has seized our ranks during the present decade to cure permanently these minor disorders—thereby freeing women from present minor ailments, but ultimately and chiefly in a prophylactic sense saving them from either constant torment or the loss of their characteristic organs at some future day. And if these laudable efforts had only been more fortunate in their choice of means to this most worthy end, their blessings to women would indeed be great, in emancipating many thousands of them from many more minor and major ailments; and incidentally not a few large and glittering statistics of easy abdominal sections would be checked that are cherished by some who are ready to open the abdomen freely for any and every reason or excuse. But with the kind of surgical measures which have been extensively adopted for these disorders, I fear that this commendable energy has been largely wasted upon an operative furor of doubtful proclivities.

In order to make a choice of normal surgical or mechanical measures for the temporary or permanent correction of the disorders here referred to, and to judge of the merits of methods now in vogue, and of the one to which I respectfully invite attention, we need to proceed from a consideration of certain fundamental general principles, that I think will or at least should find general acceptation as axioms. The principles that guide me are as follows:

1. The highest uterine and exclusively feminine functions of women—those which chiefly give them their power and grace among men, make them objects of true love, and not merely prolong our race, but make them figure prominently by their influence as mothers in all that is good and noble—are those that pertain to reproduction; and no so-called curative means or method whatsoever is permissible for disorders of an inferior grade, as most uterine displace-

ments are, if such means or method does not favor and possibly disturbs these functions.

2. Inasmuch as, in nearly all instances, retroversion or retroflexion of the uterus is only a minor disorder, causing symptoms usually not unbearable, never causing death, and only remotely inviting more serious lesions, no operation is permissible for it that either in itself or through its complications or sequelæ has any perceptible rate of mortality, or that materially disarranges the normal anatomy, or trespasses upon the physiology of the pelvic or abdominal organs.

3. In view of the moderate nature and degree of the disorders mentioned, no operation is advisable that has frequent sequelæ of physical or mental pain or of other subjective disorder, or whose good results are frequently or easily frustrated with or without the supervention of pregnancy or parturition.

Now, in order to be able to judge whether the procedure which I mean to advocate chiefly is superior or not to others that it will largely compete with, we need first to consider the other measures that are already in the field.

Extraperitoneal Vagino-Fixation of the Uterus.—This operation, aiming to create a fibro-fibrous junction at a point high enough up on the body of the uterus to hold it permanently without a supplementary vesico-fixation or shortening of round ligaments, transgresses the stated requirements so seriously that it has already become practically obsolete, except for cases in which pregnancy is impossible. And I doubt whether a procedure which makes the bladder override the fundus uteri so as to kink the Fallopian tubes backward (Mackenrodt[2]), and which may temporarily occlude the ureters by tension and torsion, as I experienced in a case, should be perpetrated on any one for so slight a cause.

The other similar operations in this field, that vie with each other and still practise their deceptive coquetry quite successfully with a large number of operators, are of the same genus, but belong to more innocent species.

They all have two principal characteristics in common: one of these is that their sum and substance consist in the production of unnatural adhesions, or the construction of bands or bridges, so-called artificial ligaments, which either alone or with associated clefts or loopholes have shown themselves proficient generally, when present from other causes, in entangling intestines and omentum; bands which have no capacity to elongate or to grow in proportion with the uterus in pregnancy, or to become involuted with it subsequently, and the removal of which, if they occurred elsewhere and from other causes in the abdomen or pelvis, would probably be deemed necessary by the same operators who now construct them.

The other chief characteristic of these operations is that their own interests as to the perpetuity of every good that they may or are intended to do are in every detail diametrically opposed to the interests of the uterus in gestation and labor (Noble[3]). Take, for instance, ventro-fixation or ventro-suspension. To avoid obstetric difficulties, it should be made at a point as high up on the abdominal wall as possible, as low down on the anterior surface of the uterus as is consistent with a safe result, and—to allow the deeper layers of the uterine wall to slide past the fixed part of its wall when the uterus expands in gestation (Sippel[4])—the sutures in the uterus should be taken as superficially as is allowable. Each of these features is exactly the reverse of what should be done if permanence of the suspension is the aim of the operator. In principle, I have always viewed these operations as surgical misdemeanors, and, as Edebohls says, repugnant to every surgical instinct.

But by their fruits we must know them, and as the issue in this country is with their most prominent representative, namely, ventro-fixation or ventro-suspension, we will give the past and present friends of this operation a hearing. W. A. N. Dorland[5] has collected 179 cases of pregnancy following this operation. "Of this series, in 120 cases, or 67.03 per cent., a normal gestation was noted; in 111 cases, or 62.01 per cent., labor was absolutely normal; and in 68 cases, or 37.98 per cent., there was an absolutely normal condition throughout both gestation and labor. This leaves a total of 111 cases, or 62.01 per cent., in which some abnormality was noted in gestation, in labor, or in both." Thus nearly two-thirds of these cases of pregnancy have abnormalities, at some time in their course, which are traceable to their previous ventral operation. And more than one-third (37.99 per cent.) of the entire number have such abnormalities in labor, which are the more serious ones. Of cases of pregnancy requiring severe operative delivery after this procedure, 11 occurred out of 54, or 20 per cent., in Milaender's[6] collection; 7 out of Nobles' collection of 43 American cases, or 16.25 per cent.; and 18 in Noble's foreign collection of 133 cases, or 13.5 per cent.

The anatomical disorders arising in gestation after this operation, as we see, in from fourteen to twenty per cent. of the cases, are that the expansion of the uterus takes place almost wholly at the expense of the posterior wall, or of those parts which are above and beyond the point of fixation anteriorly. Therefrom necessarily results a displacement of the cervix and external os backward to or beyond the promontory of the sacrum, so as to make it quite inaccessible; while the hypertrophied anterior wall, not being able to expand, is aggregated into a mass resembling a fibroid (Norris[7]), that obstructs the pelvic inlet. Added to these features is the prevailing transverse position of the child, that results because the uterus cannot expand normally in its long direction (Dorland).

Of subjective disturbances during gestation are mentioned, among others, excessive vomiting of pregnancy (J. C. Cameron[8]), interference with the bladder, and many traction pains of such severity as to induce forced recumbency or to require the induction of premature labor. After carefully excluding the disasters occurring in labor after vagino-fixation, I find, without any exhaustive search, the following as sequelæ of ventro-fixation recorded: By Gubaroff,[21] Veldi,[22] Mackenrodt, R. C. Norris, C. P. Noble, Michaelis,[23] Krim,[24] and Guerard,[25] each one case; two by Strassmann;[26] and four instances in three patients by Bidone.[59] Four Cæsarean sections ended in recovery. Two Porro operations were fatal, and the others each required the severest kind of operative aid. But the remaining sponsors of these operations are gradually renouncing the direct or immediate ventro-fixation of Leopold[10] and Czerny,[11] and they claim that by making an indirect or mediate fixation, as by attaching the round ligaments to the abdominal wall after the original method of Olshausen,[12] or fastening them in the abdominal wound (C. Beck[13]), or by constructing one or more suspensory straps to anchor the uterus with some range of motion against the abdominal wall, by means of the urachus, or by a strip of parietal peritoneum (F. H. Martin[14]), or by allowing an exclusively peritoneal parietal fixation to pull out and form one or more bands of uncertain length and duration, with dangerous interspaces between them (Howard Kelly[15])—that by virtue of such an intervening medium they avoid all the evil consequences spoken of. But what they gain in this direction they lose in another, by exposing their patients seriously to the danger of intestinal obstruction, etc. For a view of such a trap for omentum and intestines, I would refer to a good

illustration of a post-operative specimen removed post-mortem and exhibited by Howard Kelly.*

The harvest of ileus, occurring a year or more after ventro-suspension, is only beginning. But I have chanced to notice the following already: Ruehl,[16] Jacobs,[17] Olshausen,[18] and A. L. Smith [19] each publish a case; and Rufus B. Hall [20] says he has dealt with three cases and thinks the operation of ventro-suspension has had its day. Professor Fritsch [26] did a second abdominal section on a woman who could not walk on account of pain in the abdomen. He found the omentum so engaged between the uterus and the bladder, following a suspension after Olshausen's method, that he had to resect much of it to relieve her. Furthermore, we have the stern fact that Fehling's statistics show a mortality of five per cent. for ventro-fixation (Steinthal [27]); and that ventral hernia has occurred after abdominal section, for this purpose as well as for others, more frequently than that. Finally, every one of these procedures is followed by some uncertain rate of recurrence, which, for intraperitoneal vagino-fixation, is thirty per cent., according to Ruehl.

Now, considering all these facts, let us suppose that every patient with a retroversion, etc., was an intelligent physician and was thoroughly familiar with all these serious ultimate conditions liable to supervene; would the majority of them not vote that the cure is worse than the disease? And would any of them accept such an operation for a retroversion without marked disease of the adnexa, as long as any other method, surgical or otherwise, offered any good at all, without so much of evil? They would not! Then what do we practise when we take advantage of our patients' ignorance and intrude upon them surgical measures and risks which they would not choose if they were better informed?

It is not surprising, in view of such considerations, that a large number, more especially of the younger generation of gynæcologists, who care more for the good they do for women than for ease and convenience to themselves in operating, and who have ambition enough left to overcome some difficulties in technique—have paused, have thought, and then have begun to deal with the round ligaments of the uterus in correcting the backward deviations of its long axis. It is a wonder that not more of them have done so. For here are natural muscular structures, that are always present, that are nearly always sufficiently strong for our purpose, that as a part and parcel of the uterus will keep pace with it in the physiological hypertrophy and involution incident to pregnancy, and that we may make use of in any rational manner for the end in view—no matter what, if anything, was their function previously—without producing any detrimental change of anatomy and without disturbing the function of any organ.

The round ligaments may be approached by three routes: (1) By anterior median vaginal cœliotomy; (2) by median ventral cœliotomy; and (3) by way of the inguinal canals—the last route giving preeminently the best results in all cases in which it can rationally be made to serve.

But before we make our choice here, we must first consider what are all the objects that we need to accomplish. To liberate the uterus, when necessary, and to secure it in normal position, are only half of our duty in many instances of retroversion or retroflexion of it. The other half of our obligation is to extend the same service to its appendages, the ovaries in particular, as well. G. E. Shoemaker says: "In many cases these [the symptoms] are due to displacement of the ovary secondary to the retroversion." The welfare of the ovaries demands that they be supported out of harm's way, laterally against the walls of the true pelvis a little beneath its brim, where that tremendous force—intra-abdominal pressure—will be visited upon them more in a centrifugal (supporting) than in a downward (displacing) direction.*

An ovary that has been displaced so that it approximates the median line of the pelvic cavity, practically always lies upon a lower level also than it should normally occupy. In consequence of this inward and downward displacement, it becomes subject to two potent pathological factors: (1) Partial venous stasis and altered trophic conditions, due to torsion and traction upon veins in its supports; and (2) traumata between the variably filled rectum posteriorly and the uterus anteriorly, especially when the latter is retroverted.

Owing to their more unyielding attachment to the fundus uteri by means of the ovarian ligament, the ovaries have usually lost their normal sheltered location, more or less, when the fundus of the uterus passes from an upper and anterior to a posterior and downward situation. In many instances a thorough restoration of the uterus to normal position—especially when this is done by shortening the round ligaments—will likewise restore a physiological situation for the ovaries also, but in others it will not. It then becomes necessary to shorten the lateral suspensory (spermatic) ligament of the ovary, most frequently of the left side, by stitching a loop in it. This, however, requires an access to the lateral wall of the pelvis, such as can be obtained through a median ventral incision, or through the dilated internal inguinal ring, which is directly in front of the spermatic ligament, but not at all by way of the vagina. The vaginal route, therefore, is serviceable in case we intend to remove the ovaries; but when conservative work on them is contemplated, and their location should be primarily cared for, we can only increase their descensus (Sänger[32]) by drawing them downward and into the narrow median vaginal opening; but we can never benefit it.

Again, the shortening of round ligaments by way of the vagina is an intra-abdominal one, and, like the same thing when done in ventral cœliotomy, it can never equal the results of a thorough Alexander in stability. This fact is appreciated by Kellog,[28] Edebohls,[29] R. Abbe,[30] and F. W. Johnson,[31] to such a degree that they will shorten the round ligaments by the Alexander method even after they have opened the abdomen by a ventral incision for some other purpose. The reason for this is that intra-abdominally the central, stronger portion of the round ligament is shortened by being looped upon itself, or by being stitched to the front side of the uterus (Dudley) or to its fellow of the opposite side; and all this work is made dependent upon sutures that are in danger of cutting out too soon on the one hand, and of cutting off the circulation of the ligament on the other; while, finally, the weakest point of this part of the ligament, *i.e.*, where it enters the abdominal wall, is just as weak as before. On the other hand, by the Alexander method, if precisely followed, the outer, tapering, weaker half of the ligament is eliminated, and the strong central portion alone is made to serve, without loops or dependence upon sutures or adhesions, and in a somewhat straighter course forward than it previously followed. Nevertheless, I frequently shorten the round ligaments intra-abdominally, when I do ventral cœliotomy for grave lesions that this operation alone can really cope with; as for probable or actual septic conditions, or for relief of the most extreme forms of fixation or in-

* Amer. Jour. Med. Sciences, 1896, December, p. 645, fig. 12. Also see "Operative Gynæcology," vol. ii., by Howard Kelly, p. 150, fig. 342.

* See "The Fate of Ovaries in Connection with Retroversion and Retroflexion of the Uterus," by A. Goldspohn, M.D., American Journal of Obstetrics, vol. xxxvi., No. 4. 1897.

carceration of pelvic organs from severe septic processes that may still continue or may have died out, and nearly always after removal of the appendages of one or both sides. At the same time, invariably, also, the lateral suspensory ligament of any ovary that remains is shortened if necessary.

Therefore all anatomical and mechanical conditions, as far as retention of the retroverted uterus and the associated descensus of its adnexa are concerned, point to shortening of the round ligaments by way of the inguinal canals as the normal procedure, whenever the conditions which are essential to its success are present or can be secured by preparatory treatment or by harmless adjunct surgical procedures.

So far, we have but made deductions from unshakable anatomical facts on which the Alexander operation stands. Now what does clinical experience testify for or against it?

1. Mortality practically *nil*. A number of operators have performed it more than a hundred times without any deaths at all chargeable to the operation itself, aside from the narcosis. F. W. Johnson collected 637 cases by nine different operators, with 2 deaths, years ago in the experimental stage of the operation. Kellog says he has performed it in 591 cases, without a death and with no grave symptoms. I have performed the operation over a hundred and twenty-five times certainly, without any death due to the operation. One patient, who should never have been anæsthetized, died on account of marked diabetes mellitus and a prolonged ether anæsthesia for a series of operations, owing to a most unfortunate mistake: *i.e.*, the resident assistant received the urine of another patient for examination and reported upon that. Among foreign surgeons there seems to be no death at all recorded as the result of the operation.

2. It favors conception, does not interfere with gestation or labor, and is rarely followed by a recurrence of the displacement. Stocker[33] observed 21 married women out of a total number of 37 operated upon by the Alexander method. Ten of the 21 married patients gave birth to 13 children at term without unusual complications; and only 2 of the 10 afterward had a recurrence of displacement. A. L. Smith, in 42 total cases (married and unmarried), had 3 primary failures and 3 normal pregnancies. Küstner,[34] in 71 total cases, records 5 pregnancies and no recurrences. Edebohls[35] reports 12 pregnancies in 110 cases after the Alexander operation. Two of these aborted, and one was lost from observation at the seventh month of gestation. Nine terminated safely in normal delivery. And F. W. Johnson has collected 45 cases in which pregnancy took place after the Alexander operation, with only one certain relapse of displacement. There is no recorded case of difficulty in labor due to this operation, and all that is noted during gestation is slight traction pain in the region of the round ligaments during the last months of pregnancy.

It is the unanimous and outspoken opinion of all operators who really have any extended experience with this operation that it is the most nearly ideal procedure for the purpose that we have, because we are dealing with normal anatomical structures in a physiological way; that it can do no harm and endangers nothing, not even hernia, when properly performed; any one can do it who really understands and can execute the Bassini hernia operation correctly.

The requirements for success with the Alexander operation are: 1. A complete and exact diagnosis as to the condition of the uterus and appendages, namely, the location, size, consistence, tenderness, and mobility of each organ, as far as possible, obtained by repeated careful bimanual palpation after thorough emptying of the bladder and intestinal canal, in order to determine not merely their anatomical bearings, but also the more important question whether septic elements, that probably gave rise to the infiltrations and fixations, still exist in the organs or have died out. To exceptional cases in which this point is in doubt, it is well to give the benefit of one or two weeks of recumbency with derivative treatment as a preliminary test. When any very acute tenderness then remains in any portion of the adnexa that is at the same time fixed by adhesions or walled over with the remnants of a former inflammatory exudate, it is more probable that the infective elements have not yet died out, but still remain in variable degrees of activity. In such cases the superior advantages for curing the retroversion, etc., by shortening the round ligaments *via* the inguinal canals, must be relinquished, because a more generous access—one that admits of both sight and a greater scope for palpation—is necessary in order to cope successfully with the conditions when the parts still harbor lingering infectious substances, and also for some few cases of severe adhesions alone with absolute immobility of the uterus. For such cases median ventral or anterior vaginal cœliotomy must be chosen with intra-abdominal shortening of the round ligaments by either route, with the option of making a vagino-fixation of the round ligaments in case of the latter. But this narrow and necessarily limited median vaginal entrance should not be chosen in cases in which, not extirpation, but conservative work upon the appendages is contemplated, such as freeing them from adhesions, resecting an ovary, or restoring the permeability of a tube; because then, quite generally, suspension also of the parts so treated, by shortening the lateral suspensory (spermatic) ligament of the ovary and the ampulla of the tube, becomes a duty almost equal to the correction of the uterine displacement by shortening the round ligaments. And this work upon the lateral wall of the pelvis cannot be done by way of any vaginal approach, which, when dealing with ovaries, induces their descensus (Sänger) but can never correct it.

The second and chief requirement that is an absolutely necessary condition for the success of the Alexander operation is mobility of the uterus and its appendages by securing freedom from adhesions or from marked inflammatory infiltrations of their ligamentous supports or their peritoneal investments.

The uterus must be brought into thorough anteversion and must no longer be displaced from that position by any fixation or force other than gravity. But the very large category of backward deviations of the fundus uteri that present such complications after active sepsis has disappeared are redeemable to perfect eligibility for treatment by this, the most innocent, most natural, and most efficient method of cure for this disorder, by one or more of the following preliminary or preparatory methods of treatment:

1. Bimanual (vagino-abdominal) massage. This is of chief service in reducing cicatricial contraction or inflammatory infiltrations in the ligamentous structures and peritoneal investment of the organs.

2. Redressement forcé in narcosis (method of B. S. Schultze). By this method we can succeed fairly well in liberating the uterus (not so well the appendages) from surfaces that are themselves relatively fixed or stationary, like the posterior wall of Douglas' cul-de-sac; but, like massage, it often fails to sever the adhesions of either uterus or ovaries to movable objects like intestines or omentum, so that these methods require to be supplemented by intraperitoneal digital palpation very generally.

3. Liberating the organs, immediately preceding the Alexander operation, with one or two fingers introduced into Douglas' cul-de-sac by way of the vagina through a sufficient incision posterior to the uterus. So much can readily be done by this approach, but

the more complete ideal work of resecting cystic ovaries, opening occluded tubes, and finally securing these delicate organs in their normal position, cannot be attempted by it.

These considerations, worked out in the course of a generous experience with the Alexander operation and its good clinical results, have led me to introduce

4. The most serviceable of all preparatory or adjunct methods to it, viz., introducing a finger, or two if needed, through the dilated internal inguinal ring of one or both sides successively, when the round ligament has been drawn out. Except in very corpulent women, the entire posterior surface of the uterus and the tube and ovary of the corresponding side can be traced and separated out of adhesions very intelligently, usually by means of an index finger introduced through this opening, simply dilated and not incised. But to liberate the organ successfully with the finger thus introduced it is sometimes necessary to steady the uterus by two fingers of the other hand in the vagina and a volsellum forceps caught upon the anterior lip of the cervix and held by the ring and little finger of that hand. In a few cases of marked adhesions in rather corpulent women, after dilating and curetting the uterus, I have inserted into it a thick blunt (size, English No. 14 to 16) sound of a uniform curve throughout, to correspond to about one-fourth of a circle of a diameter of forty-five centimetres—such a curve being necessary to elevate the fundus of the uterus and, at the same time, avoid making vicious traction upon the sacro-uterine folds or ligaments, elongation of which would detract materially from the good results of the Alexander operation. When the uterus is thus merely prevented from dodging the finger introduced into the abdomen through the inguinal wound, that finger can not only free the posterior surface of the uterus from all adhesions to fixed or movable objects, but it can trace the tube and ovary, free them, and bring both up against the abdominal wall beneath the dilated internal inguinal ring, in which some part of the tube is readily made to appear. It can then be caught by its outer coat with a forceps introduced either alone or alongside of the guiding finger, as the case may require, and can be drawn out, and the ovary follows closely after the ampulla of the tube. Again, if the ovary is the more accessible one of the two, I introduce one blade of a disjointed pedicle forceps with the loop in the handle foremost; then alongside of this I pass an index finger, which guides the ovary into the loop (like a tonsil into a tonsillotome), in which it is drawn out with the assistance of the finger, and then the tube follows. Being delivered out of the opening, which was merely stretched and not cut, they do not tend to slip back very markedly and are safely prevented from doing so by a forceps caught usually on the firm utero-ovarian ligament. In lean subjects the parts are kept from contact with the skin by an intervening layer of gauze, and in fat and corpulent patients the skin incision is made long enough to allow the skin and fat to be retracted, so as to provide a sufficient free area upon the aponeurosis of the external oblique muscle for the parts to rest upon while they are being treated. Then salpingostomy, resection of the ovary, or removal of both tube and ovary can be done very satisfactorily. In many of these cases the ovary can be drawn not merely out of the inguinal ring, but also to some distance in advance of it, thus showing that its ligaments are relaxed and will allow this tender organ to drop proportionally far in the opposite direction down into the small pelvis, so as to suffer the consequences of descensus even when the fundus uteri is in normal position. In these cases I shorten the lateral suspensory (spermatic) ligament of the ovary, by passing a round, curved needle and fine silk through the edge of this ligament at a point as low down in the wound as I can possibly reach by depressing the adjacent abdominal wall, and then passing it midway through the ligamentous connection between the ostium of the tube and the ovary (fimbria ovarica) and uniting these two points, thus making a loop in the spermatic ligament, so that the ovary, when returned, will lie out of harm's way upon the lateral wall of the true pelvis a little beneath its brim, where it belongs.

The serviceability of this inguinal-ring route was impressed upon me on September 18, 1893, when I was for the first time perplexed by not being able to find one of the round ligaments in a living subject. I made an entrance to the abdomen by deepening the inguinal wound, and traced the ligament from the uterus within outward. Incidentally the tube and ovary were discovered to be badly diseased and were taken out. A good cure anatomically and subjectively was obtained, and the patient's serious mental derangement, which had prevented a careful examination and exact diagnosis, disappeared entirely soon after the operation. Since then I have made a practice of introducing a finger and examining the adnexa very generally in connection with the operation upon the ligaments, which can really never be duly drawn out and shortened sufficiently without opening of the peritoneal cavity. But of the practical importance of opening occluded tubes, destroying cystic follicles in ovaries, or removing diseased parts from them, or of securing them in an approximately normal position, I was not convinced until within more recent years, when clinical experience, chiefly with patients after the Alexander and other intrapelvic operations, forced me to accept it as a general principle that in cases of displacement of the uterus any operation for this alone is a fulfilment of little more than half of our duty; that nearly an equal obligation remains for similar prophylactic treatment of the adnexa in a large percentage of cases.

From January 1, 1897, to July 15, 1898, I performed the Alexander operation upon 40 patients; 12 times with diagnostic palpation only, usually of each tube and ovary, through the slightly dilated internal inguinal ring, but without drawing them out into the wound. In 14 cases one ovary was resected. In 2 cases both ovaries were resected. In 8 cases one ovary was removed with the corresponding tube. In 4 cases the tube and ovary of one side were removed and the ovary of the opposite side was resected. In 15 out of the 40 cases, one ovary and the associated abdominal end of the tube were suspended, by shortening the inner edge of the spermatic ligament in the manner described, usually after resection of the ovary or salpingostomy performed upon the occluded end of the tube.

I have been engaged in extending the indications for the Alexander operation beyond the narrow limits of freely movable displacements, and in perfecting its results by means of these benign adjunct procedures upon the adnexa through the same incisions, for nearly five years, as stated: and the uniform good results of these combined procedures are now becoming sufficiently numerous and mature to establish my conviction in their favor; and it is not shaken in the least by all the arguments of opponents, which savor strongly of theoretical construction and assumption, but never of mature experience. And I am glad to notice that during the last several years also two other operators—gynæcologists of the first rank—have likewise independently espoused the dilated internal inguinal ring for similar adjunct work in shortening the round ligaments. G. M. Edebohls[26] says he has liberated the adherent retroverted uterus and appendages by one or two fingers introduced through this opening. Prof. H. Fritsch,[27] during his first year's experience

with this operation, incidentally cured an inguinal hernia in two cases, in one of which he also extirpated a tuberculous tube through the same opening. He says: "If the results are lasting, this is undoubtedly the best, least dangerous, and most correct method of operative cure of retroversion."

Contraindications. — 1. Although the Alexander operation, so extended and improved, is competent to deal with the great majority of movable and adherent retrodeviations of the fundus uteri variously complicated with degenerate conditions, disease, and fixations in the adnexa, which have resulted from previously active septic conditions or from persistent arterial or venous hyperæmia, still it is not intended nor is it competent to cope with either every movable or every fixed retroversion or descensus of the uterus. Its jurisdiction is to shorten the round ligaments of the uterus alone, by the most innocent, rational, and effective method, and to impart to them an important function that either they have lost or may never have possessed —it matters not which is the case. But it does not restore new or lost functions to the other principal ligamentary supports of the uterus. Therefore it cannot cure in those instances of uterine displacement in which not the round ligaments only, but either the sacro-uterine or the broad ligaments or both are also extremely elongated. Practically this means that it must not be chosen (*a*) for actual descensus (prolapse) of the uterus of more than the first degree, or (*b*) for cases of marked elongation of the sacro-uterine folds without descensus proper, as when the fundus lies retroverted and the cervix lies against the anterior vaginal wall down near the urethra.

The function of the round ligaments, in erect posture of the body, is to make occasional forward traction upon the body of the uterus in an approximately horizontal direction. A salutary sustaining impact of intra-abdominal pressure upon the posterior surface of the uterus is thereby invited, which, as the predominating force, then supports the organ in anteversion. This play of forces is, however, secured only when the uterus as a whole has not descended too far in the pelvic canal and when its lower pole, the cervix, is normally retracted toward the sacral cavity. In the absence of these essential conditions, the shortening of the round ligaments would merely be a suspension of the uterus against the pubic arch by means of the round ligaments (then drawing upward), which would be grossly irrational and ineffective. Shortening the sacro-uterine ligaments or folds, if possible, would be far more rational and auspicious in such cases.

2. When the body of the uterus is extremely large and heavy, either from inflammatory processes or from fibroids, and is at the same time markedly and stiffly retroflexed, the round ligaments should not be appealed to to secure it in adequate anteversion, because the centre of gravity in such cases falls from a point too far posterior to a line joining the points of origin of the round ligaments upon the uterus. Fortunately the cases of this kind and likewise those of the preceding category that are ineligible even for the improved Alexander operation, on account of too great descensus uteri, occur mostly in women who are beyond the period of possible or probable childbearing, and may therefore be safely and efficiently treated by means of a direct or a mediate ventro-fixation supplemented by thorough restoration of the pelvic floor.

Technique.—This is a delicate subject in the performance of any simple Alexander operation. It has been the chief barrier to the adoption of this procedure, in its simplest form, by numerous operators. An anatomically correct and carefully executed technique is of vital importance, particularly when so much intraperitoneal work is done through the same openings, if not merely primary, but also permanent, good anatomical and subjective results are to be quite uniformly obtained without the supervention of hernia or other evil sequelæ. That this is possible when the following fundamental principles are adhered to in this procedure my results have demonstrated, which are corroborated by the allied anatomical researches of O. Büttner,[58] of Geneva:

1. In making the wound, all cutting must be limited to skin, fat, a few circular fibres at the outer angle of the external inguinal ring, and the initial opening into the peritoneum, and all the aponeurotic and muscular—really supporting—structures be cleft solely by blunt instruments, so that they will fall together again when the retractors are removed.

2. The portion of each round ligament which lies within the broad ligament must be thoroughly drawn out—never less than ten centimetres—by always opening the peritoneum and cutting or stripping it down in such a manner as to leave the strip of peritoneum, by means of which this structure is usually united with one side of the round ligament, in contact with the latter to reinforce it and make it equal to its task, even when not well developed.

3. Closure of the wound must be effected by careful individual coaptation of the structures in each of at least four layers with absorbable sutures of sufficient resistance; and in this the principle of the Bassini hernia operation must be thoroughly adopted.

4. Each shortened round ligament must be anchored against the posterior surface of Poupart's ligament, an unyielding object, and any serious embarrassment of its circulation must be guarded against by grasping it, never alone, but always together with a roll of muscle, in all the sutures, which must be so placed as likewise to effect a reconstruction or reinforcement of the posterior wall of the inguinal canal. Thorough work, as well as good and permanent results, demand that the inguinal canal be, as a rule, entirely laid open. It is harmless to do this if all cutting be avoided in bearing structures, and if they be properly reunited. And in view of the important objects achieved by this improved Alexander operation, the objections to any scars are silly prudery, such as may be indulged in possibly by those who make merchandise of their bodies.

An incision, five to seven centimetres in length, is made from the pubic spine upward and outward parallel with Poupart's ligament, and one to one and one-half centimetres above it, down to the aponeurosis of the external oblique muscle. After this structure and the margins of the external abdominal ring in it are clearly exposed, the projecting bunch of fat with terminal filaments of the round ligament and the ileo-inguinal nerve are caught in a forceps and drawn upon somewhat, while a few circular fibres at the outer angle of the ring are cut with scissors. The aponeurosis is then split with a blunt instrument far enough to expose the canal and is held apart with retractors. The inguinal canal being now open and the ileo-inguinal nerve in sight, the round ligament can usually be traced from its terminal filaments, in the grasp of the forceps, upward and outward. In exceptional cases, when this does not succeed, a bunch of muscle near the internal abdominal ring is picked up with a blunt hook and drawn upon, while an assistant places a finger against the cervix in the vagina and observes whether a corresponding motion is imparted to the uterus. If not, another grasp of muscle is taken, until the round ligament is included. It is then isolated from the muscle with as little contusion as possible. The web of peritoneum presenting on the outer side of the ligament, when drawn out, is preferably incised with scissors, so that it will present distinct margins for subsequent manipulation. From this opening the cone-like investment of peritoneum is detached from

the ligament on all except its inner or anterior sides, where a firmly united strip of peritoneum is left to reinforce the ligament, which, in the mean time, has been amply drawn out. The opening, if not already large enough, is dilated by spreading the jaws of a pedicle forceps within it, until it admits an index finger, with which the parts within should always be examined. And with this finger they can be thoroughly freed from adhesions, and the tube or ovary can be brought into view beneath the opening, can readily be drawn out, and can be subjected to ideal conservative surgical treatment, as before described, or removed, as indicated.

As the first tier of sutures, the opening in the peritoneum and transversalis fascia is closed by a continuous fine catgut suture, which unites it to the round ligament drawn out *ad maximum*, so that when it naturally recedes somewhat it will tent the peritoneum inward and deflect intra-abdominal pressure. The second tier of sutures is made preferably with a double thread of a medium-sized catgut, and is begun in the lateral angle of the wound at the outside of the formerly dilated internal ring. By this the muscular aperture, which has already collapsed, is now firmly closed by several continuous stitches, the last one being looped under itself without tying. The needle next gathers up a roll of muscle, from one-half to one centimetre in thickness, from that part of the internal oblique and transversalis muscle lying above the opening just closed; it then passes through about the centre of the round ligament, is again well drawn out, and finally takes a sufficient grasp upon the posterior surface of Poupart's ligament at about its middle. When this suture is drawn upon it not only closes the internal ring, but also brings an additional layer of muscle down over it, and closes the outer end of the inguinal canal by bringing this aggregation of muscle down against Poupart's ligament, with the round ligament cushioned between the two. Three or four more such stitches are taken continuously from without inward, in each of which a similar roll of elastic muscle is first gathered up before the needle passes through the round ligament and anchors it flatly against the posterior surface of Poupart's ligament for a distance of three or four centimetres. While each or every second one of these stitches is hitched under itself to prevent it from slipping, the last one is tied in a single-thread knot by passing one of the two threads under the double thread back of the last stitch. This second tier of sutures has accomplished three very important objects: (*a*) firm closure of the inguinal canal throughout; (*b*) secure attachment of the round ligament to an unyielding object; (*c*) guarantee of sufficient circulation in the round ligament, because it is everywhere grasped with a cushion of elastic and very vascular muscle tissue.

In order to make this suturing against the posterior surface of Poupart's ligament possible, its upper edge, which is the lower split edge of the wound in the aponeurosis of the external oblique muscle, has in the mean time been grasped in a pedicle forceps (not too tightly) and turned over outward and downward, thus turning its posterior surface upward. Now, at the finish of the second layer of sutures, these separated edges of this aponeurosis are both liberated respectively from the forceps below and the retractor above, and they fall together; and their union constitutes the third tier of sutures, which is made continuously with a single thread of medium-sized catgut, beginning with closure of the external abdominal ring, in which the round ligament is again grasped and then cut off, and proceeding outward to the end of the cleft in the fascia. At some point in its course, or at the finish, this thread is tied with one of the ends that was left projecting from the knot at the beginning of the previous (second) tier of sutures. In that manner all these three layers now closed become solidly united against each other, even in the lateral portion of the wound.

In closing the skin-and-fat incision, it is difficult to avoid the formation of a dead space below Poupart's ligament, because the proximity of the iliac vessels makes it too dangerous to seize enough of the tissues at the bottom of the wound there. I therefore place a bundle of silkworm gut threads (eight or twelve), seven to eight centimetres long, into the most pendent portion of the bottom of the wound, leaving only one end of it, that has a thread tied about it, to project from the lateral end of the skin wound, which drains out large amounts of serum frequently and secures a primary union more uniformly. The bundle is drawn out painlessly after forty-eight or seventy-two hours. The skin and subcutaneous tissues are united as the fourth layer, by either continuous or interrupted silkworm-gut sutures.

I would respectfully suggest that the operation performed in this manner and embracing the very important intraperitoneal adjuncts, by means of which its usefulness is both multiplied and extended over a new, wider, and more important realm, be called the extended and improved Alexander operation.

Naturally every patient who needs this operation also needs a curettage as the first step. And all parous women, with such a displacement of the uterus, usually require also a cervix operation or a restoration of the pelvic floor, or both, in addition to the operation above described, in order reasonably to fill the indications pertaining to these structures. And, as a final act, hemorrhoids frequently require to be removed. From one to four of these supplementary operations I have performed in every case, in conjunction with the main operation just named and in the same narcosis.

As a detailed inquiry and a medical examination in all the cases have not yet been completed, and because longer time for observation is needed for many of them, a detailed statistical statement of the results is better deferred to a later occasion. But from an examination of about one-half the cases, and from quite a general knowledge of the state of health of most of the rest, I can assure my colleagues that recurrences of displacement, with and without pregnancy, have not occurred in more than two per cent.; that disorders of gestation and complications in labor have not arisen from the operation; that while two complete and three incomplete inguinal herniæ and two small femoral herniæ have been incidentally cured (the latter being approached by drawing the skin and subcutaneous tissues on the lower side of the wound down far enough), no hernia has followed the operation; that the annoyances to patient and doctor from persistent or recurring symptoms of disease in the adnexa have been less frequent than in other cases in which similar conservative work was done by cœliotomy; and that the degree of general satisfaction derived from cases treated in this manner constrains me to invite for this operation an extended trial and observation.

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NOTES ON THE THERAPEUTIC USES OF THE SUPRARENAL GLAND.[1]

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In 1894, after a series of experiments on the ductless glands, I began to use the aqueous extract of the suprarenal in diseases of the eye. Since that time I have used it continually, with ever-increasing gratification; and after four years I feel that I have thoroughly defined its advantages and limitations in diseases of the eye, ear, nose, and throat. With diseases of these organs my personal observation ends; but I reasoned that an agent so powerful (the patients call it "wonderful") in inflammations of mucous membranes of these special organs would have a similar action in inflammations of other mucous membranes. Also from a study of its physiological action and a few cases in which evident symptoms of heart disease were relieved by its instillation into the eye, I was convinced that it was an ideal heart tonic. As I am unable to follow it up in general diseases, I wish some other member of the society would study it clinically and present this valuable agent to the medical world. This is why I read before the society these incomplete arguments and scattered observations.

In the *New York Medical Journal*, March 16, 1896, I published the preparation in detail. It is essential to remember that the active principle of the gland is incompatible with preservatives and that it is weakened by heat; consequently it must be freshly prepared when needed. This can be done without much trouble. I mix ten grains of the dried gland with two drachms of water, and filter. The filtrate is a one-per-cent. solution of the extract.

The aqueous extract of the suprarenal gland is the most powerful astringent known. When a drop of a one-per-cent. solution is instilled into the eye, the conjunctiva of the globe and lids is whitened in from forty seconds to two minutes. This original observation was published in the *New York Medical Journal*, May 16, 1896, and was soon confirmed by L. Dor,[1] Lucien Howe,[2] and by many others. The extract has been used (more than five thousand times) in all forms of inflammation of the eye, whether traumatic, infectious, or from constitutional diseases—as rheumatism, syphilis, or tuberculosis; it always produced a whitening of the eye. The pupil is not contracted or dilated by it. A tolerance is not established by its use. It has no antiseptic or anæsthetic properties. The relief of pain and the quick cures often made are due entirely to its wonderful astringent property.

The extract will whiten the granulations which are found in cases of suppurative otitis. In dry catarrh the extract is often valuable to relieve congestion. I could report twenty-five cases of deafness in which the hearing was decidedly improved by it after the usual measures had failed. Cases of tinnitus have been permanently relieved by the suprarenal. In ankylosis of the stapes the extract was not beneficial, which fact and others suggest that the indication for its use is in inflammation or congestion. It is valuable in differential diagnosis and is a great help in prognosis, as well as in therapeutics. For example: If the suprarenal improves the hearing we have a case which is inflammatory, the prognosis is favorable, and the treatment should be to relieve congestion.

The extract will lessen the congestion of the turbinated bodies immediately and open the nose, after cocaine and other astringents fail.

I have used the extract in two hundred eye operations, and noted that it lessens the congestion of an inflamed eye sufficiently to permit cocaine anæsthesia. As cocaine and the extract are incompatible, they should be used alternately. I have reported cases of inflammatory glaucoma, strabismus, dacryocystitis, and other affections in which the operation was made painless only after the extract was used with the cocaine. This valuable property of the gland has been confirmed by L. Dor, Darier, and others.

Dr. Joseph A. Mullen[3] has reported seven nasal operations in which the extract prevented hemorrhage. He applied it by cataphoresis.

In dentistry its use is indicated. I know of one case, in which cocaine produced no anæsthesia of a hypersensitive nerve until the extract and cocaine were used alternately.

Strictures.—When the nasal duct is closed by swelling of the lining mucous membrane, the extract syringed into the punctum lessens the congestion and swelling by its astringent action and the duct becomes open immediately, so that water may be made to pass through it freely. The extract succeeds when cocaine fails. Cases of stricture caused by bone or connective tissue are naturally not affected by an astringent, and require operation. Many cases of stricture of the nasal duct have been cured by treatment with the extract, which, without it, would have required an operation for relief.

This successful employment for stricture of the nasal duct suggests its use in strictures of the urethra, œsophagus, pylorus, etc. Dr. J. M. Otto used it in a case of urethral stricture; it relieved the congestion of the parts sufficiently to permit the introduction of a larger sound than could have been introduced without it. An internal urethrotomy was painless and without hemorrhage.

[1] Read before the New York County Medical Association, May 16, 1898.

[1] Province Médicale, July, 1896.
[2] Moody's Magazine of Medicine, August, 1896.
[3] International Clinics, vol. iv., seventh series.

In Skin Diseases.—Velich[1] found that the extract produces local anæmia when applied to the skin, not only when there is a lesion of continuity, but also when the cuticle is unbroken. He whitened the inflamed skin of a burn, and believed that he prevented vesiculation. The extract has been used to whiten an eczematous patch. It is also recommended in smallpox, to prevent vesiculation, with the object of avoiding disfigurement of the face. In cases of intertrigo Velich has brought about the disappearance of the hyperæmia by the use of compresses imbued with the extract. In sarcoma in rats he produced anæmia of the diseased tissue.

Pernicious Anæmia.—Dr. Douglas Stanley[2] found that in one case the freshly prepared aqueous extract produced a marked increase in the number of red blood corpuscles.

Addison's Disease.—Osler, in his "Practice of Medicine," asserts his belief that the suprarenal extract is valuable in this disease. The literature on this subject is very extensive.

Heart.—The physiological properties of the extract suggest its usefulness in organic diseases of the heart of a varied character. The extract has been demonstrated by Oliver and Schäfer[3] to be a tonic of the heart muscle. The tension can be increased enormously by intravenous injection, less markedly by its subcutaneous use, and its action is very uncertain when administered by the mouth. The suprarenal is much more powerful than digitalis or ergot. The following cases are suggestive:

Case I.—A woman, aged eighty-seven, was treated by Dr. James Watkins for a complication of diseases. He found the pulse weak, irregular, and intermitting every second beat. June 1, 1895, the extract was used in the eyes to relieve an inflammation. The solution was instilled every two hours during the day. The patient called attention to the fact that her pulse was better, and it was noted that it was strong, regular, and did not intermit. The doctor was convinced that the extract benefited the heart. The extract was used for more than six months, with marked benefit.

Case II.—A married woman, aged nineteen, was seen, January 27, 1897, by Dr. C. J. Mooney. He stated that there was a mitral regurgitant murmur; also a murmur from aortic stenosis. The pulse was 94, high in tension, weak, wiry, and regular. The lips and face of the patient were pale. After a hypodermic injection of five minims of a one-per-cent. solution, in ten minutes the pulse was 82, full, compressible, of medium tension, not wiry, and regular. The lips and face had a decided improvement in color. Dr. Mooney believed that the heart was strengthened by the injection. The skin at the point of the injection was whitened in a space about two inches in diameter. It was painful, tender, and two days later was swollen. The disagreeable local symptoms disappeared in a week.

Case III.—A man, aged fifty-five, was a patient of Dr. J. C. Peterson, who furnished the following notes: There was a mitral and aortic regurgitant murmur. Pulse, 68, wiry. The patient suffered severe pain from angina pectoris, for which he required morphine. The portal circulation was impeded, and there was dropsy of the feet. On February 3, 1897, the patient received a hypodermic injection of five minims of a one-per-cent. solution of the extract. After five minutes the pulse lost the wiry feeling and became more regular and a little slower—64. The peripheral circulation was improved. The most marked effect was made on the angina—the anxious feeling, oppression, and pain were relieved for five hours. Other injections were made, with benefit. The patient did not complain of the local pain of the injections.

Case IV.—A woman, aged twenty-one, was treated by Dr. Warren Schoonover. There was a mitral regurgitant murmur. The patient had also aortic stenosis. The pulse was described by the doctor to be bounding, explosive, dicrotic, and irregular. Digitalin, grain one-sixtieth, administered every four hours, had not relieved the patient. The patient was given ten grains of the powder, to be swallowed with a little water, the quantity to be repeated every four hours. The pulse became regular and the patient's subjective symptoms were relieved for two days. The powdered glands then failed to relieve.

Case V.—A woman, aged forty-three, was treated by Dr. Augustus Milleg for pleuro-pneumonia complicated with organic heart diseases, mitral obstruction. The pulse, 100, was soft and intermitted every fifth beat. The temperature in the beginning was 103.5° F. The crisis developed February 9th, eight days after the onset of the disease, the temperature falling to 97° F. She had the Hippocratic facies, cold extremities, a very weak pulse, and felt that she was dying. She was given a hypodermic of ten minims of a five-per-cent. solution of the extract. In a few minutes the pulse was 120, full, and strong. The extremities became warm and the patient felt exhilarated. She received four daily injections with great benefit. The doctor believed that without the suprarenal extract the patient would have died of heart failure. The injections caused local pain. The patient recovered from the pneumonia.

Exophthalmic Goitre.—Dr. George W. Crary used the extract of the suprarenal capsule in one case.[1] He observed a decided improvement in the action of the heart; also an improvement in the general muscular strength, which is what we should expect from its physiological properties. The goitre had almost entirely disappeared, the tremor was not very marked, and the patient had gained considerably in flesh. The patient took one tablet, representing eight grains of the gland, three times daily.

In my opinion the best way to administer the gland is to place a few drops of the aqueous extract on the tongue.

To recapitulate: As a pure astringent in all inflammations, as a hæmostatic, and as a tonic—I might almost say food—to all muscle fibres, especially the heart, no therapeutic agent has been employed which can compare with the extract of the suprarenal gland.

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[1] Wiener medizinische Blätter, November 11, 1897.
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Etiology of Leucorrhœa.—The causes of leucorrhœa may be divided into two classes—constitutional and local. Constitutional causes are anything that lowers the individual's general vitality, as any acute or chronic diseases, among them being fevers, rheumatism, gout, syphilis, anæmia, and chlorosis. Local causes are vaginitis, simple or specific; endometritis, cervical or corporal; salpingitis, when the products of the inflammation escape into the uterus and from thence out; polypi; fibroids; excessive coitus; ulcerations, simple, specific, and malignant; uterine displacements. When it is, strictly speaking, of inflammatory origin the discharge is constant, though at times it may be much more profuse than at others; but when it is due to a relaxed condition of the mucosa, it is very much increased and often is present only shortly before and a few days after the menstrual flow, or when the patient has been subjected to some unusual physical or mental strain.—Dr. Ralph Waldo, *Post-Graduate*, April.

[1] New York Medical Journal, April 16, 1898, p. 543.

MYOCLONUS MULTIPLEX MITIOR.

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Definition.—Myoclonus (μῦς, muscle; κλόνος, clonus) signifies a clonic contraction or contractions of a muscle. The term myoclonus multiplex signifies clonic contractions of different muscles of the body, rather than a clonic contraction of one special muscle. I have appended the word "mitior," signifying milder, as is done by writers in epilepsy to distinguish it from "gravior," meaning a more serious or pronounced character of a given affection.

Etiology.—Prolonged mental worry or emotion and excessive venery appeared to act as exciting causes in the few cases under observation. It must be admitted, however, that the real cause or its true pathology is obscure. In one case, that of a man, fear of contracting hydrophobia (after a dog bite) produced the disease. It is not so apt to occur from mental emotion of short duration, as in cases in which the fear or the worry is prolonged.

Symptoms.—Such a patient consults a physician for one symptom more than any other, and the title of this paper explains what that symptom is. He is conscious of twitchings in his muscles. He has seen his index finger or some other finger of his hand moving to and fro, due to alternate contraction and relaxation of the muscle attached to that finger. At another time he may have seen "throbbing" (clonic contraction) of some large muscle, like the biceps or deltoid, or some large muscle in the leg. The large muscles of the back are not infrequently affected. During contractions in the sterno-cleido-mastoid, the head may be drawn slightly to the affected side. The neck, on one side, sometimes feels stiff, owing to contractions of the platysma myoides. The duration and frequency of the contractions are varied, sometimes lasting only a few seconds, while again I have seen them last twenty minutes or more. They may be entirely absent for days, only to recur, now in one muscle, then in another. There is no bilateral symmetry. Only in a few instances have I caused the muscles to contract by tapping them. As a rule, they did not do this. The contractions are not painful.

Diagnosis.—It could be confounded with the convulsive tremor of Friedreich. Here the contractions are "shock-like" in character, they are more symmetrical, and the extremities remain uninvolved. What relation the condition in question bears to paramyoclonus multiplex, I cannot say. It has some resemblance to it, only being of a milder character. The contractions are not so varied in their distribution in paramyoclonus multiplex, in which the extremities are chiefly affected; while in the disease in question the muscles of the neck, back, or abdomen are as frequently affected as those of the extremities. It could not be confounded with progressive muscular atrophy, because the muscles do not atrophy at any time in the disease. The symptoms of hysteria are absent, nor is it improved by suggestion or hypnotism. There is no ataxia, paralysis, or, in fact, any other well-marked symptom referable to the central nervous system. The mind is clear, and the affection must not be confounded with general paresis. It is not "neurasthenia," in which condition twitchings of the muscles may at times occur. The strange feature is that such individuals are, aside from these clonic contractions in the muscles, otherwise mentally and physically sound. Twitchings of the eyelids are not infrequent.

Prognosis is good, although the contractions may extend over a period of months. The electric irritability of the muscles is normal.

Treatment.—Strychnine in small doses, electricity, and salt-water baths may be of service. Massage is to be recommended, since patients themselves have noted that by only slightly rubbing the contracted muscle it at times has become passive.

Progress of Medical Science.

Migraine and Epilepsy.—Rachford (*American Journal of the Medical Sciences*, April) is convinced that the relationship of migraine and epilepsy is one of the facts of medicine and not one of its theories. He believes that he has proven that paraxanthin is a most important factor in true migraine, and that it is also an important factor in the production of one form of toxic epilepsy. He says that migraine, therefore, bears a close etiological relationship only to toxic epilepsy, and possibly only to the form of epilepsy which he has described as paraxanthin epilepsy.

Sulphate of Potassium and Hepatic Cirrhosis.—Lancereaux, having been struck by the absence of drunkenness in the subjects of cirrhosis, has investigated the influence of various alcoholic liquors in the production of cirrhosis. In two hundred and ten cases of cirrhosis examined by him in thirty-five years, sixty-eight of the subjects had drunk wine alone to excess; one hundred and twenty-six, wine in combination with brandy, rum, or absinthe; twelve, wine and beer; and four wine and cider in large quantities. These figures clearly show that, in Paris at any rate, wine, and not alcoholic drinks generally, must be considered the antecedent of cirrhosis. Conversely, in Brittany and Normandy, where little wine but much brandy is drunk, cirrhosis is rare. In Hayti, where a great deal of rum and arrack is consumed, hepatic cirrhosis is unknown. Lancereaux finds that the poisonous body in wine is sulphate of potassium; in Paris plastered wines contain four to six grams of this salt per litre, and three litres per diem was the average quantity taken in the cases he investigated. That sulphate of potassium alone gives rise to cirrhosis he proved by feeding rabbits, guinea-pigs, and dogs with it. After surviving for from six to eighteen months they died, and presented typical venous cirrhosis. The general consensus of opinion expressed by those who have given alcohol experimentally to animals is that it sets up fatty degeneration in liver cells, but does not produce cirrhosis. It appears that there is some body other than alcohol in alcoholic drinks which gives rise to cirrhosis, and this Lancereaux believes, is the salts of potassium, especially the sulphates. Unfortunately, an accurate chemical analysis of the stimulating drinks of various countries and of their adulterations is wanting. But it is not improbable that in Germany and England, where beer gives rise to cirrhosis, this beverage contains sulphate of potassium. If it were not for its familiarity, the term "alcoholic cirrhosis" should be replaced by "drinkers' cirrhosis," inasmuch as there is no reason to incriminate alcohol as a cause. To prevent the occurrence of cirrhosis, the "plastering" of wine ought to be forbidden by law.—*British Medical Journal.*

Treatment of Peritonitis.—As regards the medicinal treatment of peritonitis, one of the most important and at the same time the most difficult objects is to prevent the administration of opium or morphine in any form. I believe this drug to be the frequent cause of death. In all cases of peritonitis, whether local or general, one of the worst features is the passive distention of the intestines with gas which they are unable to contract upon and expel; and I believe that the vomiting, shock, and other fatal symptoms are as much due to this distention as to septic absorption.

The greater the distention the more powerless is the intestine to contract. Thus, then, the utmost trouble should be taken to prevent the distention getting to unmanageable proportions. Such distention is directly encouraged by morphine, for the first effect of this drug is to produce a temporary paralysis of the circular fibres, thus inhibiting peristaltic action. This gives relief from the pain, and the patient sleeps. What is the result? When the patient awakens a few hours later the condition has become infinitely worse. Nature all this time has made no effort to relieve the distention, and gas has accumulated beyond the power of expulsion. It is doubtless the temporary ease thus gained by smothering the pain that has made the administration of morphine so common a practice in the treatment of peritonitis. As a matter of fact, the sleep which the friends think so beneficial is the death warrant. Spasms of pain show that efforts are still being made by the bowels to resist distention and expel the fast-accumulating gas. The cessation of these efforts means that nature has thrown up the contest—a condition of affairs that morphine quickly brings about. I have heard it remarked that "it quiets the nervous system." It certainly does so, only too effectively.—Dr. Harrison Cripps, "Ovariotomy and Abdominal Surgery," p. 214.

The Rôle of Insects in the Transmission of Contagious Diseases.—T. R. Joly relates instances of malignant pustule, Egyptian ophthalmia, and Delhi boil conveyed by flies. He has also found as the result of careful observations that the legs of flies may be covered with staphylococci and many other forms of bacteria. Tubercle is particularly liable to be disseminated by flies; thus they come in contact with sputa and other substances whereby tubercle bacilli discharged from the body of a patient become ingested. The insects then alight on food and deposit the tubercle bacilli, and thus easily contaminate milk, meat, and other substances. The author mentions Yersin as having noticed that the bodies of dead flies collected in his laboratory often contained numbers of the plague bacillus. The influence of various insects, more particularly mosquitoes, in carrying the filaria sanguinis is well known. The mosquito has also been suspected as the agent in the conveyance of malaria, and the writer suggests that the "sleeping-sickness" is due to infection carried by insects. Ordinary inflammatory conditions may be produced by the common flea or bed-bug, though the writer has been unable to find that the latter insect carries tuberculosis infection, as is stated by some observers. The writer goes on to show the importance of warding off flies as far as possible, especially in cases of the diseases mentioned. He suggests a solution of formol as of considerable use for this purpose, and particularly good in cases of pityriasis.—*British Medical Journal.*

Suppuration in the Peritoneal Cavity.—Contrary to what was formerly believed, the peritoneal cavity is a place where suppuration in many cases is less likely to occur after the entrance of micro-organisms than are the cellular or muscular tissues, and many points with regard to the anatomical and physiological characters of the peritoneum come into play in explanation of this fact; to mention one, the peritoneum is a membrane which absorbs fluids with the very greatest rapidity, and in this way deprives bacteria of the necessary pabulum, and brings them into immediate contact with the active cells, either epithelial or plasma cells.—Dr. W. Watson Cheyne, Treves' "System of Surgery," vol. i., p. 85.

Epistaxis.—Bleeding from the nose is a frequent occurrence in interstitial nephritis. It is said to occur at all stages, but mostly at the beginning and the end of the disease. It is also met with in threatened uræmic attacks, on account of the increased arterial tension. Hence the propriety of examining the urine in all cases of recurrent epistaxis, especially in elderly people. Its relation to apoplexy has been frequently discussed. By some it is maintained that it tends to ward off such attacks, and hence may be regarded as beneficial.—*Scottish Medical and Surgical Journal.*

Hæmaturia.—Dr. David Newman (*The Lancet*, July 2d) makes the following statement: "We may classify the diseases of the kidney commonly associated with blood in the urine under the following heads: (1) Traumatic lesions—(*a*) from injury and (*b*) from calculus; (2) passive hyperæmia—(*a*) pressure on the renal veins, (*b*) torsion of the renal veins, and (*c*) reflex spasm of arterioles; (3) inflammatory hyperæmia—(*a*) nephritis, acute and chronic, (*b*) tuberculous disease, and (*c*) cystic degeneration and hydatids; (4) tumors of the kidney.

Hydatid Cysts.—In the removal of hydatid cysts it must be clearly borne in mind that there are two walls—an outer, formed by inflammatory condensation of the tissues and the tissue in which the tumor is growing, and an inner, the lining membrane forming the true cyst wall. This latter can be pealed off, but the outer should on no account be touched.—Harrison Cripps.

Cholelithiasis.—Dr. A. H. Cordier, in an article entitled "Some Pathological and Clinical Phases of Gall Stones" (*The Journal of the American Medical Association*), concludes as follows: (1) Cholelithiasis is of frequent occurrence and usually gives rise to symptoms either severe or obscure. (2) Cholesterin as a gall-stone-producing agent must be present in an abnormal quantity. (3) Cholesterin is in a great measure a product resulting from the destruction and disintegration of the epithelium of the biliary ducts and gall bladder. (4) Bilirubin-calcium, an insoluble compound resulting from the union of bilirubin and the lime salts, is the nucleus of most of the stones formed in the gall bladder. (5) Jaundice, ptomain poisoning, and suppuration are late symptoms of cholelithiasis. (6) Dyspeptic symptoms, swarthy skin, uneasiness in the region of the gall bladder (congestion of liver), and loss of weight are some of the remote and local symptoms of the presence of gall stones. (7) Inflammatory diseases of the duodenum and bile passages are the most direct causative factors in the production of gall stones. (8) The surgery of these cases is especially difficult, and the inexperienced should not undertake it. (9) A ball-valve stone usually continues to give rise to symptoms until removed by surgical means. (10) Stones in the gall bladder, producing septic symptoms, should be removed.

The Widal Test for the Diagnosis of Typhoid Fever.—Dr. W. H. Welch, of Baltimore, in a paper read before the American Medical Association, summarized as follows: (1) Experience has demonstrated that the method of serum diagnosis of typhoid fever is of great practical value. (2) The alteration of the blood on which this method is based is a specific effect of infection or intoxication with the typhoid bacillus. (3) The microscopical serum test is to be preferred to the macroscopical methods. (4) Quantitative determinations, relating especially to the culture, the time limits, and the dilution of the serum, are of importance, and, at least in doubtful cases, should not be neglected. (5) As the reaction may be delayed or occasionally absent, a negative result of the test does not exclude the diagnosis of typhoid fever. The later in the course of the disease the test is applied, and the oftener the examinations are repeated at

intervals, the less is the probability of the existence of typhoid fever, if the reaction is not manifest. (6) The persistence of the reaction, sometimes for years after recovery from typhoid fever, is to be borne in mind in interpreting a reaction in febrile conditions. The appearance of the reaction and its increase during the period of observation speak for fresh typhoid infection. (7) The danger of mistakes from positive reactions in non-typhoid cases can be guarded against in nearly all instances. (8) Provision should be made, especially by the establishment and support of municipal or State laboratories, to render generally available to practitioners the serum method of diagnosis, as well as other bacteriological procedures of similar practical value.

The Galvanic Current for the Treatment of Pterygium.—Dr. Horace M. Starkey (*Journal of the American Medical Association*, September 17th) says the cases which seem to be suitable for electrolysis are those with small pterygia, not encroaching much upon the cornea, and particularly those in which there is considerable enlargement of blood-vessels. The way in which the electricity acts upon the tissues is as follows: (1) It coagulates the blood in the vessels, thus stopping the blood current and causing the vessels to disappear. (2) It produces a mild adhesive inflammation of the subconjunctival tissues, thus forming a firm cicatrix between the conjunctiva and the sclera, so that the gliding of the former over the latter is prevented, and (3) it destroys micro-organisms in the tissues, so that, if the claims advanced by certain investigators that micro-organisms are the cause of this disease should prove to be well founded, this treatment would still be rational. The advantages of this method are: First, it avoids any loss of tissue; second, it is painless; third, it does not incapacitate the patient; fourth, it stops the progress of pterygia seen in the early stages. With these advantages is coupled the fact that it seems quite as free from recurrences as any other method. It is not advised, except as a palliative, in broad fleshy pterygia or in those encroaching much upon the cornea.

Lead Poisoning.—Dr. Arthur Whitelegge, chief inspector of factories and workshops, makes the following report of the results of lead poisoning (*British Medical Journal*, July 23d): "As it occurs among workers in lead the symptoms of plumbism may be acute or chronic, and in the chronic cases there occur from time to time acute exacerbations. The acute poisoning is seen at its worst in young persons, and especially in girls, who have recently commenced to work in the factories. Sometimes they suffer from severe colic, with constipation, lasting a few days; or they may have violent diarrhœa and other gastro-intestinal symptoms of severe irritant poisoning, often leading to a fatal termination in a week or two. Or they may suffer from acute anæmia followed by fits and delirium, often by a rapidly fatal issue. Among the symptoms of chronic poisoning are the well-known anæmia, blue line on the gums, colic, paralysis and cramps of muscles, the so-called 'encephalopathia saturnina,' gout, cirrhosis of the kidneys, and affections of the organs of reproduction. In a series of thirteen hundred and ninety cases colic occurred in eighty-eight per cent., paralysis in seven per cent., and encephalopathy in five per cent. The paralysis is usually of the forearm type, giving the characteristic double wristdrop; sometimes, however, it is of the upper-arm type, affecting the deltoid, biceps, and supinator longus; sometimes of the ordinary (Aran-Duchenne) type of progressive muscular atrophy, attacking first the intrinsic muscles of the hands; sometimes of the peroneal type (the legs being involved in about thirteen per cent. of the cases). It affects comparatively rarely the muscles of the larynx. The most terrible cases are those with severe nervous manifestations—the encephalopathic or fulminant cases, resulting, as they do not infrequently, in death after a few hours' illness. The patient, if a girl, is at first probably considered to be hysterical, and shortly develops convulsions, blindness, delirium, and coma. Even if the patient escapes with her life, the result may be persistent blindness, epilepsy, or insanity. Ophthalmoscopic examination often shows double optic neuritis or neuro-retinitis, although there is often amblyopia without fundus changes. Vision may be partially recovered, or absolute blindness may be caused by the atrophy secondary to the papillitis. Permanent blindness more often results, however, from a primary chronic atrophy of the optic nerves. The fits are toxæmic in origin, like those of uræmia and alcoholism, and can only be differentiated from idiopathic epilepsy by a recognition of their exciting cause. In men gout is frequently developed from interference with the excretion of uric acid, and sooner or later cirrhosis of the kidney is set up, to which, in a large proportion of cases, death is directly due. Nearly all female workers in lead are either menorrhagic or amenorrhœic, and abortion is so common as materially to lower the birth rate in some of the affected districts; it is common, moreover, even if the father alone is a worker in lead. In one hundred and twenty-three pregnancies seventy-three children were born dead, and of the fifty born alive only fifteen lived beyond the third year. The children usually die in convulsions, and if they live they are generally ill developed and badly nourished.

Quinine Not a Specific in Malaria.—Dr. James Van Marter (*Gaillard's Medical Journal*, July) believes that if we exclude the simple intermittents, quinine cannot be regarded as a specific, and summarizes briefly his conclusions as follows: (1) As a preventive, quinine will not do for those who are compelled to live indefinitely in a severe malarial climate; in time, it will act as a vasomotor poison. (2) Quinine acts nearly as a specific in all malarial fevers characterized by intermissions or well-marked remissions, but fails in the continued fevers, those with typhoid-like symptoms, those malarias without temperature, and the cachexias and anæmias due to malaria. (3) It is thus proved that quinine is a poison to the plasmodium itself, but useless against the toxin manufactured by it. (4) Warburg's tincture, in the last condition, has an action, not yet understood, on the toxin (or the eliminative system), by which the system is put in condition to benefit by quinine. (5) Quinine should never be used in hæmoglobinuria, or given subsequently to one who has suffered from it, it being liable to bring about a recurrence of the condition. (6) Only those living in regions of severe malarias can become competent to settle these questions *pro* or *con*.

Gynæcological Examination of Women Recently Confined.—Examination is specially indicated when the puerperium has been attended by any signs of infection, and should embrace (1) bimanual examination; (2) inspection of the vulva, vagina, and cervix; (3) investigation of traumatic lesions of the cervix and of the conditions of the cervical mucosa; (4) culture examinations of the cervical secretions; (5) catheterization of the uterine canal, with dilatation if necessary. This will often show the presence in the uterine canal of an abundant brownish or creamy liquid, in which in infectious cases pathogenic micro-organisms are constantly found.—Dr. Doléris, *Bull. Soc. Obst. et Gyn. de Paris*, No. 3.

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THE FOOD SUPPLY OF THE WORLD.

AT the meeting of the British Association, which has lately been held at Bristol, Sir William Crookes dealt at length with this important subject. The view taken in his address at first sight seems a very pessimistic one, and the outlook for the entire world, and especially for those countries which, like Great Britain, depend mainly on outside sources for food, appears to be black to a degree. The eminent chemist predicts —and asserts that his predictions are based upon incontrovertible facts—that in time the wheat production of the world will not nearly suffice for the wants of its inhabitants, and that consequently, unless other means can be devised to meet these wants, there will be universal starvation. Before this point is reached, however, the gloomy forecast is relieved by a ray of light, for the author of the address announces that chemistry will step in and avert the threatened danger. After referring in detail to the present condition of wheat culture in various parts of the globe, and proving by voluminous statistics that under the existing methods of agriculture the supply of bread will after some years be inadequate to the needs of the rapidly increasing population, Sir William Crookes then shows that by the aid of the chemist the grain-bearing capacity of the soil will be almost indefinitely augmented. With regard to what is termed a "dominant" manure, he says: "Wheat pre-eminently demands nitrogen fixed in the form of ammonia or nitric acid. All other necessary constituents exist in the soil; but nitrogen is mainly of atmospheric origin, and is rendered fixed by a slow, precarious process, which requires a combination of meteorological and geographical conditions to enable it to advance at a sufficiently rapid rate to become of commercial importance." The fact is then demonstrated that the supply of nitrogen to be procured by the methods now in vogue is lamentably insufficient, and that the only way in which the difficulty can be successfully overcome is by the fixation of atmospheric nitrogen. Sir William Crookes sketches in these words the probable manner in which this will be effected:

"The fixation of nitrogen is a question of the not far distant future. Let me see if it is not possible even now to solve the momentous problem. As far back as 1892 I exhibited, at one of the soirées of the Royal Society, an experiment on the flame of burning nitrogen. I showed that nitrogen is a combustible gas, and the reason why, when once ignited, the flame does not spread through the atmosphere and deluge the world in a sea of nitric acid, is that its igniting-point is higher than the temperature of its flame—not, therefore, hot enough to set fire to the adjacent mixture. But by passing a strong induction current between terminals, the air takes fire and continues to burn with a powerful flame, producing nitrous and nitric acids. This inconsiderable experiment may not unlikely lead to the development of a mighty industry, destined to solve the great food problem."

The expense of burning out nitrogen from the air, so as to produce twelve million tons annually—the quantity estimated as necessary—with the means at present at our disposal, would be so immense as practically to be out of the question; but that sufficient electricity can be generated to accomplish the desired result is, according to Sir William Crookes, quite within the realms of possibility. He expresses himself on this point in the following words: "A preliminary calculation shows that there need be no fear on that score. Niagara alone is capable of supplying the required electrical energy without much lessening its mighty flow. The future can take care of itself. The artificial production of nitrogen is clearly within view, and by its aid the land devoted to wheat can be brought up to the thirty-bushels-per-acre standard." It is also pointed out that we should not rely on one food stuff alone, but should trust more and more to the exuberant food stuffs of the tropics. The address concludes with this pregnant sentence: "We must develop and guide nature's latent energies; we must utilize her inmost workshops; we must call into commercial existence Central Africa and Brazil, to redress the balance of Odessa and Chicago."

THE DETERMINATION OF SEX IN BEES.

IN the *Archives of Surgery* for August is an article with the above title, which suggests some interesting considerations. Summarized, it is as follows: There are no "neuters" in the beehive. The workers are all females, in whom the sex organs are present but undeveloped. The development of the sex organs depends upon the food supplied to the young bee when in the larval stage. A certain stimulating food "jelly" is given by the bees to any larva which it is wished should grow into a developed female — in other words, a "queen bee." Under the influence of this food the larva grows more quickly, both as regards size and development, than one fed from the common food; and, as a most special feature, its ovaries grow and become capable of forming eggs, without fecundation. The queen bee can at will, if she has once been impregnated, produce eggs which will hatch out either as workers or as drones. If a queen bee has not been impregnated, she can produce fertile eggs, but they will all hatch out males. Sexual impregnation is absolutely necessary to the production of females. Thus it would appear that there may be some truth in the

old belief that males take chiefly from their mothers and females from their fathers, and one can by no means feel certain that prepotency on the part of one or other parent may not have some influence in the determination of the sex of the offspring.

THE MARRIAGE OF THE UNFIT.

Of the many and voluminous articles on the engrossing question as to whether some steps should not be taken to prevent the deterioration of the human race by the marriage of the unfit, probably the most able, and certainly the most noticed, has been one contributed to *The Lancet* of a recent date by Dr. Harry Campbell. Utopian and fantastic plans have of late been freely advocated in the lay press of this country, with the object of legally prohibiting the union of those who are palpably in no condition, physically or morally, to propagate the race. Dr. Campbell, of course, treats the matter from a scientific and medical point of view, and his opinions are well worthy of the closest attention. He first shows to how large an extent the process of natural selection is interfered with among civilized peoples—on the one hand, by a saving of lives which under more primitive conditions would terminate; and on the other, by the restrictions governing the marriage laws. Dr. Campbell appears to think that the abolition of polygamy was, from the standpoint of physical hygiene, a mistake; but, as he admits that the reintroduction of polygamy is impossible, he agrees that the only course to pursue is to attempt to instil into the minds of the community at large the pernicious effects resulting from ill-judged marriages, and asks and answers the question as to who shall and who shall not marry. To the majority of the cases cited by him as unfit, such as pulmonary consumption, organic heart disease, epilepsy, insanity, chronic Bright's disease, no exception can be taken; but it will be generally thought that, as regards one class of disorders at least, he is certainly inclined to be too emphatic in his opinion. We refer to functional disorders of the nervous system. He says: "The highly sensitive are not suited to this hard world. Its strenuous conditions call for men of iron nerve and stout heart. I fear that it must be acknowledged that as regards happiness—which, at any rate from the purely physical point of view, may perhaps be fairly looked upon as our being's end and aim—the fine animal with little imagination and a good thick skin has the best time of it here—is the most truly 'fit.'"

In short, the advice given to those afflicted with "nerves" is, "Remain single." There can be no doubt that if the "neurotics" never married, in the course of time diseases of the nervous system would greatly lessen and probably die out; and it may also be true that a world peopled with phlegmatic, thick-skinned mediocrities would be happier, in a sense. But the question may here be asked: Do we want to be without our "neurotics," or can we get along without them? If history be ransacked, it will be found that most of the great deeds of the world have been performed by individuals of a highly sensitive, nervous temperament. The contention, too, that the thick-skinned mediocrities are the happiest persons is open to doubt. If a more or less animal life is the end to be gained, then they may be; but at the same time the fact should be borne in mind that, while they never descend into the depths of misery, like the being with the ill-strung nervous system, yet, on the other hand, they are incapable of experiencing many of the delightful emotions and of ascending into the heavens of joy, as are the neurotics. In this country the suggestion of Dr. Campbell, that any person afflicted with a neurotic taint should be precluded from marrying, will scarcely meet with favor, as in that case probably half the population would remain single.

News of the Week.

The New Brunswick Medical Society.—The annual meeting of this society was held at St. Stephen, N. B., on July 19th and 20th. The election of officers resulted in the choice of the following to serve for the ensuing year: *President*, Dr. A. B. Atherton; *First Vice-President*, Dr. J. D. Lawson; *Second Vice-President*, Dr. G. T. Smith; *Corresponding Secretary*, Dr. J. H. Scammell; *Recording Secretary*, Dr. G. C. Vanwart; *Treasurer*, Dr. Foster McFarlane.

Cornell University Medical College held its opening exercises on the evening of October 4th, in the building it is to occupy temporarily in the Bellevue grounds until its own building is finished. Dr. Lewis A. Stimson called the students, numbering three hundred and fifty, to order, and introduced President Shurman, who delivered an address. He was followed by Prof. W. M. Polk, dean of the medical faculty, who outlined the work of the session. The new building is to be erected on First Avenue, and will occupy the frontage from Twenty-seventh to Twenty-eighth Street.

Nurses and Nurses.—In a letter from Dr. S. P. Kramer, at Camp Wikoff, to the *Cincinnati Lancet-Clinic*, we find the following interesting comparison: "My experience here has convinced me of some things in regard to nurses. The general hospital here is divided into about two equal divisions, the main hospital and the annex. The former has trained nurses—lay women—under a female superintendent; the latter has Sisters of Charity under a sister superior. Whatever may be the case in civil institutions, in the field hospital the Sister of Charity is far superior. There is with them none of the bickering with the ward doctor, no fussiness, no refusing to perform menial work when necessary, no desire to 'shine,' as is the case with the 'trained nurse.' The Sister of Charity has no ambition but duty; she obeys all orders quietly, with a prompt, orderly, and willing manner. No sacrifice is too great, no service too menial. It has been a matter of general comment here that the annex is a far superior hospital to the main branch, and, to my mind, this is largely due to the presence of the Sisters of Charity in the former."

Idle Physicians.—In commenting upon the fact that within two months after hostilities began over forty-five hundred physicians offered their services to the surgeon-general of the army, the editor of the *Times and Register* remarks: "Ambition and patriotism are all very well to explain this mad rush of an army of nearly five thousand doctors, but, if the facts were sifted, it would be found that in all with few exceptions the real incentive was nothing to do, no practice, and the ghastly spectre of grim want. The writer is familiar with instances where medical candidates, failing to secure entry to the medical department, have gone forward as non-commissioned officers, hospital stewards, and even privates in the ranks."

Violent Surgeons.—Among the deaths from violence noted in the annual report of the Cincinnati health board are three set down as due to surgical operations.

Anthropological Pessimism.—Dr. D. G. Brinton, writing in *Science*, says that there has been a curious tendency during the last decade among European anthropologists toward scientific pessimism. Numerous writers, such as Le Bon, Lapouge, Ribot, Nordau, Vierkandt, Nadaillac, etc., have deplored the traits of modern culture and seen in many of them signs of degeneration. The white race is to be overwhelmed, Europe is to lose its prestige, modern society is to go to the bad. The Latin race is to fall before the Teutonic, the Teutonic before the Slavic, and so on. M. Novicou, in a book called "L'Avenir de la Race Blanche," calls a halt to these lamentations. He argues that when racial, national, and social jealousies cease, the species will be much better off; and what these scientific "calamity howlers" are grieving about is precisely this advancement.

Shortcomings of the British Army Medical and Commissary Departments.—At the same time that reports are published of remarkable efficiency of the medical and commissary departments in the army of Gen. Sir Herbert Kitchener, we hear of the utter breakdown of these same departments in the recent autumn manœuvres of the British army on Salisbury Plain. The London papers say that the soldiers suffered many privations and were without food or drink until relieved by civilians. Many committed offences, for the military prisons had no terrors for them in view of what they suffered in the ranks. The cavalry reached the field without horses enough, and had to hire mounts. There were but two medical officers for twelve regiments, and sufferers from sickness and accident complained of great neglect. Twenty-one injured men were left unattended for hours on a railway-station platform, through some knotting of red tape. So, at least, say the English papers. We quote them merely because misery loves company.

The Medical Society of Nova Scotia. — The annual meeting of this society was held on July 6th. On account of the meeting of the Maritime Medical Association being held at the same date, the session was devoted entirely to business matters. Officers for 1898–99 were elected as follows: *President*, Dr. John McMillan, Pictou; *First Vice-President*, Dr. Andrew Halliday, Shubenacadie; *Second Vice-President*, Dr. M. A. Curry, Halifax; *Secretary-Treasurer*, Dr. W. S. Muir, Truro.—*The Maritime Medical News.*

The First Football Death of the season was reported from Boston on October 1st. A boy, seventeen years old, was thrown during a scrimmage, four or five men of his own and the opposing eleven coming down on top of him. It was not until he tried to arise that his comrades had any idea that he was severely injured. They then found that he was unable to move. At the City Hospital it was found that he was suffering from a fracture of the spine. An operation was performed, but the lad died the following morning.

Portable Army Hospitals.—Sixty portable hospitals, a few for use here but most of them to be sent to Porto Rico and Cuba, are being made for the army. Each building, which will accommodate forty patients, is to be nineteen feet three inches wide and one hundred and twenty-one feet long, to be constructed in sections. There will be forty-four windows and five doors, four of which will be double. Some of the sections will be hinged to allow of speedy exit in case of fire. There will be ample ventilation by means of traps in the ceiling. These buildings are to be constructed of North Carolina pine, set on cedar posts eighteen inches from the ground, and the roofs are to be covered with canvas properly painted. Air ducts are to be provided for those in which it is expected to erect stoves, the ducts in such cases to enter near the stoves. The hospitals for use in the North will have double floors with a felt lining.

Typhoid Fever at Dawson City.—Prospectors returning from the Klondike report an epidemic of typhoid fever at Dawson. Many of the cases terminate fatally.

The University Medical School.—The executive committee of New York University has accepted a deed transferring to the university the new medical college building, begun last year for the Bellevue Hospital Medical College. The university has also received from the former trustees of Bellevue Hospital Medical College the use of the Carnegie Laboratory, with the understanding that the building will become the property of the university when certain conditions are fulfilled. More than $100,000 has been received in gifts during the summer for the University and Bellevue Hospital Medical College, and a medical endowment fund has been established.

The Yellow-Fever Situation in parts of the South is somewhat worse than it was last week. Especially in Jackson, Miss., the fever is spreading in spite of all the efforts hitherto made to prevent it. The total number of cases up to October 2d was 22, with 3 deaths—an increase of 13 cases and 1 death in five days. The cases reported from the several places invaded in Louisiana and Mississippi during the present summer are as follows: Louisiana—Baton Rouge, September 25th, 1 case; Franklin, to September 24th,

106 cases, 5 deaths; Harvey's Canal, to September 24th, 6 cases; Houma, to September 24th, 2 cases, 1 death; Jefferson Parish, September 20th, 5 cases; New Orleans, to September 28th, 12 cases, 2 deaths; Wilson, September 26th, 12 cases. Mississippi—Edwards, vicinity, September 27th, 1 case; Jackson, to October 2d, 22 cases, 3 deaths; Orwood, to September 27th, 67 cases, 3 deaths; Oxford, to October 2d, 14 cases, 4 deaths; Taylors, to October 2d, 84 cases, 8 deaths; Waterford, September 9th, 1 case; Water Valley, September 28th, 1 case; Harriston, October 2d, 3 cases, 1 death. The disease is of a comparatively mild form, as shown by the low death rate.

To Select Camps in Cuba for the Army of Occupation.—The secretary of war has appointed a special commission to select camps for the Cuban army of occupation and to perfect the sanitary arrangements of Havana and other Cuban cities where American troops will be located. The following are the names of those chosen for this commission: Col. G. E. Waring, of New York; Col. William R. Livermore, engineer corps; Col. James C. Lee, quartermaster's department; Capt. Jasper H. Bliss, subsistence department; and Maj. Robert M. O'Reilly, medical department.

Another Transport Scandal has been averted by the action of General Wood at Santiago. He made a personal inspection of the transport *Minnewaska*, which was on the point of sailing with forty sick men, and found that she was unprepared for the trip. Three of the military officers aboard of her were apparently dying, yet there were no nurses aboard, and the supply of food and medicines was inadequate. Not the slightest preparation had been made for the comfort of the sick men. In his report to General Lawton on the subject, General Wood said that great loss of life would undoubtedly have resulted if the *Minnewaska* had sailed in the condition in which he found her, and for this condition of affairs the officers charged with preparing the ship were directly responsible. He detained the vessel for twenty-four hours and had her put in a fit condition for the transportation of the sick.

The Fourth International Congress of Physiologists met at Cambridge, England, during the last week in August. On Tuesday, August 23d, Professor Foster, president of the congress, delivered the annual address, welcoming the congress to Cambridge, and expressing a personal preference for demonstrations rather than dry papers from the members of the congress. A demonstration of great interest was that by Dr. Porter, who showed that (1) the mammalian heart, if kept distended with blood, will, like the frog's, beat for some time after excision; (2) a portion of the ventricle of the excised mammalian heart, suitably fed through a branch of the coronary artery with blood, will go on contracting regularly; (3) the excised mammalian heart will continue to beat if fed with serum only, provided oxygen under pressure be also provided. Dr. Langley showed that, by union of the central end of the cut vagus with the peripheral end of the cut sympathetic, the normal effects of the latter might be produced by stimulation of the former. He concluded from this that all nerve fibres are essentially the same, the difference of function depending on the distribution. Dr. Haldane demonstrated his method of liberating and estimating the amount of oxygen in the blood by means of potassium ferrocyanide. The University of Cambridge conferred honorary degrees on Bowditch, of Boston; Golgi, of Turin; Kronecker, of Berne; Kühne, of Heidelberg; and Marey, of Paris —all of whom were in attendance at the meetings of the congress.

Obituary.

CLAUDIUS HENRY MASTIN, M.D., LL.D.,

MOBILE, ALA.

Dr. Claudius Henry Mastin, one of the leaders of American surgery, died at his home in Mobile, Ala., on October 3d, at the age of seventy-two years. He was born at Huntsville, Ala., on June 4, 1826, and received his academic degree from the University of Virginia in 1846. He immediately began the study of medicine at the University of Pennsylvania, Dr. George B. Wood, of Philadelphia, being his preceptor, and was graduated with the degree of M.D. in 1849. His friends throughout the country had already begun to prepare for the celebration of his fifty-year "jubilæum" next spring. After graduation he went to Europe, and passed five years in study in Paris, London, and Edinburgh, and then began the practice of his profession in Mobile in 1854. Upon the breaking out of the civil war he entered the Confederate army, serving as medical director and later as corps surgeon under General Polk in the army of the Tennessee and elsewhere. At the close of the war he resumed his practice in Mobile. In 1875 the honorary degree of LL.D. was conferred upon him by the University of Pennsylvania.

Dr. Mastin early showed a predilection for surgery, and his skill in operation and ingenuity in devising instruments and special methods for overcoming difficulties amply justified his preference for this branch of the healing art. He was, however, no less a physician, an able diagnostician, and a therapeutist of more than average ability.

A firm believer in the value of association as a means to the betterment of the individual physician as well as to the increase of the general fund of medical knowledge, Dr. Mastin was always prominent in medical societies. He was one of the original members of the American Surgical Association, of the American Genito-Urinary Association, and of the Southern Surgical and Gynæcological Association. He was also credited with being the originator of the idea of a general congress of special societies to be held at some central point at stated intervals, and it was in conformity with a suggestion offered by him in 1885 that the first Congress of American Physicians and Surgeons was assembled in Washington in 1887. He was a member, either active or honorary, of a great number of other medical associations, and was a prominent figure at the meetings of many of the local and national societies.

Dr. Mastin always kept in close touch with his medical alma mater, the University of Pennsylvania, and was a member of the central council of the university as well as one of its examining-board. He was a frequent contributor to medical literature, and his fame as a surgeon of superior parts was world wide.

Clinical Department.

DIPHTHERIA COMPLICATED BY MEASLES; HYPERPYREXIA; RECOVERY.

By L. E. LA FÉTRA, M.D.,
NEW YORK,
ADJUNCT LECTURER, DISEASES OF CHILDREN, NEW YORK POLYCLINIC.

The patient, Louisa K——, six years old, was first seen on the morning of Tuesday, March 15th. On Sunday she had gone out of town to spend a few days, but returned ill on Monday.

I found the girl fairly well nourished, though slightly anæmic. Respiration was difficult and noisy, the mouth being held open and the tongue protruded; the breath was very foul. There was a grayish nasal discharge, tenacious and excoriating. Below the angle of the jaw on either side was a tender swelling, about as large as a goose egg, flattened and irregular in shape, so as to extend as low down as the cricoid cartilage and upward on to the body of the lower jaw. Four or five enlarged glands were felt in the indurated mass; no fluctuation. The tonsils had been removed some months previously, but their stumps were covered by a grayish membrane—more extensive on the left side, where it had already begun to pass up on to the soft palate. Temperature, 101.2° F.; respiration, 28; pulse, 104. The diagnosis was nasal diphtheria extending to the pharynx. Accordingly fifteen hundred units of antitoxin were given immediately—that being all then at hand—and cultures were made from the nose and throat. Both cultures showed the Klebs-Loeffler bacillus in abundance. Hourly nasal irrigations—one ounce of hot saline bichloride (1 to 5,000) for either nostril—were ordered, the method of irrigation being that described by Holt ("Diseases of Infancy and Childhood," 1898, p. 57). The nurse was instructed to persist in her efforts to make the liquid run through, either into the pharynx or out the opposite nostril; this because of the nasal obstruction existing even after some of the membrane had been removed with a cotton swab. The child received also five minims each of tincture of the chloride of iron and tincture of nux vomica, with two teaspoonfuls of whiskey every two hours.

By six o'clock that evening the membrane covered nearly the whole of the soft palate and uvula, and the faucial pillars were very œdematous; the nasal discharge was more profuse. The dyspnœa was very distressing, but intubation was not performed, because the obstruction seemed to be altogether above the larynx. Two thousand additional units of antitoxin were given, and the two other children, one of whom had measles, were immunized. Isolation of the children from each other was carried out as thoroughly as possible. On the second day after the antitoxin had been given, small fragments of membrane began to come away. Irrigation was made every three hours.

Then for four days the child improved, the nasal discharge ceasing, the membrane clearing off, and the swelling in the neck diminishing. But on March 21st the temperature, which before had ranged from 100° to 102°, and was falling, went up to 103° F., and an atypical erythema appeared on the abdomen near the site of the antitoxin injection; there was also some erythema on the neck. There was no coryza, laryngitis, or bronchitis. The question was whether this was an antitoxin rash or measles, or both combined; and the case was as puzzling at first as any of those reported in Berg's article on the "Antitoxin Exanthemata" (New York Medical Record, June 18, 1898), for the rash was atypical in appearance and distribution, and there were no catarrhal symptoms. On the inside of the cheeks, however, a few of the measles spots described by Koplik were found; and these, so far as I know, have never been observed as part of an antitoxin exanthem—even of the morbilliform variety. By the next day the eruption was typical, though accompanied by an unusual amount of œdema. The temperature, March 22d at 10 A.M., was 105.6° F.; at 6 P.M. it had risen to 106.4° F., and the child was prostrated. Cultures from the throat were negative. By 10 P.M. the temperature had risen to 107° F. The next day the temperature had fallen about a degree and a half, and the child was more comfortable. The further history of the case was not unusual.

The case is reported because of the following points of interest: 1. The early and extensive swelling of the cervical lymph nodes—not unusual in cases beginning as nasal diphtheria. 2. The early loosening of the membrane—on the second day after antitoxin; and its complete disappearance on the fifth day. 3. The absence of catarrhal symptoms at the onset of the measles, and the hyperpyrexia during the development of the eruption.

23 West Thirty-Seventh Street.

PHANTOM TUMORS IN A MAN.

By BENJAMIN K. HAYS, M.D.,
OXFORD, N. C.

T. B——, a white man, forty years of age, consulted me in regard to two tumors in his side. Upon examination I found deep-seated nodular enlargements in both lumbar regions. The abdominal muscles were tense, and the enlargements felt like cocoanuts situated beneath them. He was suffering from acute melancholia, and informed me that I was the twenty-third doctor he had consulted. The only pleasure he seemed to have in life arose from the perplexity he caused the doctors and the ability to inform me at each visit that he was "worse." Believing that his "tumors" were in part at least the result of the morbid condition of his mind, I put him under the influence of chloroform, whereupon the swellings entirely disappeared.

ANGINA LUDOVICI COMPLICATING AN ACUTE SUPPURATIVE OTITIS; RECOVERY.

By M. D. LEDERMAN, M.D.,
NEW YORK,
LECTURER ON DISEASES OF THE NOSE AND THROAT, NEW YORK POLYCLINIC; ASSISTANT AURAL SURGEON, MANHATTAN EYE AND EAR HOSPITAL; FELLOW, NEW YORK ACADEMY OF MEDICINE, ETC.

In reviewing the literature pertaining to this serious form of infectious cellulitis, I have not been successful in finding a record of a similar instance. For this reason, if no other, the report of this case will no doubt prove of more than passing interest. Infectious phlegmon attacking the floor of the mouth is in itself a rare manifestation, and usually follows some form of traumatism, disease of the teeth, or infection arising from adjacent tissue. In the case which came under my observation, the pathogenic factor had its origin in an acute suppurative otitis.

Miss R——, nineteen years of age, consulted me on account of a very painful ear. She was recovering from an attack of "cold in the head," but found that after the increased nasal secretion had subsided there was a decided sense of fulness in the left ear, which gradually became very painful. During the night she suffered intensely, and the following morning presented herself for treatment.

On examination, a well-marked attic inflammation could readily be seen, with considerable bulging of that portion of the membrana tympani. Some tender-

ness existed over the mastoid region, though no prominence of the posterior canal wall could be observed.

An incision was made through the bulging portion of the drum, and carried forward so that free drainage should be established. In such cases mere paracentesis does not accomplish the desired result, as the folds of mucous membrane which line the vault of the middle ear act as a ball valve, and, if not incised, obstruct the necessary drainage. Consequently, in attic inflammations with indications that point to retained contents, it is always judicious to make an inverted L incision, through the postero-superior quadrant. Ice was ordered to be applied over the mastoid for a few hours. The patient passed a poor night, and, as she was not able to call at my office the next morning, the treatment was continued at her home. Rest in bed was advised, as the temperature was 103.4° F., with a pulse of 120.

Finding the drum still bulging, I made another incision through the postero-superior quadrant, and carried it across to the anterior periphery of the drum. Some blood and pus followed this incision. The posterior canal wall showed no signs of mastoid invasion, though deep pressure over the process elicited some tenderness. Ice applications were continued for four hours, and a hot aural douche was used every two hours.

During the second night the ear was quite comfortable, although Miss R—— complained of pain, similar in character to a sore throat, but not definitely located. This symptom rapidly became worse. Difficulty in swallowing was also noticed.

On my examination on the third day, the ear was found much improved; the swelling of the drum had almost disappeared, and there was but little soreness present, although some discharge flowed from the ear. The mastoid tenderness had disappeared completely. To my unpleasant surprise, however, the patient was not able to speak distinctly. Saliva was flowing from her mouth, and her face had the expression so frequently seen in cases of peritonsillitis. She was unable to swallow solid food, and it was only after considerable effort that liquid could be taken. No disease of the fauces or larynx could be found after a difficult examination, but the sublingual tissues along the floor of the mouth on the left side were somewhat swollen. The temperature was 101.4° F.; pulse, 110. The ear had given no trouble during the preceding few hours, but the trouble in the mouth caused much annoyance. Syringing of the ear was continued, and an antiseptic mouth wash was prescribed, to be employed after being heated. No disease of the teeth could be found from a cursory examination.

At the next visit, on the fourth day, the patient presented a characteristic and serious aspect. The left side of the neck was decidedly swollen and very painful to pressure. The chain of cervical lymphatics could be distinctly felt. The external swelling was very tense, without fluctuation. My patient's expression was one of great suffering, intensified by the appearance of the tongue, which was pushed over the edge of the lower teeth, on account of the marked swelling of the sublingual tissues. The flow of saliva was constant, and nothing could be swallowed, as the movement of the tongue was restricted. After repeated attempts a pharyngeal and laryngeal picture was obtained, but no œdema of these parts could be seen. Breathing was not materially affected. Though the tongue was normal in size, it appeared larger, owing to its protrusion. No distinct fluctuation could be felt in the swelling along the floor of the mouth. At a point near the frænum on the left side, the mucous membrane seemed changed in color.

It being realized that œdema in this region is very apt to assume dangerous proportions, surgical exploration was decided upon without delay. The parts were cocainized and three deep punctures were made into the swollen tissues on the left side. The first puncture was made near the lingual frænum, the second about an inch farther posteriorly, and the third about half an inch farther back but more exteriorly. I was agreeably surprised to find that pus followed the first two incisions. These punctures were dilated by means of a grooved director. Pressure over the external swelling of the neck augmented the discharge of pus. Hot bichloride-of-mercury solution (1 to 4,000) was ordered as a mouth wash, to be employed hourly. Pus continued to be discharged for four days, and under ichthyol applications the cervical swelling gradually disappeared. The ear had ceased discharging at this time, and no further trouble was experienced. General tonic treatment was indicated for some time after her convalescence.

Infection in this case no doubt arose from the severe acute suppurative otitis. This occurred through the lymph channels, as the cervical lymphatics were swollen and painful. It was interesting to observe that as the phlegmon progressed the ear symptoms gradually subsided. The fortunate location of the incisions certainly avoided radical external exploration, and showed that the disease was still involving the superficial tissues. A delay of twenty-four hours would no doubt have caused a serious, if not a fatal termination.

Angina Ludovici must be regarded as a very treacherous disease, in which the prognosis is exceedingly dubious. No time should be wasted in employing tentative measures. Free incisions must be made whenever œdema makes its appearance under similar circumstances.

38 East Sixtieth Street.

A CURIOSITY IN A CASE OF LOCOMOTOR ATAXIA.

By FREEMAN F. WARD, M.D.,

NEW YORK.

Thomas M——, aged fifty-three, came to the clinic at the Roosevelt out-patient department, complaining of trouble with his stomach, and gave the following history: His mother died of phthisis and his father of Bright's disease, but neither had any history of specific disease. His present trouble began fourteen years ago with gradual failure of vision, extending over a period of four years, when he became totally blind. About this time he began to experience some numbness of the feet and lower extremities, which he attributed to his sitting so long in one position, his occupation being that of a driver. He also had at this time more or less incontinence of urine and constipation. It is only during the past six or seven years that he has had what he could call real pains in the calves of his legs. His main suffering at the present time is severe pain in the region of the stomach. This pain is almost constant and unassociated with taking food.

Condition at present. Optic atrophy, with total blindness; feeling of tightness in the head; more or less pain in the lower extremities, but pain most marked in the gastric region; girdle sensation in slight degree; incontinence of urine; obstinate constipation; absolute loss of knee jerk; marked impairment of muscular sense, bringing out most strikingly the helplessness of a blind ataxic; inco-ordination and imperfect muscular tone very marked.

The curious point of the case lies in the symptom of Romberg. Although the patient is perfectly blind, he can stand with his feet close together quite well, with only slight swaying; but the moment he closes his eyes he begins to sway and would topple over if

left to himself. The symptom seems to be brought out only by the act of closing the lids, and not simply from the shutting out of the light. The question arises, Is the symptom of Romberg produced or brought out in any case, even when optic atrophy is not present, by shutting out the light or by the act of closing the lids?

I report the case as one of possible interest solely on account of this peculiarity, for in talking with several physicians especially interested in nervous diseases, to whom I have shown the patient, I have found none who ever before observed such an instance.

6 East Fifty-eighth Street.

SOME INTERESTING EYE CASES.

By W. L. GRANT, M.D.,

Fargo, N. Dak.

E. M——, aged thirty-two, was a colored musician of a low class, doing night work in a Moorehead brothel. He was of magnificent physique and in perfect health. On the morning of June 14, 1898, between five and six o'clock, he took part in a drunken brawl in a saloon next door to the place where he was employed, and while on his back was struck in the eye by his antagonist's heel. He was immediately brought home in a cab, and a lotion, put up by a druggist, was applied to the eye. The principal ingredient of the lotion was hamamelis. He suffered considerably for an hour or so after the accident, but had no pain after that. The case was referred to me by Dr. Henning, of this place, and I saw the patient the same evening. I found considerable ecchymosis and œdema of the lids, a bruise in the sulcus of the lower lid, three-fourths inch long and showing peg marks, and much swelling of the conjunctiva. The sclera was ruptured for one-half inch, the line of rupture extending from quite near the inner canthus downward and outward in a slightly curved direction, and passing in front of the insertion of the inferior rectus. This caused the eye to turn upward, and it was impossible for it to be brought downward by any muscular action. Opening the opposite eye (the left) caused pain in the injured organ. Enucleation was advised, but refused for a time. On the 15th the injection was increased. On elevation of the lid the conjunctiva rolled out in a large firm welt. The man now agreed to the operation, which was done the next morning, with the assistance of Dr. Lorkness, as Dr. Henning, who referred the case to me, was unable to be present. The operation was done in a living-room in a flat, where one room served for a family and the surroundings were not of the best. The globe having been caught up with a small tenaculum, the muscles were divided one after the other and the collapsed organ was removed. In addition to the rent described, there was a second and shorter one above and slightly to the outer side, passing behind the superior rectus insertion. There was little or no hemorrhage either before or during the operation. Two hours after the operation (chloroform was the anæsthetic used) the patient complained of being hungry, and ate a pound of beefsteak. He remained in bed twenty-four hours, and in the house twelve hours longer. Recovery took place promptly and without incident. He was ready to go to work inside of a week.

G. H——, aged twenty-five, a student at the Agricultural College, whose home was at Devil's Lake, N. Dak., consulted me, March 25, 1898, regarding a pterygium of the right eye. He said he had been suffering slightly from a cold for a few days, but wanted operation at once, so as to be able to get home as soon as possible. The growth was removed, but instead of the patient putting in an appearance at my office the next morning his roommate came, saying he was in bed with measles. Notwithstanding this, the wound healed kindly, and I did not notice that there was a departure in the healing process from the ordinary. I would not be inclined knowingly to undertake any operative work upon an eye at the beginning of an attack of measles, but here there was no harm done.

F. L——, aged thirty-five, a Scandinavian coal miner, of Lehigh, Iowa, consulted me, July 16, 1897, regarding an injury received while at work in the mine three days before. Walking past a blast which he did not know was loaded, he received the discharge in the face, and the skin and conjunctiva were peppered with bits of coal and grains of powder. He had been using, on his physician's advice, a lotion of boric acid. There had been some pain from the time of injury. I found, in addition to the above-mentioned markings, a wound just at the junction of the cornea and sclera above, a little more than one-fourth inch in length, and filled with bits of powder and coal. After cleansing, I found the sclera was not penetrated. There was much injection of the conjunctiva about the affected area, and pain was more severe than at first. I cauterized the wound throughout its full extent with carbolic acid, ninety-five per cent., gave the man atropine-sulphate solution, one per cent., continuing the boric-acid lotion at the same time, and put on a bandage. The cauterization was repeated two days later. There was no more pain, and healing took place promptly, with vision unimpaired.

608 Front Street.

SKIN GRAFTING BY UNUSUAL METHODS.

By FRANK OVERTON, A.M., M.D.,

Patchogue, N. Y.

On October 11, 1897, O. M——, aged thirteen, had three fingers of his right hand crushed between two rollers, so that spontaneous amputation took place at the first joint of each, leaving the proximal phalanges denuded of skin, but with the bones covered with granulations. On November 4th I covered the granulations with the lining membrane from the shell of a hen's egg, applying its inner surface to the finger. The egg was used immediately after it was laid, and it was kept in warm water during the operation. There was difficulty in immobilizing the fingers, and so most of the grafts were rubbed off, but a piece one-fourth of an inch square adhered to the base of one finger and formed an islet of epithelium, which, however, spread somewhat more slowly than ordinary epithelium. A few days later grafts of epithelium were shaved from the patient's arm and applied to the fingers, but most of these were rubbed off. Those that did grow had the same appearance as the grafts from the egg.

On December 29th, at 2 P.M., I amputated a foot for a gunshot wound. Placing the foot in my carriage, I drove three miles to my office with the temperature at zero. I then shaved off thin grafts of epithelium and preserved them on glass at the ordinary temperature of my office until I could send for the boy and graft them on his fingers, which was done at 7 P.M. These grafts grew as well as those from the normal skin. Between the three methods a good skin finally covered the stumps and put an end to further experimenting.

In the Medical Record for April 4, 1896, I reported a case of skin grafting in which the epithelium was raised by means of a cantharides blister. That and the present case illustrate methods of obtaining grafts when they cannot be procured in the usual way.

A FORM OF AMBLYOPIA.

By NORBURNE B. JENKINS, M.D.,
KNOXVILLE, TENN.

It will be observed in those individuals in whom there is a difference in the refraction of the two eyes, and more especially in those anisometropes in whom in one or both eyes there is one-half diopter or more of astigmatism, that usually after the fifty-fifth year and occasionally at an earlier age an amblyopia of one eye often manifests itself.

The amblyopia here described is analogous to the amblyopia ex anopsia of early life, from which it differs in the following essentials: It readily yields to treatment; it is rarely accompanied by strabismus, which, when present, is divergent and of so slight a degree as to require no surgical interference, as the restoration of binocular single vision is simultaneous with the complete return of vision to the amblyopic eye; it tends to progress rapidly until only a perception of light remains; as a rule, it is the less ametropic eye which becomes amblyopic; it may occur in an emmetropic eye, provided its fellow is ametropic.

The vision of the amblyopic eye depends upon the progress of the suppression of the retinal image, and varies in different subjects from a perception of light only to a vision in the initial stage, but slightly subnormal. The field of vision is contracted in proportion to the loss of vision, and gradually increases with the improvement of the vision until it resumes its former normal extent. The fundus oculi presents no changes in this functional impairment, which possibly heretofore has been confused with those forms of amblyopia and amaurosis in which the ophthalmoscopic signs are normal or nearly so.

It is to be understood that the etiological factor in those cases is principally an improperly corrected presbyopia, and in some instances an uncorrected or an improperly corrected ametropia. This serious type of retinal-image suppression will clearly demonstrate the disastrous consequence of the routine practice of placing on the eyes of the aged spherical lenses, both of which are of the same focus, notwithstanding there exists in a large percentage of persons a tangible anisometropia.

Of the various forms of amblyopia, this one is probably the most amenable to treatment. When this is begun an immediate improvement from day to day is noticeable, and then from week to week a gradual increase of the vision and of the field of vision is perceptible, until finally the complete function of the eye is restored.

The above-described condition is by no means of rare occurrence. It possibly exists more frequently than any other form of blindness, and is entirely at variance with the accepted theory that "after the complete development of the functional capacity of the retina it will not be materially impaired by non-use."

Below is the history of an incipient and another of a developed case of this amblyopia:

Mrs. ——, aged thirty-seven; neurasthenia; has been for years under the care of physicians. In the last fifteen years the patient has been tested for glasses by five oculists. Until recently the vision of the right eye was decidedly better than that of the left.

June 20, 1898. Patient states that the vision of the right eye has recently become as defective as that of the left. Wearing for near vision: R. E., + 1.50 S.; L. E., + 1.75 S.

June 20th to 24th. R. V., $\frac{6}{15}$; $\frac{6}{6}$ with + 5 S. combined with — 0.50 C., axis 105°; $\frac{6}{6}$ with + 4.50 S. combined with — 0.50 C., axis 105°; $\frac{6}{6}$ is the best vision obtainable. L. V., $\frac{6}{15}$; $\frac{6}{6}$ with + 5.50 S. combined with — 1 C., axis 90°; $\frac{6}{4}$ with + 5 S. combined with — 1 C., axis 90°.

July 30th. R. V., $\frac{6}{9}$; $\frac{6}{6}$ with + 5 S. combined with — 0.50 C., axis 105°; $\frac{6}{4}$ with + 4.50 S. combined with — 0.50 C., axis 105°. L. V., $\frac{6}{15}$; $\frac{6}{6}$ with + 5.50 S. combined with — 1 C., axis 90°; $\frac{6}{4}$ with + 5 S. combined with — 1 C., axis 90°.

Mr. John W. D——, aged sixty-five; robust health; in the civil war was a gunner of company B, first Tennessee light artillery. As a gunner, the patient claims that he had no superior. With a James rifle, carrying a twelve-pound shot, he was able at the extremest range of this gun to hit the smallest target. Until one year ago the right eye only was used in shooting. At the age of forty-five glasses were needed for near vision. Four years ago he killed squirrels with a rifle. Two years ago his sight was in condition successfully to shoot a small target gun. He noticed no impairment of the vision of the right eye until about twelve months ago, when a haziness manifested itself, which gradually increased until the sight was lost. Previous to this impairment the vision of the right eye was considered perfect.

April 11, 1898. R. V., perception of light. Wearing for near vision: O. D., + 3 S.; O. S., + 3 S.

April 25th. Counted fingers at one meter, and saw a white door knob across the room. Field of vision much contracted.

May 10th. With + 4 S. combined with — 0.75 C., axis 180°, read newspaper advertisement in large type.

May 25th. With + 4 S. combined with — 0.75 C., axis 180°, read No. VII. near-vision test type.

June 1st. With + 4 S. combined with — 0.75 C., axis 180°, read No. V. test type.

June 15th. With + 4 S. combined with — 0.75 C., axis 180°, read slowly No. I. test type. Distant vision slightly less than that of left eye. Field of vision somewhat contracted.

April 11th. L. V., $\frac{6}{15}$. Near-vision refraction of left eye: + 5 S. combined with — 2.50 C., axis 20°.

A NOTE ON CONSERVATIVE SURGERY OF THE THUMB.

By JOS. H. BALL., M.D.,
TUCSON, A. T.

A GUNSHOT wound of the hand was my first surgical case in private practice. A Frenchman and his son were in a small rowboat at Rockaway Beach, lying in wait for wild ducks. The son held the oars and the father was ready to fire. While the latter watched the birds afar, the gun went off and the contents of the cartridge, acting like a bullet, carried off the whole thenar eminence of the son's right hand. The shaft of the first metacarpal bone of the thumb was shot away. Some splinters, attached to the articular heads, were hanging about the wound. When the hemorrhage was stopped, the wound cleaned of powder, wadding, and stray shot, and when the splinters were snipped off, it was interesting to note the action of the remaining muscles of the thumb deprived of their lever. Movements of flexion, extension, abduction, and adduction could obviously have but one result—shortening and lengthening of the thumb on its axis. A thumb acting like a jack in a box would seem to be useless. The question of amputation was unavoidable. The patient remarked that if the thumb proved to be an obstruction it would be time to lop it off later on. His wish was acceded to, as there seemed to be nutrition enough left for the thumb. Under ordinary antiseptic dressings, granulations soon sprang up and filled the gap. Peruvian balsam and compression with narrow strips of adhesive plaster were used later on to hasten the formation of the skin. In about three months repair was complete. During this

process the thumb slowly shortened. The articular heads of the bone were brought into contact and united. For the first six months the various movements of the thumb were barely perceptible. Little by little they became more marked. The patient could now hold light objects with his diminutive thumb. He continued exercising it. After a year he could again wield the sledge hammer, with measured beat and slow, in the Woodhaven agateware factory, as though his thumb had never been in danger of being snipped off by one cut of the surgeon's scissors.

The practical conclusion to be drawn from this case is that even if the whole first metacarpal bone of the thumb is shot away, no amputation should be made. The thumb will become shorter, but will be practically as useful as if no accident had happened.

A few days ago I saw a Mexican with a thumbless right hand, a rifle ball having broken the first metacarpal bone. It is easy to imagine the lifelong misery of a Mexican unable to roll his cigarettes. The sight of such wretchedness induced me to relate my case.

A CASE OF ANNULAR SCOTOMA.

By C. N. B. CAMAC, M.D.,

NEW YORK.

Owing to the rarity of this condition, the following case may be of interest:

For two days Mr. O. J—— had been taking a preparation containing ferri et quininæ citras and quininæ bisulphas. When seen he had taken a little over thirty-six grains in the two days, at the rate of about six grains thrice daily. At 9:30 A.M., while sitting at the breakfast table, he experienced a sensation as of "looking through tubes." He could not see objects to the right or the left or below him while holding the eyes fixed; only such objects as were directly before him were visible. He was conversing with some one across the table at the time, and those on either side of him as well as those on either side of the person to whom he was speaking were wholly out of his field of vision. In order to see his plate and so on, it was necessary for him to bend the head directly down. He could not recall having attempted to see objects above him. He was concerned about his condition, but he was in no other way incapacitated; there was no sensation of nausea or fainting. The condition lasted about half an hour.

This patient is a subject of hypermetropia, which is corrected by glasses. The field of vision is but moderately contracted, about equally so in both eyes. He is of a stable nervous disposition.

I. E. Atkinson, in the *Journal of the American Medical Association* (1889, vol. iii., pp. 413–446), gives a very complete account of the toxic effects of quinine on the eyes, but cites only one case of the annular variety. De Schweinitz in his Alvarenga prize paper quotes Atkinson as mentioning only this one case. A similar case, but of longer duration, occurred during my term as first assistant in Dr. Osler's clinic in the Johns Hopkins Hospital. This case has not, to my knowledge, been reported.

Amaurosis is reported by De Schweinitz to have lasted in one case two years, but no permanent cases are recorded. The minimum dose, according to De Schweinitz, capable of producing toxic eye symptoms, is fifteen grains; smaller doses than this are cited by him as having produced partial amaurosis of short duration.

The condition, while alarming to the patient, is neither of long duration nor followed by any serious disturbance of vision, and would tend to indicate an idiosyncrasy to quinine.

Surgical Suggestions.

Removal of Cerumen. — Hard plugs of wax are sometimes difficult to remove at one sitting by mere syringing. Ricci finds that the cerumen is quickly softened by peroxide of hydrogen. The meatus should be filled with the drug, and after soaking for a few minutes the ear should be syringed with hot water. The process may be repeated if necessary.—*Annal. des Mal. de l'Or.*, April.

How to Perform Paracentesis of the Membrana Tympani.—Dr. Grüber gives the following directions in the *Rev. Hebd. de Lar., Otol. et Rhin.* When the exudation is quite fluid, or when a less fluid exudation is small in quantity, limited to the anterior portion, and not displaced by the air douche, the incision should be made in the antero-inferior quadrant. When, on the contrary, the exudation is more or less thick and is very abundant, a long curved incision should be made from above downward, parallel to and about one millimetre from the posterior attachment of the membrane. A kind of curved lid is thus formed, which allows of a ready escape of pus, and this may be hastened by aspiration of the meatus with Siegel's speculum.

Foreign Bodies in the Ear.—Hummel (*Münchener med. Woch.*) makes the following deductions: (1) The relation of the normal ear canal to inanimate foreign bodies is entirely without reaction; that is, the foreign body in the ear does not, *per se*, endanger the integrity of the ear. (2) Every hasty endeavor at removal is, therefore, not only unnecessary, but can become very injurious. (3) In all cases not previously interfered with (with few exceptions), the foreign substance can be removed from the ear by means of syringing. (4) The general practitioner should never employ anything but the syringe in his endeavors to remove foreign bodies from the external auditory canal. (5) An instrumental removal of a foreign body from the ear should be effected only by one fully able to examine the ear with an otoscope and acquainted with every operative manipulation in this region.

Forcible Reduction in Pott's Disease.—(1) Forcible reduction in Pott's disease involves danger to life; this is, however, not sufficiently great to banish it as a warrantable procedure, and especially in properly selected cases. (2) The reduction of firmly ankylosed kyphosis is to be condemned. (3) The justifiability of reducing a gibbus involving a considerable number of vertebræ is doubtful. (4) The application of this method is justifiable in cases of paraplegia when the older methods of immobilization have failed. This method is probably no more dangerous to life than are the bloody operations for this purpose. (5) It is exceedingly probable that many kyphoses treated by this method will recur. (6) Forcible reduction may prove of great value in severe rachitic scolioses and kyphoses, and under these conditions will probably be found to be almost without danger.—Dr. Albert H. Freiberg, *Cincinnati Lancet-Clinic.*

Operative Interference in Epilepsy. — From the evidence now at hand, the operative surgery of epilepsy must be regarded as an experiment with a very uncertain future. The facts at our disposal seem to indicate that while trephining may be a justifiable measure in these cases, the careful and conscientious surgeon must warn his patients and the parents not to be too sanguine of good results. Statistics seem to prove that operative measures should be employed only in traumatic cases in which there are localizing

features, such as a depressed fracture, a scar from an old injury, or focal manifestations on the part of the brain.—J. C. Oliver.

Mortality of Prostatectomy.—The mortality after prostatectomy is still high—about eighteen or twenty per cent. for all operators. It is gradually becoming less as the indications for the operation are better understood. The death rate of individual operators will undoubtedly continue to grow less as they become more expert in performing the operation, and the cases of relapse and failure will be much fewer as more experience is gained.—Alexander.

Fistula in Ano.—According to Dr. Cooke, the following important points should be observed: (1) A careful physical examination of the lungs as well as of the entire rectum is to be made in every case. (2) Pulmonary tuberculosis is not necessarily a contraindication. (3) Do not put down the knife until certain that every sinus has been divided. (4) Remove all diseased tissue. Large wounds are not to be feared. (5) Caution: the sphincter is to be divided only once and at right angles. (6) Special attention is to be given to the mucous opening. (7) Invasion of the perineum must be avoided, especially in females. (8) Systematic antisepsis is necessary if good results are desired. (9) Care and patience are required in the after-treatment. Dressings are not to be left to the family nurse. (10) In the after-treatment two warnings are to be heeded; complaints of unusual pain by the patient and increase of the discharge. Either of these may mean the formation of another abscess. (11) Hemorrhage and incontinence of fæces are the chief danger. Both are amenable to treatment and should not deter from the operation.—*Medical News.*

Suggestions.—Never allow rubber plaster to come in contact with a surface uncovered by normal skin. Since it cannot be sterilized by heat, it must be considered as being dirty. Before operating, always find out whether the patient has any malarial history. The discovery of this fact will save you many a bad scare when temperature rises suddenly after operation. As long as any urine issues from the urethra it cannot be said that there is an impassable stricture. Patience and gentleness will do wonders. The most skilful surgeons see very few strictures that prove impassable. An aseptic dressing placed over a wound that is expected to unite by first intention should be left undisturbed until it is time to remove the stitches, or until there is reason to believe that the case is not running the expected aseptic course. If you find albumin in the urine before operating for pelvic trouble, remember that it may be due to cystitis and not to a nephritic condition. Investigate microscopically or by catheterization of the ureters if possible. Albumin does not signify much if casts are persistently absent. Fishbones stuck in the pharynx are nearly always inserted upon the lateral walls, a little above the aryepiglottic fold. It is often difficult to detect them with the mirror. Spray cocaine and search with the finger, remove with forceps, and warn the patient that he may feel for a long time as if the bone was still in position. Wherever large wet dressings are indicated for a long time, we often find that all of the antiseptics now in use may cause an eczematous condition of the skin, unless so diluted that their antiseptic power is more than doubtful. In such cases the employment of simple saline solution is frequently of the greatest value, cutaneous irritation seldom follows its use, and wounds do as well as with any of the antiseptics. Do not cauterize infected wounds, unless it is to obtain a moral effect in a scared patient. It was shown more than fifty years ago that when horses were inoculated with glanders, and sheep with pox, cauterization with a red-hot iron, applied ten minutes after inoculation, failed to check the disease. An infected wound should simply be well laid open and covered with a wet dressing. The use of nitrate of silver to cauterize wounds is a harmful absurdity.—*International Journal of Surgery.*

Tuberculous Abscess.—After evacuating the pus inject ol. cinnamomi, 10; ol. sterilisat. q.s. ad 100.—Mariotti.

The Operative Treatment of Irreducible Subcutaneous Fractures.—Ransohoff, in an article on this subject, believes that in certain cases an interference before union had resulted would be preferable to the certainty of deformity, and reports seven cases which have come under his observation in which the fracture was exposed and directly treated. The author states that his experience or what he has gleaned from literature does not warrant him in coming to conclusions that are final. Nevertheless, he believes that it would be justifiable to submit in a tentative way to the following postulates: (1) The conversion of a simple fracture is justifiable when other means to secure the best end results fail. (2) In fractures of the diaphysis of the tibia, femur, humerus, and clavicle, in which insurmountable longitudinal displacement or axial rotation has taken place, immediate operation or mediate operation before definite union has occurred is indicated. (3) In epiphyseal separations, when reduction cannot be otherwise effected, an early operation is justified. (4) Fractures complicated with dislocations irreducible by other methods warrant operative interference. (5) The involvement of a joint, except probably in the case of knee and hip, does not, *per se*, militate against operation if this is otherwise indicated. (6) If extensive comminution is present, as in compression or crushed fracture, operation is contraindicated. (7) Special precautions against infection must be taken, in connection with which should be borne in mind the dangers of too firmly closing a wound and the advantage of temporary tamponade and secondary suture. (8) Reckless and indiscriminate resort to the operative relief of deformity in recent simple fractures is to be condemned, since there would be few fields of surgery, in the event of an unsuccessful intervention, in which the contrast could be greater between the good intended and the harm done.—*Boston Medical and Surgical Journal*, June 23d.

Fowler's Method for the Radical Cure of Inguinal Hernia.—Dr. G. R. Fowler sums up the essential steps of the operation as follows: (1) A curved skin incision which furnishes easy access to all the parts involved in inguinal hernia. (2) Splitting the anterior wall of the inguinal canal from the external to the internal ring. (3) Isolation of the cord and sac together from the surrounding parts, after which these are separated from each other and cleared well up to the internal ring. (4) Double ligature of the deep epigastric artery, with sufficient space between the ligatures to permit of incision. (5) Cutting away of the neck of the sac and incision of the posterior wall of the inguinal canal and Hesselbach's triangle. (6) The cord is transplaced into the peritoneal cavity from the site of the internal to a point below the level of the pubic bone. (7) Broad approximation and suturing of the peritoneum and transversalis fascia in front of the cord for the space mentioned. (8) Obliteration of the internal ring and inguinal canal by accurate suturing, and strengthening of Hesselbach's triangle and the new point of emergence of the cord by outward displacement of the pubic attachment of the corresponding rectus muscle.

Aneurism of the Aortic Arch.—Dr. B. Merrill Ricketts (*The Journal of the American Medical Association*, vol. xxxi., No. 7) submits the following conclusions: (1) The remedy lies within the domain of surgery. (2) There are but two such methods at the present time to be considered: (*a*) Obstruction of the right subclavian and common carotid arteries; (*b*) introduction of wire or needles into the sac, with or without galvanism. (3) Either one or both of the operations should be applied in all cases after a thorough saturation with the iodides. (4) Ligation is attended by less danger, less mortality, greater and more permanent and universal benefit. (5) Ligation of the subclavian and common carotid arteries is less dangerous than ligation of the innominate. In point of fact, the latter should not be done. (6) The iodides should always precede and follow any surgical interference. (7) Extreme atheroma might contraindicate ligation. (8) Extreme atheroma might possibly indicate the introduction of needles, or wire, with or without galvanism. (9) Atheroma to some degree is present in the majority of arch aneurisms. (10) It is impossible technically to classify arch aneurisms. (11) The results of ligation in the case herein contained have been far more beneficial than was ever anticipated.

To Remove Obstruction from Hypodermic Needles.—Fill syringe with water, screw on needle, and place in alcohol flame at point of obstruction, using some pressure on piston. The steam generated will force out the obstruction. Useless needles can thus be made useful.

In Removing Plaster from the hands after the application of plaster casts, it would be well to remember the fact that syrup of lime is the strongest solution, and that the application of a little sugar to the hands will greatly assist you. The same rule applies to removal of casts.—*Georgia Journal of Medicine and Surgery.*

The Question of Operative Interference in Recent Simple Fractures of the Patella.—Dr. Charles A. Powers, at the meeting of the American Surgical Association, in New Orleans, April 19th, 20th, 21st, in a paper with the above title, enumerated the conditions tending to cause imperfect union and the obstacles to union as follows: (1) Separation of the fragments are due to (*a*) retraction of the upper fragment from contraction of the quadriceps femoris and a slight drawing down of the lower fragment through a shortening of the ligamentum patellæ; (*b*) effused blood. (2) Tilting of the fragments; this may be present to a marked degree and unrecognizable without operation. (3) Rupture of the tendinous expansion of the vasti and of the lateral portions of the capsule of the joint. (4) Prolapse of the prepatellar tissues into the breach. (5) Atrophy of the quadriceps femoris due to (*a*) disuse, (*b*) arthritis, (*c*) marked contusions of the muscle, (*d*) blood extravasated from the joint through a rent in the upper part of the capsule. (6) Arthritis of the knee-joint, this probably resulting in (7) adhesion of the patella. Further, though of little value, may be added (8) natural poverty of the blood supplied to the bone (rendered negative by the fact that the vertical fractures heal satisfactorily); and (9) exceptional tendency to osteitis, seen in fat people, in the aged, and in certain conditions of the blood.—*New Orleans Medical and Surgical Journal*, May, 1898.

Increase of Intradural Pressure in Head Injuries.—Dr. W. N. Bullard (*Boston Medical and Surgical Journal*, March 24th) makes the following summary: (1) An abnormal increase in the intradural pressure often occurs as an accompaniment or result of severe head injuries, when no large clot exists. (2) This intradural pressure may be in part due to an excess in the amount of subdural fluid. This, however, is, as a rule, not the chief element in the intradural pressure, which is principally due to the bulging of the brain itself. (3) The cause of this intradural pressure is apparently a congestion or filling of the intracranial blood-vessels and the results thereof.

The Surgical Treatment of Exophthalmic Goitre.—Dr. Doyen (*Rev. de Chir.*, No. 11) says there are but two operations which have the same end in view—the suppression of the secretion of this gland: (1) thyroidectomy; (2) the section of the cervical sympathetic. The methods must be judged by the results produced. One of the champions of section of the sympathetic says: "(1) Basedow's disease is modified and also cured by this operation. (2) The tachycardia is diminished and disappears after resection of the sympathetics. (3) The goitre diminishes and disappears, though somewhat more slowly than the exophthalmia."

The Other Kidney in Contemplated Nephrectomy.—Dr. G. M. Edebohls (*Annals of Surgery*, April) says that the most important resource is incision down to, delivery, and examination of the opposite kidney, previous to completing an otherwise indicated nephrectomy. He proceeds as follows: (1) The patient is placed prone upon the table. The entire width of the back is prepared aseptically. (2) An air cushion is placed beneath the abdomen. (3) A straight incision is made from the last rib to the ilium, along the outer border of the erector spinæ muscle. If the space is narrow it may be made more oblique. (4) Carry the incision through the muscles and fascia till the perirenal fat is reached. Avoid injuring the ilio-gluteal nerve; if divided, it should be sutured at the end of the operation. (5) Cut through the perirenal fat till the kidney is reached, and separate the kidney. (6) To facilitate delivery of the kidney, (*a*) if it be distended with fluid or pus, aspirate; (*b*) let an assistant draw the patient down on the table till the air cushion lies beneath the lower half of the thorax; this will cause the kidney to present at the wound. (7) Palpation of the kidney or any operative procedure necessary. If only a conservative operation is to be done, examination of the other kidney is not necessary. (8) Unless drainage of the interior of the kidney is called for, or the wound surfaces have been soiled by infectious matter, full closure of the wound without drainage should be the rule.

Dangers of Blisters.—Dr. Huchard (*Bull. de l'Acad. de Méd.*, No. 7, 1898) expresses the following opinion concerning blisters: "(1) They often produce an open wound, which facilitates secondary infections or the absorption of cantharides. (2) Besides tending to cause inflammation of the kidneys and bladder, they have a general congestive action. (3) Even in those diseases in which they are most frequently used, such as pneumonia and pleurisy, they should be discarded, because, though they increase pulmonary ventilation, they increase also pulmonary congestion. (4) Blisters tend to arrest excretion by the kidneys, so important in all infectious diseases, and this is especially harmful in those normally causing albuminuria. Instead of aiding the excretion of toxins, blisters are likely to produce a fresh intoxication. (5) The only real use of blisters is in their revulsive and analgesic action, but the effect is better attained by less dangerous means, such as mustard plasters or cold baths."

Practical Use of the Endoscope.—Dr. Herman G. Klotz (*Journal of Cutaneous and Genito-Urinary Diseases*, July) says: "The endoscope is of practical value

in three different ways: first, the determination of the nature and of the location of pathological conditions supplies, in the most exact manner, information, on the strength of which we may select those therapeutic measures which promise the best and quickest results, and apply them to the proper spot; second, by freely exposing the diseased portions to the eye and bringing them within easy reach of our hand, endoscopy naturally renders possible and invites the application of suitable drugs with great exactness to those parts, and to them only, thereby allowing the use of much stronger and more effective remedies, which would injure any but the affected portion; third, we are enabled by the endoscope to control the effects of any treatment, whether applied through the endoscope or otherwise, so that we soon can judge whether the adopted treatment is successful or not.

Therapeutic Hints.

Urticaria.—

℞ Menthol ..... 10 gm.
Chloroform ..... 30 "
Ether ..... 30 "
Spirit of camphor ..... 30 "
S. Use as a spray.

—Dr. Gaucher.

Chronic Cystitis.—

℞ Methylene blue ..... 1.6 gm.
Powd. French chalk ..... 2.4 "
Lanolin ..... q.s.
Ft. pill. No. xx. S. Two to four pills daily.

—Dr. L. Jays.

Hypodermatic Injection of Quinine.—

℞ Quinine hydrochlorate ..... 3 parts.
Antipyrin ..... 2 "
Distilled water ..... 6 "

—Laveran.

In the Catarrhal Sequelæ of Measles and Pertussis.—

℞ Creosote ..... 1 gm.
Cod-liver oil ..... 100 "
Sugar ..... 0.05 "
S. Two teaspoonfuls with the meals.

—Dr. A. Hock.

Gastritis.—

℞ Resorcin ..... 4.5 gm.
Bismuth salicylate ..... 15.5 "
Tannigen ..... 15.5 "
Powd. sugar ..... 8 "
Sodium carbonate ..... 8 "
M. S. ℥ i. q. 2 h.

—Ewald.

Painful Contusions.—

℞ Menthol ..... 3 to 6 parts.
Collodion ..... 24 "

—Néam.

Coryza.—

℞ Cocain. hydrochlor. ..... gr. iiss.
Menthol ..... gr. iv.
Acidi boracici ..... ʒ ss.
Pulv. caffeæ ..... gr. viij.
S. Use as snuff.

—Dr. H. B. Whitney.

Chapped Hands.—

℞ Tinct. benzoini co 10
Aquæ rosæ 150

Acute Purulent Otitis.—

℞ Morphinæ sulphatis ..... gr. i.
Acidi boracici ..... gr. x.
Aquæ ..... ʒ ss.
M. S. Five drops into the ear every three hours.

—Mittendorf.

Postoperative Retention of Urine.—

℞ Morphinæ sulphatis ..... gr. ¼
Quininæ sulphatis ..... gr. x.
Spir. frument ..... ʒ i.
M. S. One dose.

—T. L. Rhoads.

Or:

℞ Tinct. belladonnæ ..... ♏ xv.
Tinct. ammon. valerian ..... ʒ vi.
Sodii bromidi ..... ʒ ij.
Syr. zingiberis ..... ʒ i.
Aquæ destill ..... ʒ iij.
M. S. ʒ ii. in water every hour.

—*Jefferson Medical College Hospital.*

Epididymitis.—

℞ Pulv. opii ..... ʒ i.–ʒ ij.
Camphor ..... ʒ ss.
Vaselini seu glycerini ..... ʒ i.

—R. W. Taylor.

For Facial Neuralgia.—

℞ Tinct. aconite root,
Chloroform,
Alcohol ..... āā ʒ iv.
Oil peppermint ..... ʒ i.
M. S. Apply with a camel's-hair brush.

For the Glossitis of Alcoholics.—

℞ Chromic acid ..... gr. x.
Distilled water ..... ʒ i.
M. S. Apply lightly to points of inflammation.

Rhinitis.—

℞ Guaiacol ..... ʒ i.
Menthol ..... gr. xl.
Cocaine hydrochlorate,
Camphor ..... āā gr. xx.
Glymol ..... ʒ iv.
M. S. Use in atomizer, spraying nose and throat every three hours.

—T. T. Purkitt, *Therapeutic Gazette*, 1898.

Chronic Rhinopharyngitis.—

℞ Menthol ..... ʒ i.
Oil of sweet almonds ..... ʒ x.
M. S. Apply with a brush.

Varicose Ulcer.—

℞ Carbolic acid ..... ʒ ss.
Boric acid ..... ʒ iiss.
Camphor ..... ʒ ij.
Ichthyol ..... ʒ v.
Oil sweet almonds ..... ʒ iiss.
Zinc ointment ..... ʒ iiiss.
M. S. For external use.

Acute Pharyngitis.—

℞ Codeinæ ..... gr. v.
Extr. catechu ..... gr. xxx.
Extr. glycyrrhizæ ..... ʒ iiss.
M. ft. mass. et in trochisci No. xxx. div.

Or:

℞ Potassii chloratis ..... gr. xv.
Ol. menth. pip ..... gtt. ij.
Extr. krameriæ ..... gr. xv.
Extr. glycyrrhizæ ..... ʒ iiss.
M. ft. mass. et in trochisci No. xxx. div.

Or:

℞ Ammonii muriat ..... gr. xxx.
Pulv. ipecac ..... gr. ij.
Pulv. capsici ..... gr. ss.
Extr. glycyrrhizæ ..... ʒ iiss.
M. ft. mass. et in trochisci No. xxx. div.

The first is used in cases with moderate soreness; the second when there is cough with raw and irritable throat; the third when the secretions are thick and tenacious.—Lefferts.

Herpetic Fever (Herpetiform Pseudo-Varicella).—Paul Gastou reports several cases of herpetic fever in which the condition is not merely symptomatic, but constitutes a real disease, the fever being accompanied by an eruption of herpes which may be situated in

any part of the body. The fever lasts a few days only and is rarely higher than 102° F. There is anorexia; the tongue is saburral at the centre, red on the edges. The breath may be fetid. There is no constipation. A slight bronchitis is present. The eruptive phenomena begin to disappear on the fourth day. This disease occurs especially in young children with an arthritic heredity or subject to herpes. It is not known whether or not it is really contagious or what is its exact nature; it is more like varicella than anything else, but differs from this also in several particulars.—*Journal de Clin. et de Thér. Inf.*, March 5, 1898.

Incompatibilities.—In an article, "Ueber einige Receptsünden und ihre Folgen," in the *Berliner klinische Wochenschrift*, Professor Binz, the pharmacologist of Bonn, calls attention to the following incompatibilities: Preparations of iron with tannic acid produce ink; chloroform in glycerin or tincture of iodine in water will not mix; sulphonal is very slightly soluble in water; calomel with potassium iodide results in the formation of the irritant mercuric iodide; tincture of iodine and mercurial ointment applied locally and together produce intense irritation; permanganate of potassium added to syrups causes a brown coloration, due to the abstraction of oxygen. Combinations of explosive powders, for example, potassium chlorate and tannic acid, and also under certain circumstances combinations with permanganate of potassium, sulphur, and carbon, should not be prescribed.

For Vulvar Papilliomata.—

℞ Acidi salicylici..... 2–3.5
Collod. flexil..... 5

The method is painless; the condylomata shrivel and fall off in a few days.—Mencière, *Jour. de Méd. de Paris*, No. 6, 1897.

For Tetanus Uteri.—

℞ Tinct. iodi..... 1
Alcoholis..... 2
M. S. Five drops in a wineglassful of hot water every half-hour.

—Müller, *Allg. med. Central-Zeitung*, No. 7, 1898.

Ointment in Acute Rheumatism.—

℞ Acidi salicylici,
Olei terebinthinæ,
Lanolini.....āā 15
Axungiæ.....q.s. ad 100

The affected joint is rubbed with this ointment, covered with ordinary cotton batting, and a tight flannel bandage applied.—Sterling, *Münch. med. Wochenschrift*, No. 10, 1898.

For Leucorrhœa.—

℞ Acidi tannici..... 60
Spir. lavandulæ,
Creosoti.....āā 30
Aquæ destill..... 250
M. S. One tablespoonful in a pint of water as douche.

—Lutaud.

Iodoform Ointment for Suppurating Wounds.—

℞ Iodoformol..... 1
Balsami peruviani..... 3 gtt.
Lanolini anhydr.,
Vaselini.....āā q.s. ad 10
M. ft. ungt.

—Reuter, *Deutsche med. Wochenschrift*, No. 32, 1898.

The Prescribing of Antipyrin.—In prescribing antipyrin one must consider a number of substances with which it is incompatible. Thus, do not prescribe antipyrin in combination with substances containing nitric acid (amyl nitrite, spiritus ætheris nitrosi), inasmuch as a light green isonitroso-antipyrin is formed. With calomel antipyrin forms a very poisonous organic mercurial compound. Antipyrin and carbolic acid, even in weak solution, form a double precipitate. Antipyrin and salicylate of sodium, if mixed together in powder form, give a pasty mass. In solution, however, these two drugs are not incompatible. Antipyrin and chloral form an oily solution. With β-naphthol, antipyrin forms a moist mixture. Lastly, antipyrin increases the solubility of caffeine and quinine salts in water.—*Wiener medizinische Blätter*, May 19, 1898.

Furuncle.—

℞ Acidi carbolici..... gr. v.–x.
Extr. ergotæ fld..... ʒ i.–ʒ ij.
Pulv. amyli,
Zinc oxidi.....āā ʒ ij.
Ung. aquæ rosæ..... ʒ i.
M. ft. ungt.

—L. Duncan Bulkley.

Enteric Fever in India.—Basing his views upon an observation of forty-six cases, of which two were fatal, Dr. Quill (*The British Medical Journal*, May 14th) recommends an antiseptic treatment, having as chief constituents carbolic acid and chloroform, as in the following formula:

℞ Acidi carbolici purissimi (Calvert's No. 1) ♏ xxxvi.
Tinct. chloroformi co..... ʒ ij.
Tinct. cardamomi co..... ʒ ij.
Syrup. aurantii..... ʒ i.
Aquæ chloroformi.....q.s. ad ℥ xij.
Ft. mist. One ounce with an equal quantity of iced water to be taken every second or third hour immediately after food.

Among good effects attributed to the treatment are intellectual clearness, absence of distention, early cleaning of the tongue, lack of secondary complications, rapid convalescence.

Acute Rheumatism in Children.—

℞ Sodii salicylatis..... ʒ iss.
Potassii iodidi..... ʒ ss.
Tinct. aconiti..... gtt. x.–xv.
Aquæ..... ʒ ij.
M. S. ʒ i. t.i.d.

—Caillé.

Heart Stimulant in Catarrhal Pneumonia.—

℞ Camphoræ..... gr. iss.–iij.
Flor. benzoini..... gr. iij.
Theobromæ..... gr. vi.
M. S. Three or four times a day.

—Caillé.

Gastralgia.—

℞ Morphinæ hydrochlor..... gr. iij.
Cocainæ hydrochlor..... gr. v.–viij.
Tinct. belladonnæ..... ʒ i.–ij.
Emuls. amygd. amaræ.....q.s. ad ʒ i.
M. S. Ten to fifteen drops every hour.

—Ewald.

Threatened Abortion.—

℞ Bromide of sodium or potassium..... gr. x.
Chloral..... gr. vij.
Morphinæ..... gr. ½
M. S. One dose.

—Thomas.

Importance of Earache.—(1) Earache, however slight, may signify disease that, neglected, may terminate in loss of hearing, even of life itself. (2) Recurring earache in children is almost always associated with lymphoid hypertrophy of the pharynx, depends on it; and permanent impairment of the function of the ear is prevented only by early surgical treatment of the "adenoids." (3) Acute inflammation of the middle ear may be frequently aborted if proper treatment—mostly of a general sedative character—be administered early and with precision. (4) If relief be not obtained by the second day, an expert examination of the ear should be made, and proper

surgical treatment applied to relieve intratympanic pressure and possible involvement of the mastoid cells or intracranial structures. Failure at this stage to obtain as exact knowledge as possible of the condition of the middle ear is criminal neglect.—HINKEL, *Buffalo Medical Journal.*

Epilepsy.—

℞ Zinc oxide ..... gr. iss.
Powdered valerian..... gr. iss.
Powdered belladonna..... gr. ½
Soap ..... q.s.
M. S. Four such pills to be taken daily.

—JULES VOISIN.

Tonsillitis.—In chronic cases subject to acute exacerbations, apply directly to the inflamed area:

℞ Tinct. aconit. rad ..... ℥ ss.
Tinct. belladonnæ..... ʒ i.
Tinct. ferri chlor..... ʒ ij.
Tinct. iodi comp..... ʒ iiss.
Glycerini .....q.s. ad ℥ i.
M. S. Apply with brush.

—F. W. FABRICIUS.

Itching of Urticaria.—

℞ Distilled water..... 450 parts.
Cherry-laurel water..... 50 "
Chloral ..... 5 "
Cocaine hydrochlorate ..... 3 "

—*La Provence Médicale.*

Leucorrhœa in unmarried women:

℞ Tr. cantharidis..... ♏ xcvi.
Tr. ferri chloridi,
Acidi phosphorici diluti .....āā ♏ clx.
Syrupi limonis..... ℥ ij.
Aquæ ..... q.s. ad ʒ iv.
M. S. One teaspoonful, in water, after meals.

—SLOCUM.

Oil of Wintergreen in Rheumatism.—

℞ Ol. gaultheriæ ..... ʒ iv.
Alcoholis.
Syr. simplicis .....āā q.s. ad ℥ iv.
M. S. One teaspoonful, in Vichy, three times a day.

Bronchitis.—

℞ Codeinæ..... gr. iv.
Acidi hydrocyanici dilut..... gr. xv.
Ammonii chloridi ..... gr. xl.
Syrupi pruni virginianæ .....q.s. ad ℥ ij.
M. S. A teaspoonful every three or four hours.

—*Roosevelt Hospital.*

Malaria in Children.—

℞ Tinct. eucalypt. glob.,
Spts. vini dilut.....āā 8
Quininæ muriat..... 2
Chinoidini..... 1.25–2
Acid. mur. dil..... q.s ad solutio.
M. S. Twenty to forty drops five times a day.

—A. ZUCKERMANN.

Don'ts in the Treatment of Pneumonia.—Don't think that you can get as good results from a tub bath, or from cold general spongings, as you can from the local application of ice. Don't become alarmed when the ice produces a sudden drop in the temperature and think the patient is going into collapse. Don't fail to retain the ice as long as fever is present and resolution has not taken place. Don't omit to apply one or two ice bags to the head. Don't overlook the beneficial influence of strychnine in combating pneumonia. Administer one-twentieth of a grain by the mouth every three or four hours, and besides give the same dose hypodermically once or twice a day until the system becomes irritable. Don't omit the hypodermic injection of one-fourth of a grain of morphine once or twice a day to secure rest and sleep. Don't fail to administer oxygen by inhalation more or less constantly if the patient is cyanotic or short of breath. Don't fail to bleed if cyanosis and dyspnœa are not relieved by oxygen inhalation. Don't lose sight of the great value of tincture of capsicum in relieving great nervous depression; delirium; dry, black, coated tongue; picking at the bed clothes, etc. Give it in from a half to one teaspoonful doses in water every two or three hours, or oftener, in alcoholic pneumonia. Don't fail to give sodium salicylate, ammonium acetate, potassium acetate, and potassium citrate, three grains of each, in a dessertspoonful of peppermint water, every three or four hours, if there is the least evidence of a rheumatic complication. Don't overlook the important action of quinine in this disease. —THOMAS J. MAYO.

Snap Diagnosis.—Never make a snap diagnosis. Hasty diagnoses, like hasty marriages, will be repented at leisure.

Care in the Use of Acetanilid.—Several instances of cyanosis have recently been reported in infants from dusting acetanilid over the umbilicus. When used in these cases it should be diluted.

Tympanites.—By far the best way of relieving patients of flatus is the ordinary soap-and-water enema, with half an ounce of castor oil and half an ounce of turpentine.—DR. LOCKWOOD, *The Clinical Journal*, June 8th.

Hyperidrosis.—

℞ Ichthyol..... 25 parts.
Water ..... 15 "
Lanolin. ..... 25 "

—UNNA.

Tooth Wash.—

℞ Thymol..... 1 part.
Benzoic acid..... 12 parts.
Tincture of eucalyptus..... 60 "
Alcohol ..... 400 "
M. S. A teaspoonful to be diluted with half a wineglassful of water.

—MUELLER.

Coryza.—

℞ Subnitrate of bismuth ..... ʒ i.
Powdered camphor..... gr. x.
Powdered boric acid..... gr. xxx.
Hydrochlorate of morphine ..... gr. i.
Hydrochlorate of cocaine..... gr. i.
Powdered benzoin ..... gr. xv.
A pinch to be snuffed up the nostrils.

—*Therapeutic Gazette.*

Chalybeate Purgatives.—Dr. C. E. Williams suggests the following preparations:

℞ Ferratin,
Sodium bicarbonate.....āā ʒ ij.
Powdered rhubarb..... ʒ iv.
Oil of fennel ..... gtt. xxx.
M. S. Dose, a teaspoonful.

℞ Ferratin..... ʒ iij.
Extract of aloes..... gr. xiv.
Compound extract of rhubarb..... gr. ix.
M. Divide into thirty tablets. S. One or two to be taken twice a day.

—*New York Medical Journal.*

Follicular Pharyngitis.—Apply by means of a cotton applicator for chronic follicular pharyngitis, postnasal catarrh, and atrophic rhinitis:

℞ Iodi pur..... gr. iij.
Potass. iodidi..... gr. v.
Acidi trichloracetic..... gr. vij.
Glycerini,
Aq. dest .....āā ℥ ss.
M. This can be used in varying strengths, according to the nature of the case.

—*Tri-State Medical Journal.*

Indications for Sulphur Baths.—Dr. Partes, of Herkulesbad, gives a detailed analysis of the external and internal therapeutics of sulphur waters, and lays down the following indications for their use: (1) In

chronic catarrh of the respiratory organs, dependent more upon venous hyperæmia and unaccompanied by any special complication. (2) Circulatory disturbances in the abdomen and the gastric and intestinal disorders evoked by them. (3) Various exudative processes in joints, muscles, and bones, defective callus formation after fractures, chronic periostitis, caries and necrosis, callous ulcers, tendo-vaginitis, and deficient mobility after various injuries in which surgical interference is not indicated. (4) Chronic phlebitis, periphlebitis, and inflammations of the skin. (5) Various forms of chronic rheumatism, gout, and rheumatic and nervous paralyses. (6) Metallic poisoning, especially by lead and mercury and its after-effects. (7) Syphilis, sciatica, and neuralgia. To test the value of the sulphur treatment careful histories should be taken and the cases observed for a long period. The good and bad results should be tabulated for purposes of comparison.

Nephritis.—Dr. D. Campbell Black, of Glasgow, has used, with excellent results in fourteen cases of acute or subacute Bright's disease, a mixture made as follows:

℞ Mercury bichloride	0.06–0.2 gm.
Potassium iodide	4–12 gm.
Syrup	30 gm.
Infusion gentian	210 gm.

Dose, three tablespoonfuls daily.

This mixture appeared to relieve the renal congestion, and to bring about the gradual disappearance of the albuminuria and other symptoms of Bright's disease. —*American Medico-Surgical Bulletin.*

Pruritus of the Genital Organs.—Professor Brocq recommends the following solution for pruritus of the scrotum:

℞ Phenic acid	ʒ v.
Glycerin	ʒ iiiss.
Proof spirit	ʒ vi.
Water	ʒ x.

From one to four tablespoonfuls in a glass of hot water to bathe the parts three or four times a day, and twice a day a wafer containing sulphate of quinine and bicarbonate of sodium is swallowed. In pruritus of the vulva, Professor Tarnier prescribes:

℞ Bichloride of mercury	gr. x.
Alcohol	ʒ ss.
Rose water	ʒ v.

After washing the region with soap and tepid water the patient passes rapidly a plug of cotton wadding, steeped in the solution, over the seat of the itching. The first sensation is that of burning, but this is quickly relieved by applications of cold water. The subsequent lotions become less and less painful, and the cure is generally rapid.

A Tonic Laxative.—

℞ Ext. spigelia,	
Ext. senna	āā ʒ ij.
Ext. cascara	ʒ i.
Tr. nux vomica	ʒ i.
Tr. cinchona comp	ʒ iv.
Syr. sarsaparilla comp	q.s. ad ʒ ij.

M. S. Teaspoonful t.i.d.

—S. Henry Davis.

Bronchial Asthma.—

℞ Sodii iodidi	4 parts.
Ammon. carb	4 "
Tinct. lobeliæ	8 "
Spir. chloroformi	15 "
Vini ipecac	4 "
Infus. senegæ	q.s. ad 180 "

M. S. Tablespoonful in water every three or four hours.

—Rainear, in *Codex Medicus.*

The First Hindrance to the successful treatment of diseases of infancy is the disinclination of mothers to nurse their own children.—J. Lewis Smith.

Catarrhal Jaundice in Children.—Dr. Comby (*La Médecine Moderne*, vol. iv., p. 182) recommends the following treatment: (1) Absolute milk diet. (2) Calomel, one-sixth grain, three times a day during one week. (3) An enema every morning with warm water. (4) On discontinuing the calomel, the following powder, three times a day:

℞ Sodium bicarbonate	gr. iiss.
Calcined magnesia	gr. iiss.
Benzo-naphthol	gr. iiss.
Powdered nux vomicæ	gr. ½

Uterine Inertia.—Strychnine sulphate, one-sixtieth of a grain, thrice daily, for six or eight weeks before parturition, is a serviceable prophylactic against uterine inertia during labor.—*Canada Lancet.*

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

CLINICAL STUDY OF FEVERS—COUNTY ASYLUMS REPORT—PHYSIOLOGICAL CONGRESS—LONDON HOSPITAL EXTENSION—TYPHOID AND BELFAST—PRINCE OF WALES—ROYAL ARMY MEDICAL CORPS—DEATHS OF DRS. WALLACE AND INKSON.

London, September 16, 1898.

In addition to the opportunities for clinical instruction mentioned in my last, the hospitals of the asylum board afford a splendid field for the study of infectious diseases. On reasonable conditions practitioners as well as students can attend these hospitals. The moderate fee of three guineas for three months and one guinea a month afterward is fixed. At the conclusion of the term one can have a certificate of attendance from the medical superintendent whose lectures and classes he has attended. The acquaintance with infectious diseases that can thus be obtained must be of the utmost value in practice, besides which a good insight into the management of fever hospitals may be obtained.

For studying small-pox, residence on board one of the ships used for these cases can be had for three or four weeks, at a charge of 12*s.* a week for apartments, board, and washing.

The annual report of the committee on asylums of the London county council shows some increase in the number of lunatics chargeable to the county and its parishes. Up to the end of March there were 1,284 lunatics residing in asylums not belonging to the council. The number treated in the county institutions reached 14,557, and the recoveries are reported to be 7.85 per cent. The pathologist, Dr. F. W. Mott, gives some interesting information in his report, especially as to general paralysis, including microscopic examinations of the brain of patients who died of this disease. He could generally find some history of syphilis. In ten cases of juvenile general paralysis he found undoubted signs of congenital syphilis in eight. He thinks syphilis the most important cause of organic disease of the brain in persons not much beyond middle life. It causes (*a*) specific arteritis, (*b*) meningitis, and (*c*) leads to the formation of gummatous growths.

The recent congress of physiologists at Cambridge was very successful. The chief object, as stated by the president, was to see actual experiments rather than receive verbal or pictorial demonstrations. Nearly one hundred communications were made. More than two hundred and thirty members attended, and sixteen foreign countries were represented. The exhibition of apparatus was scarcely so good as might have been

expected. The congress of zoölogy met the same week, numbering some four hundred members. The entertainments were shared between the two meetings, which made it easier for the hosts and more amusing for the guests.

The university conferred the honorary degree of doctor of science on Bowditch, Golgi, Kronecker, Marey, and Kühne. The vice-chancellor pronounced his Latin in the old English way, but the public orator used the continental pronunciation, and was, of course, more easily understood by foreign visitors. It is about time the English abandoned a method of pronouncing Latin which no other nation can understand, and which is destitute of all authority. Milton, who knew Latin as few now do, has set us a good example. It was agreed to hold the next meeting of the physiologists in Turin in 1901; president, Professor Mosso.

The London Hospital is again the scene of extension. A very important structural alteration is to be effected, in order to secure cross-ventilation for the two main wards. The patients will be removed to a temporary building, run up for the purpose. How this can be safely carrried out is a matter for consideration. I was talking lately with an architect who knows every foot of the building, and the conversation did not give me much satisfaction. I almost gathered that it would be better completely to rebuild than to spend nearly £100,000 on alterations and extensions. However, the decision has been taken and work begun. Four new operating-theatres are to be built at a cost of £13,000, and will no doubt be models and furnished with everything that scientific surgery suggests. In connection with the school there is to be a separate building, which will be largely devoted to Roentgen-ray work. As to the financial position of the hospital undertaking such heavy responsibilities, I may say that the press bazaar, about which I wrote some time ago, yielded a profit of £12,000, and at the quarterly court held last week it was cheering to hear that the donations amounted to £77,000 and the new annual subscriptions to £11,000. The hospital also expects £5,000 a year from the Prince of Wales' fund. This last amount is conditional on alterations, which will cost £80,000 to £90,000. It may be questioned whether the mere interest on the capital expended can be considered a good investment, especially on a security dependent on public opinion. But whether a good financial transaction or not, the alterations are needed, and will increase the usefulness as well as the prestige of the hospital. There is another source of revenue which will not do either, and may even react unfavorably. I mean the exaction of coppers from out-patients, on the pretence of partly paying for their drugs and dressings. It is an innovation which goes against the grain of almost every one, which a few years ago the staff would have opposed, but which has been carried by the committee under the influence of a zealous chairman, and is now on its trial.

The public health-committee of Belfast is making great efforts to control the outbreak of typhoid, but it looks as if it had been very negligent until lately. Typhoid is almost endemic in Belfast. The number of cases in August was seven hundred and ninety-four, but in the same month last year there were three hundred and four; yet the number of deaths from all zymotic diseases last month was twenty-five per cent. less. From the 5th inst. all drains are to be tested by inspectors before they are passed, and houses without backways are not to be built. It seems surprising that some such rules should not have been in force long ago, and their absence accounts for much of the insanitary condition of the city. Refuse destructors are also to be erected. The water is not beyond reproach, but does not appear to be the cause of the present outbreak. The new water supply is being pushed forward and will give an abundant and pure supply, but this will take time, and for the moment the insanitary state of the houses and buildings is most urgent.

The Prince of Wales' case has gone on very satisfactorily. With the apparatus to support the injured knee and one stick he can walk pretty well on level ground, and has now gone to Scotland for a change.

The royal army medical corps has done its work well in the Soudan, and this is generally recognized. Lieutenant-Colonel Sloggett, senior medical officer of the first brigade, was severely wounded in the breast in the battle before Omdurman, showing that the medical officers shared the dangers of the war in actual fighting, as was always the case.

Dr. John Wallace, consulting gynæcologist to the Liverpool Royal Infirmary, and professor of midwifery in the University College, died on the night of the 1st inst., the wedding-day of his son, Dr. Arthur J. Wallace, who is assistant professor. A large number of his colleagues attended the funeral on the 5th inst., showing the esteem in which the deceased was held. He was a pupil of Sir J. Simpson, and graduated at Edinburgh in 1861, settling at Liverpool soon afterward and devoting himself chiefly to obstetrics.

Surgeon-Major-General Inkson, M.D., died on the 9th inst., aged sixty-two years. He had medals for the Indian mutiny and the Bhootan expedition, as well as for Sweaborg.

OUR PARIS LETTER.

(From our Special Correspondent.)

LITTLE DOING IN PARIS PROFESSIONALLY—ACADEMIC YEAR SOON TO BEGIN—PROFESSORS AND PRACTITIONERS—HEALTH OF THE CITY—PROFESSOR LANCEREAUX AND TYPHOID FEVER—ITS TREATMENT BY INDICATIONS AND WAITING—PROFESSORS DIEULAFOY AND SEGOND, ETC.

PARIS, September 24, 1898.

THIS is the time of the year when there is least doing, especially in medicine. The doors of the École de Médecine are not yet open, though janitors and caretakers are cleaning up and getting everything in order for the commencement of the academic year. Those practitioners who have remained in town during the summer, either to take charge of the practices of confrères or on their own account, are now looking forward to a brief autumnal absence on the return of those whose practices they have been attending to. The majority of our professors and leading men are, however, still absent. The health of the city continues good in spite of the excessive heat that we have had. There are, of course, some cases of typhoid fever in the hospitals, as is customary in September, and of the prophylaxis and treatment of this disease Professor Lancereaux has made a long and interesting study, in which he arrives at the conclusion that the treatment of typhoid fever, to be efficacious, can only be systematic. He says very justly that in the treatment of typhoid fever, as in that of every general disease, the only rational procedure is to treat the indications. We must know how to do nothing. The best physician is the one that knows how to wait. Professor Lancereaux, in his large hospital and private experience, has found the following plan of treatment not only that which keeps down the mortality rate to the lowest possible degree, but also the one that most abridges the actual course of the disease in individual cases. During the first period he sees that the patient remains in a slight state of stupor, with a temperature of from 39° to 40° C. If this continues it is useless to intervene. In case of insomnia or intense cephalalgia, chloral, sulphonal, and opium may be given. If the

temperature rises beyond the degree named, if agitation supervenes, with or without delirium, two to three grams of antipyrin may be administered in the evening. Lukewarm baths at 28° C. and alcoholic ablutions are also very serviceable in this connection, cold baths being employed rather to calm the agitation than to lower the temperature.

Adynamia should be treated by alcoholic frictions, alcoholic drinks, tea, coffee, Hoffman's anodyne, or acetate of ammonia. If there is meteorism, which is always a bad sign, indicating a paralytic condition of the intestines, Professor Lancereaux prefers ice and cold injections to the old-fashioned remedy of a few drops of turpentine internally. Constipation he overcomes by mild saline purgatives, such as the sulphate of soda, magnesia, or mineral waters containing them, or by enemas of sulphate of soda and senna; abundant diarrhœa, by chalk, the subnitrate or the salicylates of bismuth, and charcoal. It is during the last two weeks that serious complications are most apt to occur, among the most dangerous being intestinal hemorrhages and peritonitis. In the former he advises ten drops of the perchloride of iron in an enema of one hundred and twenty grams of water, with ten drops of laudanum, or a suppository as follows: Extract of ratanhia, 1 gram; cacao butter, 3 grams. If the hemorrhages come from the smaller intestines, absolute rest should be imposed and hypodermic injections of ergotin given at once. It goes without saying that in case of peritonitis, absolute rest is a *sine qua non*, with opium in full doses, ten centigrams of thebaic extract a day, in pills of one centigram each every hour. Warm cataplasms on the stomach are preferable to ice. If the pain is excessive, a hypodermic injection of half a centigram of morphine may be given. It is during the period of the great oscillations of temperature, indicating resorption by the intestines and the fall of the "eschars," that intestinal antiseptics should be employed, one of the best being benzonaphthol. It is also during the last two weeks that grave complications may arise in the lungs, the kidneys, the liver, and the heart, which complications, like the fever itself, must be treated according to indications by cupping, ipecac, purgatives if necessary, diuretics, quinine, digitalis, and caffeine. Alcoholic patients are usually taken with delirium at the end of the disease, and with them chloral and morphine succeed best. The patient should have fresh air and clean surroundings, his bed being placed in a large, well-ventilated room, and his mouth, eyes, nose, ears, pharynx, and intestines irrigated daily. With these precautions and a good *régime* a person may, and ought to, go through typhoid fever without complications. Milk, taken every two hours in moderate quantities, is the best nourishment. Water containing some brandy and coffee may also be given. Eggs and light soups with a yellow of egg in them complete the diet. Water, especially Eau de Valz, as much as the patient likes is allowed. The above treatment of typhoid fever is one of the best, as it is one of the simplest, and is strictly in accordance with the indications, acting rather by tiding the disease over its course than by trying to check it. Germain Sée used to say, "*Respectez la fièvre*"—that is, "Let fever alone." It is only a symptom, after all, an effort of nature to throw off disease and reassert herself; but, of course, the distinguished professor had reference to only those cases in which fever was truly symptomatic—but these are very numerous.

Among our very eminent men who have already returned to Paris, I note Professor Dieulafoy, whom I met this morning dashing into the Champs Elysées behind two swift horses. Dieulafoy was practising the American habit of reading while being whirled along to his visits.

Professor Segond, the distinguished surgeon at the Salpêtrière Hospital, has been promoted to the rank of officer of the Legion of Honor. Professor Segond is well known in New York, not only professionally, but by his operative skill and writings. The promotion is a well-deserved compliment to our genial and popular confrère, who is a member of the supervising council of the Beneficiary Society, for the creation of a home for the invalids and others of the medical profession who have been obliged to abandon it. Segond's other good works are numberless.

"MOSQUITOES AND MALARIA."

To the Editor of the Medical Record.

Sir: In the Medical Record for July 30th there is an editorial on "Mosquitoes and Malaria." Possibly a statement of experience from this side of the world may throw light on the subject—or obscure it still more.

I am living in the interior of Asia Minor, on the great tableland midway between the Black Sea and the Mediterranean. The altitude of the city of Cesarea is thirty-five hundred feet above the sea. I am living five miles distant on the hills that overlook the plain, and we are five hundred feet higher. We have no mosquitoes here and we have malaria. Ten years ago this town (Talas) was considered entirely free from malaria; to-day that trouble is exceedingly common, but it has not been brought by mosquitoes. There has been no upturning of the earth, on even a small scale, for in this standstill country everything remains as it was in the days of the fathers. The soil is a thin covering over the rocks, except where there is no covering at all. The climate is dry, painfully so. There are no trees except in irrigated gardens, and as we look over the country now, there is absolutely not a green thing to be seen outside of these gardens. A part of my surgical practice consists in treating the wounds received in fights, to secure control of the small stream that supplies the irrigation.

I have made no examination of the blood for the plasmodia, but the classical symptoms and course of the disease leave no room for question of the diagnosis, and the effect of quinine and arsenic is additional evidence.

Whence comes this malaria?

William S. Dodd, M.D.

Talas, Asia Minor, August 30, 1898.

TYPHOID FEVER AND FLIES.

To the Editor of the Medical Record.

Sir: It is amazing to an old army man to see the pother that is made over the fly as a carrier of germs between the latrine and the cook-house in our military camps. Has none of these latter-day surgeons ever heard of the old-fashioned chloride of lime, and has one of them ever seen or heard of a fly that would visit a sink where the odor of chloride of lime pervaded the atmosphere?

I am told by a nurse who has just returned from Chickamauga, that when chloride of lime was asked for it was supplied in very limited quantities in little bottles, from which it had to be "poked out with a stick." When a cask of the chloride was asked for, the answer was, that it never came otherwise than in bottles.

Casks of chloride of lime containing one thousand pounds cost about $25. Ten or fifteen pounds, thrown into a latrine each day, will thoroughly disinfect the excreta, and at the same time banish every fly from the immediate vicinity.

Yours very truly,

A. H. S.

September 23, 1898.

APOMORPHINE AS AN EMETIC.

To the Editor of the Medical Record.

Sir: I am glad to see that Dr. Visanska has noticed my note on apomorphine. I am afraid that I did not make the article clear enough. One patient took two grains of morphine by mistake. I saw her an hour after. It is hardly probable that the morphine had left the stomach entirely in that time. The other case was almost similar to the first one, both as regards dose and length of time after it was taken. I think that it would be considered good practice to give an emetic under these circumstances. At that time the virtues of permanganate of potassium as an antidote to morphine were not so well known as at present, so I did not use it, but would now, of course, should I have a case. I think that apomorphine being an alkaloid of opium, and consequently related to morphine, is the reason why it would not act. Sulphate of zinc and ipecac are different bodies entirely, and perhaps have the power of exciting the vomit centre when it is deadened by opium, by stimulating it differently from apomorphine. It is difficult to produce emesis with any agent in opium poisoning, and for this reason I think it better to administer permanganate of potash as soon as possible in all such cases, because it acts as a chemical antidote, decomposing morphine. The apomorphine that I used was put up in tablet form by one of the most reliable houses in the world. For coughs, colds, and bronchitis I should think that the apomorphine treatment might be highly efficacious, but have had no experience with it in these complaints.

F. W. Van Dyke, M.D.

Grant's Pass, Oregon.

New Instruments.

A POCKET CHLOROFORM INHALER.

By J. Harris Pierpont, M.D.,

Pensacola, Fla.

The accompanying illustrations represent a pocket chloroform inhaler which I devised several years ago, and which I have since used with a great deal of satisfaction. The instrument is made of steel wire, nickeled. It is placed in an antiseptic solution before being opened. By gently pressing the upright pieces apart, they are released from the small points that hold them in place when closed, and the spring throws the side pieces into a horizontal position; two little rings which play freely on the top circle are slipped over the two projections at the upper end of the side pieces, and the frame is made steady. Then a towel is folded until its width corresponds to the height of the instrument when open, and is wrapped around the cone, one or two pins holding it in place. By unslipping these small rings and pressing the side pieces toward each other and the spiral spring downward, the instrument is closed.

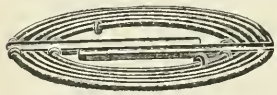

Fig. 1.—Pierpont's Chloroform Inhaler, closed.

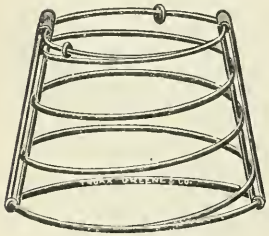

Fig. 2.—Open.

The advantages of this inhaler are that it can be carried in the coat pocket with as much ease as the hypodermic case is in the vest pocket; it allows the free entrance of air, and it permits economy in the use of chloroform, as the inhaler can be reversed when the chloroform has reached a point in the inhaler below the current of air; it cannot be made to collapse by an unruly patient, as the improvised paper ones too often can; and, finally, it may save much inconvenience and delay. It is not at all unusual to find a house without a stiff towel, or even a piece of paper to stiffen one.

I have frequently assisted in capital operations when less than an ounce of chloroform was used.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending October 1, 1898:

	Cases.	Deaths.
Tuberculosis	172	135
Typhoid fever	147	30
Scarlet fever	96	4
Measles	39	4
Diphtheria	113	15
Cerebro-spinal meningitis	0	7
Laryngeal diphtheria (croup)	8	7
Chicken-pox	9	0

Malarial Fever and Sea Voyage.—A sea voyage is unfavorable unless the patient is fully convalescent. H. R. H. Prince Henry of Battenberg died at sea; so did Sir William Maxwell. It is a common thing for men to come on board at Beira incompletely convalescent and die before they reach Natal. In many cases men completely convalescent succumb to the terrible black-water fever after being a few hours at sea. What the cause is, it is difficult to say. Possibly the motion of the vessel acting through the nerve centres on the vasomotor nerves of the liver may disturb its glycogenic functions, or a chill may be the cause, or it may be in the atmosphere itself. Whatever it may be, however, it is a law of malaria which it is well to bear in mind when advising a patient to take the voyage to Europe. It is too frequently the voyage from which none return.—Dr. William Forbes-Leslie, *Pacific Medical Journal.*

Artificial Legs and Arms were in use in Egypt as early as B.C. 700. They were made by the priests, who were the physicians of those early times.

A Tendency to Perspire on the slightest exertion is not infrequently coincident with habitual chilliness, and both are indicative of want of tone.

Wines and Gout.—The gout-inducing properties of certain wines are not due to their acidity. Probably these owe their action to the effect they exercise on the metabolism of the liver.—Luff.

William Harvey, Physician, of London, who, in 1616, declared that "perpetual movement of the blood in a circle is caused by the beat of the heart," is referred to by Aubrey, an English writer, in his "Brief Lives," as follows: "He was not tall; but of the lowest stature, round faced, olivaster complexion; little eie, round, very black, full of spirit; his haire was black as a raven, but quite white twenty yeares before he dyed. I have heard him say, that after his booke of the Circulation of the Blood came out, he fell mightily in his practice, and that 'twas beleeved by

the vulgar that he was crack brained; and all the physicians were against his opinion, and envyed him; many wrote against him. With much adoe at last, in about twenty or thirty yeares time, it was recieved in all the Universities in the world; and, as Mr. Hobbes sayes in his book 'De Corpore,' he is the only man, perhaps, that ever lived to see his owne doctrine established in his lifetime. He was much and often troubled with the gowte, and his way of cure was thus: he would then sitt with his legges bare, if it were frost, on the leads of Cockaine house, putt them into a payle of water, till he was almost dead with cold, and betake himselfe to his stove, and so 'twas gonne. He was hott-headed, and his thoughts working would many times keepe him from sleepinge; he told me that then his way was to rise out of his bed and walke about his chamber in his shirt till he was pretty coole, *i.e.*, till he began to have a horror, and then returne to bed, and sleepe very comfortably."

Some of the Causes of Nervous Disturbances.—But of all the cursed and damnable causes of pelvic disease and neurasthenia, the horrible means to which women resort to prevent themselves from having children must be considered. The thousand and one methods of preventing conception, the mental torture that they continually undergo for fear they will conceive, are frightful to contemplate. By and by they are perchance just as wild and crazy to have children, when all of the delicate functions participating in conception and motherhood have been so impaired, and the pelvic organs so destroyed or diseased, that conception is impossible. Then, too, there are the damnable methods of procuring abortion. I heard an explanation only recently why extra-uterine pregnancy was so common, and it was this: that the fœtus, even in its smallest form, had become shy and hid away up in the Fallopian tubes, to escape having its eyes punched out with crochet needles and septic probes of "quack" doctors.—Dr. Joseph Eastman, *Journal of the American Medical Association*, September 10, 1898.

Cocaine Habit.—A druggist in the cocaine district in Louisville, to avoid being disturbed at night, has rigged up a nickel-in-the-slot machine, it is said, which supplies a pinch of the drug to the fiends.—*Merck's Report*, August.

A Rhode Island Appetite.—In an article on "The Needs of our State Society," the editor of the *Atlantic Medical Weekly* says that among other desiderata "there should be a better discussion of papers and greater activity; there should not be so many with a reputation for wisdom gained by silence—like the young physician who saved thousands of lives by an early death. For aught we know, there may be hidden germs of future greatness in scores of our members who never open their mouths in meeting, save to eat. We need more brain work and less appetite; our meetings should not be attended by fifty and our collations by a hundred, and the subjects of discussion should be of scientific interest and not of lobster cutlets on the menu."

The Body-Physician to the Pope.—The Rome correspondent of *The Lancet* gives the following sketch of the Pope's private physician: "Giuseppe Lapponi studied medicine at the Bologna school, where he distinguished himself in the classes of Professor Concato and Professor Murri, the latter a pathologist and surgeon of high repute, and well known to the professional world as a contributor to *The Lancet*. He graduated as doctor in medicine in 1875, and after for a brief interval assisting the professor of pathological anatomy in Bologna, Dr. Tartuffi, he went into general practice, first at Capalone, in Tuscany, and next at Pollenza, near Macerata. There he remained till 1885, recommending himself by his skill, his fertility in resource, and his self-reliance, while contributing with much acceptance to medical periodicals, Italian and French. In 1888 he had transferred his *penates* and practice to Osimo, when one day he received from the Vatican an invitation to become the Pope's body-physician, the holder of that post, who had also held it in the latter years of Pio Nono, being Dr. Alessandro Ceccarelli, an excellent practitioner, who had won his fame as a surgeon and was by this time well stricken in years. Dr. Lapponi's reply was in the affirmative and he accordingly repaired to Rome, at first as assistant to Ceccarelli, who required him to pay a weekly visit to the Vatican, while still keeping a *pied à terre* at Osimo. This arrangement did not last long. Ceccarelli died and Dr. Lapponi succeeded him as physician-in-chief to His Holiness. In this position he speedily won the entire confidence of his august patient, who placed the whole management of his health unreservedly in his hands and came to consult him—as Pio Nono used to consult Ceccarelli—even on matters but remotely connected with the healing art. As years rolled by and His Holiness began more and more to feel their weight, Dr. Lapponi's attendance at the Vatican became gradually more assiduous, till of late his ordinary visits are never fewer than thrice weekly, sometimes every day, at others (when occasion requires) as often as three or four times in the twenty-four hours."

Needless Noise.—If by replacing steam with electricity on the elevated roads the nerve-destroying squeakings and gratings are going to be done away with, it will be no small blessing. How would it be for the management to order a little lubricating done in the mean time?

Some Rules for Becoming a Great Physician.—Give your opinion on everything as if you were an adept in the art, whether you understand the matter or not. Don't continue your studies, but all the more find fault with learning, journals, and bibliomania. Mention with pride the important observations and discoveries you have made to your friends often until they believe it. Be a friend of the superficial colleague, of the ministers, the druggists, barbers, and the midwives; also of the merchant, if he can be of use in attaining your purpose. Be religious and a strict observer of ecclesiastic tenets, if you can thereby add to your reputation and increase your income.—*Gruner's Almanach*, 1782.

Students are warned by Professor Orth against mere routine in their work. They should keep before them the spirit of universal medicine as an art, and educate the glance, so that the connection of the individual parts, the unity of the whole, should not be lost sight of. Above all, observation, inductive thinking, the capacity for independent research, the idea of hygiene and prophylaxis, are to be studied before commencing practice.

The Symptoms.—Fleet Surgeon: "There doesn't seem much wrong with you, my man. What's the matter?" Jack: "Well, sir, it's like this, sir. I eats well an' I drinks well an' I sleeps well, but when I sees a job of work—there, I'm all of a tremble."—*Punch.*

Internal Revenue Stamps will add to the supposed danger from the licking preliminary to the sticking process, brought up a few years ago in relation to postage stamps. The mental wear and tear of remembering to put them on at all, however, are a much more serious matter than that of any possible infection.

Headless Cigars are recommended, on the ground that they do away with the danger from the pasted end, with its possibilities for infection. Many factory operators are said to have the unhygienic and offensive habit of moistening the fingers in the mouth before making the end twist. The discovery by the San Francisco board of health of tubercle bacilli in cigars emphasizes the possible dangers.

The Communion Cup is again under discussion as a possible disseminator of germs. The question has come up in a part of California much frequented by tuberculous subjects from the East, and now even the rector of one church has raised his voice against the common cup.

The Monkey or the Penny?—In celebrating Yom Kippur a man gave a penny to the Zoo monkey named John L. Sullivan, who proceeded to swallow the same. The park veterinary who is in charge is reported in an evening paper as saying that he has "strong hopes of its recovery."

Members of the British Medical Protection Society can have their overdue accounts collected by the society. About fifty per cent. of outstanding bills, owing the members and intrusted to the society, amounting to over $100,000, have been collected in the last few years.

Care of the Water Supply in the Army of Cyrus.—A correspondent sends us the following extract from Rawlinson's translation of Herodotus, book i., § 188, published by D. Appleton & Co., New York, 1871:

"The great king [Cyrus, *circa* 550 B.C.], when he goes to the wars, is always supplied with provisions carefully prepared at home, and with cattle of his own. Water, too, from the river Choaspes, which flows by Susa, is taken with him for his drink, as that is the only water which the kings of Persia taste. Wherever he travels he is attended by a number of four-wheeled cars drawn by mules, in which the Choaspes water, ready boiled for use and stored in flagons of silver, is moved with him from place to place."

Why Teeth Decay.—The question to what extent the alkaline-earth salts in drinking-water affect the decay of teeth has of late been studied in several quarters. Statistics have been collected by Rese in several localities in Bavaria and by Foerberg in Sweden. These have revealed the interesting fact that the extent of decaying teeth bears a definite relation to the hardness of the water—in other words, to the quantity of calcium and magnesium salts in the earth through which the water passes. The harder the water the better the teeth; the smaller the quantity of these salts the greater the decay of the teeth.—*Südd. Apoth. Ztg.*

The Great Plague.—The following incident of the great plague of London is taken from an old chapbook: "During the plague carts were sent round the city each night, the drivers of which rang a bell, as intimation for every house to bring out its dead. The bodies were then thrown promiscuously into the cart, conveyed to the suburbs, and buried. A piper had his constant stand at the bottom of Holborn, near St. Andrew's Church. He became well known about the neighborhood. A certain gentleman, who never failed in his generosity to the piper, was surprised on passing one day, as usual, to miss him from his accustomed place. Upon inquiry he found that the poor man had been taken ill in consequence of a very singular accident. On the joyful occasion of the arrival of one of his countrymen from the Highlands, the piper had, in fact, made too free with the contents of the keg. These so overpowered his faculties that he stretched himself out upon the steps of the church and fell fast asleep. He was found in this situation when the dead cart went its rounds, and the carter, supposing that the man was dead, made no scruple to put his fork under the piper's belt and hoisted him into his vehicle, that our Scottish musician should share the usual brief ceremonies of interment. The piper's faithful dog protested against this seizure of his master, jumped into the cart after him, to the no small annoyance of the men, whom he would not suffer to come near the body. He further took upon himself the office of chief mourner by setting up the most lamentable howling as they passed along. The streets and roads by which they had to go being very rough, the jolting of the cart, added to the howling of the dog, had soon the effect of waking our drunken musician from his trance. It was dark, and the piper when he first recovered himself could form no idea either of his numerous companions or of his conductors. Instinctively, however, he felt for his pipes, and, playing up a merry Scotch tune, terrified in no small measure the carters, who fancied they had got a legion of ghosts in their conveyance. A little time, however, put all to rights. Lights were procured, and it turned out that the noisy corpse was the well-known living piper, who was joyfully released from his awful and perilous situation. The poor man fell badly ill after his unpleasant excursion, and was relieved during his malady by his former benefactor, who, to perpetuate the remembrance of so wonderful an escape, resolved as soon as his patient recovered to employ a sculptor to execute him in stone. The statue represents a bagpiper in a sitting posture, playing on his pipes."

Changes in the Viscera Produced by the Seventy-Two-Hours' Bicycle Ride in Paris.—At a meeting of the Academy of Science, held on August 29th, M. Regnault and M. Bianchi read a paper, in which they said that on the occasion of the recent bicycle race, which lasted for seventy-two hours, they had examined the winner, the man who came in second, and the man who came in fourth. They examined them before the race, directly after it, and during the following three days. From this examination they have drawn the following conclusions: "The riders have lost weight, and the size of the abdominal viscera—such as the spleen, the liver, and the stomach—have diminished. The subcutaneous fat has also disappeared. These changes are due to the small amount of food taken during the race, to the heat, to the want of sleep, and to the mental strain. The thoracic viscera—namely, the heart and lungs—have hardly shrunk at all, owing to the extra flow of blood through them produced by the hard work. The continual movement of the legs and of the pelvis, together with the bending forward of the body, has pushed up all the abdominal organs, and these in their turn have pushed up the heart and the lungs. The liver, as being most dense, has markedly pushed up the right lung, and the pyloric end of the stomach has been pushed up so that the organ assumes a crescent shape, and thus food stays in it for a much longer time than usual. These displacements are very marked. The abdominal organs are raised about four centimetres, and the heart is pushed up toward the neck from two to five centimetres." These facts form an explanation of the therapeutic use of the bicycle in various ptoses, pleurisy, and too straight a position of the stomach. The heart and other viscera of these three riders were extremely powerful, and so they were able to finish their ride; the other riders, who had somewhat weaker hearts, left off quite early in the race. It would therefore be advisable for race riders to be examined by a medical man, to see whether they are fit to stand the strain of long-distance rides. —*The Lancet.*

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Original Articles.

THE FUNCTIONAL NEUROSES, WITH SPECIAL REFERENCE TO NEURASTHENIA—ITS PATHOLOGY AND TREATMENT.[1]

BY A. D. ROCKWELL, M.D.,

NEW YORK.

IN no class of diseases, perhaps, are stereotyped methods of treatment—either medicinal, electrical, or hygienic—of less avail than in the functional neuroses. Every practitioner is liable to fall into certain therapeutic ruts. No one, for example, doubts the efficacy of the rest cure in many neurasthenic cases, nor can one doubt its inefficient and even injurious effects in many other cases. Neither rest, nor active exercise, nor fasting, nor stuffing can be indiscriminately prescribed, with any hope of hitting the mark except in occasional cases.

It is difficult to tell where the nervous condition ends and the toxic begins; to discriminate between cell exhaustion and the irritability that arises from the imperfectly transformed products of digestion. Close observation is required, and a careful study, not only of the present condition of the patient but of his past, his method of life, and his heredity. Various conditions, again, that we are accustomed to classify as nervous do not in reality come under that head at all, are not due to pathologic changes beginning in the nervous tissues. Hemiplegia, cerebral softening, even chorea and epilepsy in many instances do not belong to the true neuroses. The causes are mostly arterial causes. In hemiplegia, especially, it is a question of arteries, and in many choreic and epileptic cases in which the parents have had hemiplegia there is necessarily no nervous diathesis to be taken into consideration. The true unadulterated type of nervous disease is found in those conditions in which there are no arterial causes, and in which the arterial symptoms are of secondary importance and consecutive to nerve derangement.

Under this head we must class neurasthenia, in my estimation the most important of the functional neuroses, and to which I purpose mostly to confine my remarks. It is coming more and more to be understood that in dealing with this hydra-headed condition we are dealing with a derangement of cellular nutrition as positive as, and in the majority of cases perhaps more persistent than, when brought about by microbic agencies.

Neurasthenia in its more frequent aspect is simply fatigue—normal fatigue, if you will, carried to excess. Electro-physiologic experiment teaches that if either directly or indirectly we electrically excite a spinal ganglion we get a shrinkage of the nerve cells which continues for many hours, and persistent stimulation may utterly destroy the life of the cell. It is at least rational to suppose that a similar pathologic change in the nerve cell takes place under the stimulation of the varied activities of life, exhaustive mental efforts, and especially the stress and strain of abnormal emotion and early sexual abuse. Normal fatigue in these directions permits a ready recuperation; pathologic fatigue, however, does not permit a ready return of nerve and muscular tone to the normal level, and, when repeated and excessive, results in permanent exhaustion of the nerve cell. "A man is as old as his arteries," and, barring accidents, it is almost impossible for one to die whose arteries are structurally sound. He who suffers from arterial degeneration may, and usually does, live comfortably and dies suddenly, while the neurasthenic with his healthy arteries lives most uncomfortably and dies slowly. If it were not for one fortunate favoring factor, it might be a question as to the choice of these two conditions. I refer to the incurability of the one and the curability of the other.

Notwithstanding its factor of pathologic fatigue, neurasthenia does not necessarily mean mental exhaustion, for many neurasthenics are capable of sustained intellectual effort. It does not necessarily mean physical exhaustion, for many neurasthenics are equal to sustained physical exertion. It is, indeed, by no means rare to meet neurasthenics who can without distress perform unusual work of brain and body. This seeming paradox has greatly perplexed students of this disease, and more than any other fact of observation has led them to doubt the existence of any such disease as neurasthenia. That one nervously exhausted can still be equal to severe mental exertion seems to be a contradiction of terms. If, however, we take into account the reserve forces of the body, we find a partial solution of the problem.

The neurasthenic has, to be sure, but a small amount of reserve nerve force as compared with the perfectly strong and healthy man, but what reserve force there is is expended rapidly and vigorously, and results in a more effective and correspondingly larger amount of work. Profound exhaustion may result, but in the same ratio as the expenditure of force is more rapid in the weak than in the strong for the production of the same degree of profound exhaustion, so in the same ratio food and repose renew more rapidly this temporary loss of force in the neurasthenic than in the strong and healthy. This capacity for doing effective and original work on a small amount of nervous reserve force I have in my own experience seen illustrated time and time again, and the history of literature abounds in evidence that much of its best and most original production has been the work of neurasthenics. But if neurasthenia does not always mean mental and physical exhaustion, it does invariably mean a more or less profound perversion or disturbance of the *morale*, with marked psychical and sensory symptoms.

Now in these cases the question is often asked, Does electricity do good, and if so, how? The neurasthenic appears, as a rule, to be well nourished. He frequently gains weight; his color is good and his appetite often first-class. But is he well nourished? How can he be well nourished with a nervous system so erratic and unstable that the slightest influence, a casual glance even, is sufficient so to disturb the vasomotor equilibrium as to cause a general nervous disturbance, as manifested in the flushed face, perspiring hands, even dizziness and perverted vision? The neu-

[1] Read before the American Electro-Therapeutic Association, September 15, 1898.

rasthenic is not only not well nourished, in the true sense of perfect nutrition, but there is a good reason to believe that he may suffer from toxic influences, which may be both a cause and a result of the undoubted malnutrition of the nerve cells. If there is a disease more aggravating and humiliating to its victim, I have never encountered it. The symptoms are, as a rule, entirely subjective, and to those whose good opinion and sympathy the neurasthenic most covets he is too often a living lie; and in my own experience, more than one suicide has resulted, not alone because of the suffering from the disease proper, but because of the utter isolation and hopelessness entailed. The first necessary step in the process of relieving a neurasthenic is to gain his confidence, and this you can do only by recognizing his infirmities and treating them with consideration, sympathy, and respect. There is no stereotyped method of treatment. We cannot well get along without judicious medication. The weak and erratic nervous system must be temporarily sustained and soothed, while the patient is profiting by the slower process of hygiene and electricity. On some one of the various bromides, including the bromide of zinc, either alone or in combination with belladonna, cannabis indica, etc., according to individual idiosyncrasies, it has been my habit to rely more confidently than upon most other combinations. But it is to electricity that I turn for the best results that therapeutics is capable of yielding in this tedious and distressing neurosis. If it be true that neurasthenia is a disease of exhaustion, of impaired nutrition, then, theoretically, electricity ought to be of service, since as an aid to nutrition its position is sufficiently assured; and practical experience certainly teaches one that electrization is altogether the most powerful means at our command in the final restoration of perverted cellular nutrition. If I were speaking to men practically unfamiliar with electro-therapeutics, it might be expected that I would specially indicate the kind of current and the methods of application, but those who are familiar with the subject know well that this is not altogether practicable. Our experience teaches us that there is no other remedy to the effects of which there is a more varying degree of susceptibility, and especially with neurasthenics a well-kept record of cases will show a most remarkable variety of conditions. Consider, for example, the difference in susceptibility to the galvanic current. There are cases in which anything over ten or fifteen milliamperes on any part of the body seems to provoke irritability, while one-half this strength applied to the head becomes decidedly disturbing. On the other hand, there are neurasthenics whose very disease seems to make them equal to the endurance of unusual strength of current, which it is found necessary to decrease as improvement progresses.

These remarks apply to the other manifestations of electricity. It is, perhaps, hardly necessary for me to call attention to the fact that it is impossible always to predict whether it is a faradic or galvanic, static or sinusoidal form of current that will give the greatest satisfaction and the best results. The patient comes to know sometimes, far better than his physician, what agrees and what does not agree with him. If we are wise we will in these cases, like astute political leaders who "keep in the van by recognizing where the people are dimly minded to run," retain the confidence and direction of our patients by quickly divining their well-founded preferences. Among the occasional symptoms associated with the malnutrition of neurasthenia are disturbances of circulation. This instability of the circulation is more especially noticeable in the extremities; they become hot, then cold. I have seen cases in which the hands, feet, and face under emotional causes changed within a few minutes from normal to marked subnormal heat. This sudden fluctuation results in internal congestion. The kidneys especially suffer, and I have in my records a number of cases in which albumin and casts have appeared, consecutive to long-standing neurasthenia of this type. I cannot speak too highly of the action of static electricity in these conditions. The circulation is equalized, and equally as a tonic and sedative its good effects are not slow in manifesting themselves. In connection with prolonged applications of the induction current of high tension over the kidneys, I have observed in several instances the disappearance from the urine of both albumin and casts. Static electricity, together with other forms of electrization, is more than a mere tonic or sedative. They act as eliminators of poisonous principles.

Now I believe that there are forms of neurasthenia and insane conditions in which toxins may enter almost entirely as causative factors. Through poisons circulating in the blood the neurons become affected, and whether the disease is organic or functional is here, as in other conditions, the important question.

Neurasthenia is in the majority of cases functional and generally curable, while insanity is probably in the majority of cases organic, and therefore incurable. But insanity is sometimes curable, which suggests a purely functional derangement of the nerve cells, while neurasthenia may be incurable because of a chronic organic condition brought about by toxic causes. If this be true, it emphasizes the importance of early treatment.

Not only does electricity directly influence nervous action through the vasomotor system, but it excites vital function by acting directly on the cell itself and on the protoplasm, thus hastening nutritive changes and cellular activity; excretion is stimulated and poisons are eliminated. In further explanation of the *rationale* of the therapeutic action of electricity, the discovery and suggestions of M. Edouard Branly, professor of physics in the Catholic Institute of Paris, if not conclusive, are at least interesting.[1] As I have up to this time seen no English account of this discovery in physics, I may be permitted briefly to allude to it and to its possible relation to the pathology and treatment of the functional neuroses. Through no possible interpretation could it have interest for us on the old theory of the anatomical continuity of the nervous system, but in the light of the discovery of the neuron, by which we find the nerve tissue made up of distinct and disconnected elements, it immediately becomes worthy of consideration.

Briefly stated, M. Branly discovered that if a tube of iron filings be placed in a weak galvanic circuit, the meter fails to register, thus showing that the substance is practically non-conducting. If, however, the tube is previously placed in a solenoid through which course currents of high frequency, or is simply subjected to the influence of static electricity or of the cathodic ray, the tube immediately becomes a conductor and the current passes. Subject the tube with its contents, however, to some sudden shock, as that of a static spark or blow, and its conductibility is immediately annihilated.

Various theoretical considerations, unnecessary to discuss here, are advanced in explanation of these phenomena. They may or may not be the true solution of this mysterious happening, but we certainly see a similarity between the individual iron filings of the tube and the individual neurons of the nerve substance, and a striking analogy between them in their relation to electric energy and shock, which may throw light not only on the physiology but on the cause and cure of the functional neuroses. It is well known that

[1] See I.'Actualite Médicale, December 15, 1897; Archives d'Électricité Médicale, Février, 1898; Revue Internationale d'Électro-thérapie, March, April, and May, 1898.

we can hasten the recovery of hysterical paralysis by placing the patients in an electro-static field, or subjecting them to the influence of currents of high frequency coursing through a solenoid, and by other forms of electric energy. The analogy between the two—the tube of iron filings and the nerve structure—may be carried still further, since the restored nervous conductibility in a case of paralysis of hysterical origin may be instantly annihilated, as is the electric conductibility in the tube of iron filings by sudden shocks.

"Does not this help to make clear to us the characteristic causation of hysterical paralyses? Does it not reveal the traumatism which produces them? Moral or physical traumatism, emotional shock or railway accident, psychical influence or injury, brutal application of physical agents, heat, cold, light, etc.—in fact, all violent excitation is capable of producing loss of conductibility of the nerve current proper, in or through the neurons, as it can restore it when abolished."

In certain cases of hysterical paralysis patients who have been confined to bed for months or years have suddenly regained power when some violent neuromotor excitation, such, for example, as a sudden conflagration, has overcome the non-conductibility of the neuron.[1] Whether or no this discovery of M. Branly is sufficient to furnish the key, as its enthusiastic advocates suggest, to the cause and cure of the functional neuroses, it at least opens up a novel and interesting field of research.

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A CASE OF SUPPURATING (STREPTOCOCCUS) PERITONITIS.

By WILLIAM R. PRYOR, M.D.,

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There are three chief methods of treating streptococcus infection occurring post partum: the old one, by strychnine, alcohol, etc., which has lately been advocated; the treatment by antistreptococcus serum; and the strictly surgical treatment. Inasmuch as the matter is under consideration by a committee of the American Gynecological Society, an elaborate report may be expected in about a year; and as the surgical treatment of this form of infection will receive some attention at the hands of the committee, in all probability, it is most desirable that all cases of infection of the uterus and pelvic lymphatics by the streptococcus pyogenes be carefully reported. And while the inquiry is intended to deal chiefly with such infections occurring post partum, it is advisable to report all cases occurring after abortion or after operation. To stimulate others to make these reports, I publish the following case. Before proceeding to make a statement of X. Y——'s disease, however, I wish to request that careful notes be kept by your readers of any cases of streptococcus pelvic infection.

X. Y——, aged fifteen years, first menstruated at twelve and one-half years of age; her periods occurred every four weeks, lasted ten days, and she used thirty napkins during each period—rather generous bleeding, considering her age. She never had pain, and the blood was always fluid, never clotted. She never went to bed during her periods and never took medicines. In infancy she was both nursed and bottle-fed. She had had measles and whooping-cough, but never any lung disease. She was considered a strong child, took plenty of exercise, danced, and rode the bicycle—the latter to her ruin; but that is another story.

February 28, 1898, she menstruated. A few days later she had her first and only intercourse. She did not menstruate in March, April, May, or June.

On June 13th, she being four and one half months pregnant, an abortion was done. Apparently the means used consisted in inserting a long rubber catheter, wrapped with cotton or gauze, into the uterus. Four hours later she began to bleed, and at night her pains began. Under instructions from the midwife the patient removed the tube. The next morning the midwife removed the cotton (?). June 14th, at 11:30, the fœtus escaped and the midwife pulled out the placenta. Severe bleeding followed, but the pains stopped. On the 17th the bleeding stopped.

From the 14th to the 17th large doses of quinine had been given. During the night of June 18th she had a severe chill, and was blistered by hot applications to the belly. On the 19th "they tried to pull out something that had been left in the womb," but could not get it. This hurt the child a good deal and made her scream.

During the night of June 19th she was given chloroform and was operated upon by a doctor, who told her sister that he had removed a mass from the uterus. During the night she had a severe chill, and on the 20th she went home.

June 21st, at 10 A.M., I saw her for the first time. I found a tall, slender girl, very pale. She bore the expression of one stupid and indifferent (she was naturally bright and vivacious). Respirations shallow; pulse, 122; temperature (rectal), 102.6° F. Sordes on teeth; tongue dry, brown, and fissured. Belly drum-like and very sensitive. She vomited everything, and made silly and irrelevant remarks. Upon examination I find the vagina bathed in a yellowish discharge; there was no odor other than that of unclean genitals. The uterus was high up and fixed; no fluctuation could be felt anywhere and no inflammatory masses were detected. The corpus uteri could not be made out, it being covered by tympanitic intestines. The vaginal walls were not in apposition, but the vaginal tube was "canalized." The heart and lungs were normal. She was given a high saline enema and prepared for operation. Strychnine, gr. $\frac{1}{30}$, at noon.

Operation, June 21st, 2 P.M. Chloroform narcosis. Into the median cephalic vein I injected two pints of decinormal salt solution before beginning the operation.

Technique. Instruments were boiled for one-half hour in a five-per-cent. sodium-carbonate solution. Dressings steam sterilized, one hour at 220° F. Irrigating fluid, saturated solution of boric acid. Specimen jars boiled twenty minutes in plain water.

Personal. Soap and water. Hands and arms treated ten minutes in chloride of calcium and carbonate of sodium. Nails scraped; scrubbed for five minutes in a two-per-cent. solution of lysol; rinsed in Thiersch solution.

Uterus curetted and specimen at once placed in a sterile bottle with a glass stopper (specimen No. 1). The material removed from the uterus was broken-down decidua and shreds of uterine muscle. The organ was necrotic. I irrigated the uterus with a boric-acid solution. The bleeding was at first free but soon ceased. I packed the uterus full of gauze (iodoform) and opened the posterior cul-de-sac. At once there escaped large quantities of stinking pus. I did not measure it, but estimate the quantity to have been twelve ounces; with the pus were masses of lymph. With a piece of sterile plain gauze some pus was secured and placed in another glass-stoppered bottle (specimen No. 2). The intestines floated free in the pus. They were purple in hue, devoid of endothelium, and studded with lymph spots. They were not adherent. The broad ligaments were tense and swollen but contained no pus. The ovaries were attached

[1] M. Guimbail: Revue Internationale d'Électro-thérapie, March, April, and May, 1898.

at the pelvic brim, and were as large as eggs (acute œdematous ovaritis). The Fallopian tubes were perfectly free and the fimbriæ not occluded. I had to deal with a case of suppurative peritonitis. How far up the peritoneal sac the inflammation extended I did not, and do not, know. At no point could I see any evidence of isolation of the inflammatory process.

I shall not discuss the advisability of the method of treatment employed in this case. It is published for the purpose of putting on record a case of streptococcus infection occurring in a uterus mechanically aborted at four and one-half months, which was treated as I shall describe, the patient recovering.

Report of the Presbyterian Hospital bacteriological department on the two specimens. "Plates made from the dressing in the larger jar [specimen No. 2, intraperitoneal pus], gave an abundant growth of bacilli with a small number of colonies of streptococci. The bacilli showed the growth to be characteristic of bacilli coli communis. They produced coagulation in milk, gas, and indol. They did not liquefy gelatin. Under the microscope they were non-mobile, rather short and thick, and with rounded ends. Plates made from the gauze in the smaller jar [specimen No. 1, a mass of decidua and clot from the inside of the uterus, removed by curette before the cul-de-sac was opened] showed an almost pure growth of streptococci. The streptococci were isolated in absolutely pure culture. On the surface of agar-agar and blood serum the growth consisted of minute grayish colonies, discrete but close together, except where the surface of the culture medium was very moist. In these situations a very thin whitish layer was produced. In gelatin the growth was rather scant and did not produce liquefaction. In bouillon after twenty-four hours the liquid remained clear, with a scant whitish precipitate at the bottom of the tube. Under the microscope the growths on solid media showed rather small cocci in pairs, and short chains of four, five, and six cocci. The bouillon cultures produced chains of considerable length, up to twenty and twenty-five cocci. The tendency to form long chains is an indication of less virulence than when only short chains are formed. July 15, 1898, a guinea-pig was inoculated with a twenty-four-hours old culture in bouillon. The ear was scratched and abraded with a sterilized needle, and a drop of the culture was thoroughly rubbed into the wounded surface. Some redness and swelling developed about the wound, extending a short distance into the tissues about the ear. On the third day the animal was rather quiet and not inclined to eat, but appeared better on the following day and rapidly recovered. Inoculation from animal to animal would undoubtedly have increased the virulence of the cocci."

We have, then, produced in this case pure streptococcus infection of the inside of the uterus and streptococcus mixed with colon bacillus infection in the pelvic peritoneum. My patient's pulse twelve hours after the operation was 95; temperature, 100° F. In the six hours from midnight to 6 A.M., the vulval pads were soaked through seven times with muddy serum. The next day there were involuntary watery movements (common in streptococcus cases). At the end of the first day (after operation) the pulse was 98; temperature, 101.4° F. Thirty-six hours after operation fourteen pads had been used. Pulse, 88; temperature, 100.4° F. She was receiving $\frac{1}{100}$ gr. of strychnine hypodermically every three hours. I began to spray the nose for sordes. She got a fair amount of sleep the second night. At the time of operating I had packed the uterus with iodoform gauze, and had inserted into the pelvis nine pieces of gauze each four inches wide by one yard long—nine yards of gauze four inches wide.

June 22d, 6:30 P.M. Pulse, 100; temperature, 102° F. I removed the gauze from the uterus and washed the uterus out with a saturated solution of boric acid. The pelvic gauze was not disturbed. There were whitish patches on the cervix and the edge of the cul-de-sac incision.

June 23d, 7 A.M. Pulse, 88; temperature, 100° F.

June 25th, 10 A.M. Pulse, 84; temperature, 99.4° F. I again washed out the uterus. The gauze was all removed from the peritoneal cavity and renewed. A sample was secured under control conditions. The bacteriological report on this was: "The culture from the specimen of the 25th of June [first dressing] showed only bacilli coli communis; no streptococci were obtained."

This finding is important. I merely wish to emphasize it and at a future time will more fully discuss it. The field of surgical interference had been rendered free from pyogenic cocci.

June 27th, at 6 P.M. The pulse was 108 and temperature 102° F. In this week the girl had had twenty involuntary actions. Thirty-four gauze pads applied to the vulva, each of nine thicknesses, had been used. The discharge caught by them was greenish-brown, and frequently soaked the bedding. The pelvis was dressed as I thought best. Her general condition steadily improved; the tongue cleared, the mind improved, and vomiting ceased; the bowels were less active. Altogether she was better, except that during the second week she would occasionally develop a temperature of 103° F., which would drop to normal at times. July 3d, she was nervous all day. There was little discharge from the vagina. (I had removed all dressings.) At 8 P.M. her pulse ran from 100 at 10 A.M. to 116, and her temperature was 105° F. The cul-de-sac, which was still widely open, I packed with gauze again. In searching for a cause of the pyrexia I found a systolic murmur, heard all over the heart, not loud at the apex but increasing in intensity toward the base. I made the diagnosis of endocarditis. She received general treatment only.

On July 4th I began high enemata of decinormal salt solution.

July 5th. I have this note: "At 10 A.M., pulse, 100; temperature, 100.8° F. Discharge decreased, granulations healthy, uterus contracting."

She had her ups and downs, and on July 11th I found her at 6 P.M. with a pulse of 100; respirations, 32; temperature, 101.8° F. A swab wet in the cervical and cul-de-sac discharges was sent to the bacteriological department of the health board. I also sent a specimen of finger blood. This was the report:

"The bacteriological examination of the tubes sent from the case of X. Y——, Monday, July 11th, resulted in the finding of staphylococcus pyogenes aureus in pure cultures from the blood taken from the finger tip and a bacillus of the colon group from the culture made from the cervix. Of course this does not exclude the possibility of the case being one of streptococcus infection."

The cul-de-sac dressings were sometimes sweet and at other times stank.

July 12th, 6 P.M. Pulse, 96; respirations, 32; temperature, 100.8° F. Murmur much lessened in activity.

July 13th. Pulse, 80; temperature, 99° F. I had made repeated chest examinations and to-day got a few coarse surface râles over the back.

August 8th. Pulse, 96; temperature, 100.4° F. Systolic murmur still heard over heart, from apex to base; not transmitted to left. Liver enlarged to about twice its normal size. Spleen slightly enlarged. Abdomen flat and not sensitive to pressure. Patient fairly well nourished. Upon vaginal examination, discharge moderate; slight odor of bowel gases, not purulent. Cul-de-sac opening almost closed. Uterus and

cervix in good position but fixed. She was discharged, and went to the country.

She has reported several times, taking a railroad ride of forty miles to do so. Cheeks rosy. No pain, no fever, excellent appetite, no menstruation. Very faint apex murmur heard. Lungs normal. Cervix uteri freely movable bilaterally, but fixed posteriorly. No abdominal tenderness. Ovaries and tubes cannot be felt.

At no time during the treatment was antistreptococcus serum used. The treatment was surgical and stimulating. The endocarditis very nearly destroyed her. Although they did not show in the finger blood, I believe streptococci caused it.

A CASE OF FRACTURE DISLOCATION OF THE CERVICAL VERTEBRÆ—SEGMENTS OF VERTEBRÆ WIRED AND PRESSURE SYMPTOMS RELIEVED.

By A. V. L. BROKAW, M.D.,

ST. LOUIS, MO.

The past decade has been marked by the spirit of radicalism in all departments of surgery. While the results in the surgery of the spine are not at present calculated to arouse the enthusiasm of conservative surgeons, nevertheless occasional cases are met with in which operative efforts have been attended with success.

May 15, 1897, Drs. E. H. Higbee and E. H. Higbee, Jr., of Roodhouse, Ill., referred to me a case of fracture dislocation of the cervical vertebræ, which was of unusual interest.

The patient, an adult of slight build, marked by suffering and presenting a most distressed appearance, had met with an accident while on a hunting-trip. On October 12, 1896, he was driving to his camping-ground in a wagon, when he was apprised of a large flock of ducks flying in the direction of the road he was then travelling. Stopping his team, he stood up in the wagon and fired both barrels of his gun at the flock of ducks then immediately overhead. Losing his balance by the sudden starting of his team, he fell backward over the side of the wagon. His neck was drawn to one side and his head forced under the body of the wagon by the rapidly revolving wheels, the horses then being on the run. His companions hastened to his assistance. The patient was found lying to the side of the road unconscious. His companions, not being able to arouse him, made him as comfortable as possible and drove him home, a distance of several miles over a rough country road. Medical aid was summoned and the patient was placed in bed. His head was partially fixed by lateral supports. No attempts were made to reduce the existing cervical fracture by manipulation and extension. After a tedious convalescence of many weeks the patient was finally able to be up and about.

There were irritative cord symptoms, cutaneous numbness with shooting pains at intervals, also paralysis of the dorsal cutaneous, superficial palmar, and muscular branches of the ulnar nerve in the left forearm. There was a partial Erb's palsy, there being some loss of power of the muscles of the right arm supplied by the circumflex, suprascapular, musculo-spiral, and musculo-cutaneous nerves. Neuralgic pains of intermittent character and of severe type harassed the patient the greater part of the time when he was up and about. Considerable relief was afforded by a recumbent position with the head extended. The day of my first examination the patient was suffering no little pain. During the examination I made some traction and extension of the head, almost lifting the patient from the floor. During the manipulations the patient said, "The pain has gone out of my arm." We were assured of the correctness of the patient's statement, when on a return of the pain it was relieved by the same manipulations. The patient stated that for weeks there had been a tendency for his head to drop farther and farther forward; also that he had noted a gradual increase in the paralysis of his left arm as his head dropped farther forward. At the time of my examination the chin almost rested on the manubrium. Voluntary extension of the neck was but to a slight degree possible.

I advised an operation, to which consent was given with alacrity. The parts were carefully prepared, and on May 19, 1897, the operation was performed. The patient was placed well upon his side and anterior thorax, and an incision five inches long was made over the site of the fracture (see Fig. 1, reproduced from a skiagraph taken several days before the operation). The soft parts were deflected to either side of the spines of the vertebræ. The spine of the fourth cervical vertebra was found to have been fractured and irregularly united, the spines of the fifth and sixth

Fig. 1.

cervical vertebræ to be widely separated, the ligamentum nuchæ being completely, the ligamenta subflava partially separated. The distorsion and lateral rotation were quite marked. Not being able to correct these conditions in the position mentioned above, I had the patient brought to the end of the table and the head rotated from side to side and carried downward over the edge of the table, this latter being used as a fulcrum. The parts were then found to be in a position approaching the normal. A piece of silver wire,

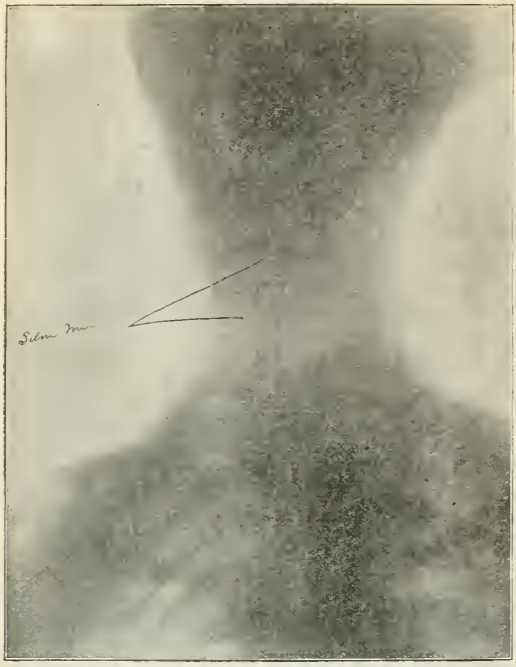

Fig. 2.

such as is used in wiring the patella and in bone resections, was carried around the spines of the vertebræ involved in the fracture, drawn taut, and twisted. Owing to the insecure attachment of the upper portion of the wire a ring of wire was passed around the spine of the third cervical vertebra and several silkworm-gut sutures were passed from one link of the wire to the other. Additional strands of kangaroo tendon were used to anchor the wires to the tendinous aponeuroses and muscles of the neck. Before the wound was closed it was noted that this arrangement of sutures maintained perfectly the desired rigidity of the several segments of the spine. The wound was closed and over the dressings were applied a helmet and cuirass of starched bandage, reinforced by strips of thick binder's board. This arrangement held the head and neck perfectly rigid.

The recovery of the patient was uneventful, without temperature rise, and free from all wound accidents. The spinal irritative symptoms and the sensory and motor disturbances were relieved, with the exception of a partial paralysis of the parts supplied by the left ulnar nerve, the functions of the little finger and the ulnar half of the ring finger being slightly impaired. Naturally there is some stiffness of the wired segments.

The patient at this time is earning his living as a house painter, and, being somewhat versatile, when not so engaged, as a well digger. Figs. 2 and 3, from skiagraphs made some weeks after the operation, show the position of the buried wires.

A feature of interest in this case is the method used in correcting the malposition of the vertebral segments by forcible manipulation. This method has recently been brought into prominence by Calot in his treatment of spinal deformities in Pott's disease.

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SIX ABDOMINAL OPERATIONS.

By EDWIN M. COX, M.D.

new york.

The six cases described here are cases which I have operated upon during the past year at St. Francis' Hospital, and I have selected them for comment, because they seemed to me to have points of interest. None of them presents any great rarity, but some of the conditions were at least unusual.

Case I.—Anne R——, aged forty-eight years; admitted November 7, 1897, with a history briefly as follows: She has had a femoral hernia on the left side for a number of years, but up to the present time it has always been reducible. Five days before admission to the hospital, while the patient was doing some lifting the hernia suddenly increased in size, and became painful, tender, and irreducible. She soon began to vomit, and the vomiting became more frequent and finally stercoraceous. There was no movement from the bowels and a certain amount of tympanites developed, but when she was admitted there was no sign of general peritonitis. Her general condition was good; her pulse was 76 and her temperature 99° F. Her stomach was washed out and she was at once operated upon. The hernial sac contained about an ounce of very foul fluid and four inches of absolutely gangrenous and sloughing small intestine. This gangrenous mass was removed and the hernial ring enlarged. Then the two intestinal orifices were fixed in the

Fig. 3.

wound and a tube was introduced into the proximal end, so as to carry the intestinal contents into a convenient receptacle. There was prompt improvement in both local and general conditions, and in ten days an operation for the cure of the preternatural anus was undertaken. An incision was made along the outer border of the left rectus abdominis down to within about one inch of Poupart's ligament, and the femoral ring approached from within. With the usual precautions the two ends of small intestine were cut off as close to the ring as possible, and an end-to-end anastomosis was made by means of formalin-catgut sutures. The sections of intestine remaining fixed in the femoral ring were closed from the inside by ordinary peritoneal sutures, and then the abdominal wound was closed. Everything went well except for a little superficial infection in the abdominal wound, which necessitated a certain amount of opening and packing. On December 18th, I removed through the femoral opening the two ends of intestine, largely by a process of eversion, and allowed the wound to heal by granulation. Three months later the patient was in good health and did not suffer from any intestinal disorder. I think this is a somewhat unusual method of handling such cases, and, on account of the danger of local infection it seems safer than making an immediate anastomosis, even if we use a button or some similar contrivance.

Case II.—J. H——, aged fourteen years; admitted to hospital June 8, 1898. A week before admission the boy had a sudden attack of violent pain in the epigastrium, with vomiting and prostration, and chilly feelings. During the next day or two the vomiting ceased and there was some diarrhœa. The boy's condition became steadily worse and he was brought to the hospital. When I examined him his temperature was 102.2° F., and his pulse 130. His abdomen was much distended, tympanitic, and rigid, and there was great tenderness over the entire lower half, specially marked on the right side, where the resistance was also most marked. A diagnosis of appendicitis, with perforation and beginning general peritonitis, was made, and an operation was at once undertaken. The incision was in the usual region, and a very large amount of pus was at once disclosed. The cavity from which it came was not completely walled off from the rest of the peritoneum, and the small intestine in the neighborhood was congested and covered with lymph flakes. The end of the appendix was completely gangrenous and had sloughed away. Exploration showed that the deepest part of the cavity extended down behind the bladder, and that there was another large collection of pus, rather more completely encapsulated, extending upward alongside of the colon almost to the liver. The whole cavity was washed out with hot salt solution, and the small intestine in the neighborhood cleaned as well as possible with the same solution. The whole cavity was packed with iodoform gauze, with some strips running far over toward the left side. The boy did well for ten days, and the local conditions steadily improved. The tympanites and general tenderness soon disappeared, though for the first two days the outlook was doubtful. Eleven days after the operation there began to be evening rises of temperature and hepatic tenderness and enlargement, and on June 23d a very large abscess in the right lobe of the liver was opened and drained, four days after a preliminary incision to get adhesion with the abdominal wall. The abscess cavity was larger than a man's fist, and had very ragged walls. From this time on, the boy continuously improved and both wounds healed uneventfully. The case illustrates the occurrence of epigastric pain and iliac tenderness in appendicitis, for the latter would undoubtedly have been found if it had been sought before the boy was brought to the hospital, and thus an earlier diagnosis might have been made. A very little delay in operating would have taken away the boy's chance for life. The size of the liver abscess and the prompt recovery from it add a further element of interest to the case.

Case III.—X——, a divinity student, aged nineteen years, has had five well-marked attacks of appendicitis during the last four years, the later ones being more severe. He came for operation some weeks after the subsidence of the fifth attack. There was distinct tenderness in the iliac fossa, but no mass or resistance could be felt. McBurney's operation was done upon him on June 20, 1898, and the wound was entirely healed in seven days. The chief interest in the case was in the condition of the appendix. The organ was entirely free in the abdominal cavity. It was about four inches long and showed two tight constrictions, about one inch apart, the distal one about the same distance from the end of the organ. The end of the appendix was enlarged to the size and shape of a small olive, and when opened was found to contain about a drachm of fæcal pus. The mucous membrane was entirely destroyed, and the constriction was water-tight. Such a condition made the case one which, perhaps, in the next attack would have caused a perforation, with a condition very difficult to treat and with the probability of general peritonitis.

Case IV.—R. H——, aged seventeen years; was admitted to the hospital, July 21, 1898. His present illness began on July 13th, with gradually increasing pain and tenderness in the right iliac fossa. He had some vomiting and prostration, but no treatment up to the time of his admission. He had, on admission, a well-marked tumor in the right iliac region, extending as far as the middle line, with great tenderness all over the lower abdomen, and a temperature of 102° F. His general condition was good. He was operated upon on the day of admission, and a very large abscess found with the appendix gangrenous to within one inch of its base, and a large concretion free in the abscess cavity. The abscess extended downward and to the right, behind the bladder at its deepest part, and close to the anterior abdominal wall at its most superficial portion. It was well walled off from the rest of the abdominal cavity, and was treated by irrigation and packing. Recovery was uneventful. This case is worth comparing with Case II., and illustrates what an element of safety the formation of adhesions introduces. I might add that both this case and Case II. had symptoms of bladder irritation before operation.

Case V.—E. S——, woman, aged sixty-nine years; admitted to hospital, August 24, 1898. Patient has had a ventral hernia for twenty years but has not been troubled by it, and it has always been reducible. In January, 1898, the patient discovered a small mass in the right iliac fossa, somewhat tender on pressure but not specially painful. The condition remained about the same until three weeks before her admission to the hospital. From that time until she was admitted the mass began to increase in size and to become more painful and tender, and there was a rise of temperature from 100° to 102° F. daily. The tumor could be felt as a very painful, movable mass, about two inches long, and one in breadth, and its exact character was at first somewhat uncertain. However, it was decided that the mass was inflammatory and probably connected with the appendix, and on August 31st the patient was operated upon. A sausage-shaped mass, about four inches long and fully one inch in diameter, was found in the spot where we should expect to find the appendix, and examination showed it to be that organ. The mass was separated from its surroundings, to which it was adherent, and was cut off close to the colon, and the opening in the colon sutured in the usual way. There was very great œdema of all the tissues in the neighborhood, and a large amount of

the thickening of the appendix was due to this cause. The distal two inches of the appendix formed a comparatively thin-walled cystic structure, distended with a semitranslucent mucous material, containing bodies resembling the rice bodies found in joints. The proximal portion of the appendix was enormously enlarged and very dark in color, and the thickening was largely confined to the serous and muscular coats. A history of previous attacks of appendicitis could not be elicited. The remarkable point in this case was the enormous size of the appendix and the fact that at first the disease seems to have given very little pain, since the patient herself had noticed a mass in the abdomen, which became painful only three weeks before she came to the hospital.

Case VI.—E. G——, a rather thin woman, twenty-one years old and unmarried, came to the hospital with a history of having had a slowly growing abdominal tumor for about one year. A diagnosis of ovarian tumor, probably a dermoid, was made, and the question of operation was not at once decided, because the patient's heart action and general condition were not so good as might be wished. However, there was a sudden onset of symptoms that indicated twisting of the tumor's pedicle, and intestinal obstruction with vomiting and prostration. . As soon as possible—that is, in about twenty-four hours, the general condition being a little more favorable, and all attempts to relieve the obstruction failing, an operation was done. The tumor was found to fill the pelvis, and the small intestine in the upper part of the abdominal cavity to be much distended. It was necessary to tap the tumor with a large trocar, in order to find its pedicle. The fluid was dark fluid blood and sebaceous material. There was no trouble in tying off the pedicle, in which there were two turns, and there was no loss of blood. The uterus and other ovary were normal, and there were no evidences of peritoneal inflammation, except at the immediate front. The sudden increase in the size of the tumor, due to the twisting of the pedicle, undoubtedly accounts for the intestinal obstruction. In spite of all stimulation the patient died in about ten hours, apparently from shock and exhaustion. She had been on the operating-table about half an hour. The exhausting effects of the obstruction and the patient's poor circulation, I think, account for the failure of the operation to do any good.

SILVER AND SILVER SALTS IN SURGERY, WITH SPECIAL RELATION TO WOUND TREATMENT.[1]

By WILLIAM SEAMAN BAINBRIDGE, M.D.,

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Prior to Pasteur and Lister the result of the treatment of wounds, as we all know, was shrouded in uncertainty. Pirogoff, after long experience extending over many years of active surgical practice, wrote a treatise on luck in surgery. To luck he gave the main and determining factor in the healing process. This is not strange, when we realize that in those days accurate anatomical knowledge, expert technique, and untiring attention did little to render the patient free from those deadly diseases which were then almost the rule.

The light of antisepsis soon dawned, and carbolic acid and the spray were given their places in surgery. Lister's first communication to *The Lancet* appeared in 1867, and in it he set forth his views regarding wounds as a serious complication in cases of fracture. The article begins as follows: "The frequency of disastrous consequences in compound fracture, contrasted with the complete immunity from danger to life or limb in simple fracture, is one of the most striking as well as melancholy facts in surgical practice."

From this premise the argument reaches the important conclusion that the entrance of putrefactive agents into the wound caused local and general disturbance. This naturally led to the search for antiputrefactive materials and to their use in the treatment of wounds.

"At that time," as Lord Lister said in his presidential address before the British Association in 1896, "in Scotland carbolic acid was little more than a chemical curiosity." What was true of Scotland was true of the world, but soon it became of universal use and the spray was the *vade mecum* of the surgeon.

At first the results were magnificent, and so different from those of a short time before that no material advance in new lines was made. Later air was proved to be an unimportant factor in wound disease, and the materials which came in contact with the exposed surfaces were rightly held responsible for infection. After this the spray was dispensed with and strong antiseptic solutions and dressings were solely employed.

Bacteriology now came and placed the germ theory of certain diseases upon a thoroughly scientific basis. This marked the beginning of a new era. The refined methods of Koch and others made possible the cultivation and differentiation of the micro-organisms of many of the common wound diseases. The surgeon was then permitted to see what he had believed to exist.

It was observed early in the use of carbolic acid that, while preventing disease, it was far from being free from objectionable qualities. It was irritating and toxic. The strong preparations used for irrigation and dressing had to be lessened in strength. Gradually they have been diluted, until now at times such weak solutions are used that there is apparently more effect upon the mind of the patient and conscience of the physician than upon the pathogenic bacteria themselves. Thus carbolic acid did not answer all demands for an antiseptic, and consequently many other agents appeared in an effort to supply this need. What has been true for many years is largely true to-day. The want is still unsatisfied even with the so-called classical antiseptics of the present time.

It has been the common experience of physicians to be flooded with circulars of new antiseptics. Often much of the advertising space of medical journals is occupied by announcements of "the best antiseptic." The patent-medicine man bent on personal financial gain is not the only one actively at work in this direction. Reputable chemical firms and not a few leaders in the profession here and abroad are devoting much time and thought to the subject.

The question naturally arises, What of asepsis? Has not that now come to supersede antisepsis?

A visit to a few of the principal hospitals on both sides of the Atlantic will convince one at once that there is no uniformity in the methods practised. In a clinic like that of Macewen's in Glasgow, there is strict asepsis; while in the operating-rooms of such men as Watson Cheyne and Pearce Gould, in London, strong antiseptics are liberally employed. Illustrations of the divergence in practice along this line can as well be taken from leading men of the continent of Europe and of America as from those of Great Britain. Undoubtedly asepsis holds the first place. Those who advocate the use of strong chemical agents in all cases admit that the total prevention of the entrance of germs is the ideal method, but they affirm that this is either impossible or involves too many risks. As good surgeons, on the whole, no matter what their method may be, obtain excellent results in the treatment of wounds,

[1] Read at the annual meeting of the Chautauqua County Medical Society, July, 1898.

practically the difference cannot be very great between the two extremes. Still the general consensus of opinion holds that, while at the present time there is a wise effort toward a very conservative use of antiseptics, there is a distinct field of usefulness for them.

January 25, 1896, Dr. Credé gave a lecture before the Gesellschaft für Natur- und Heilkunde, in Dresden, setting forth the claims of "Silver—Its Relation to Bacteriology and Application in Surgery." For years he had been at work searching for some better antiseptic, and in this lecture reported concerning the use of certain new agents in the treatment of wounds. The results which were then presented were further substantiated by practical and laboratory proofs embodied in a paper read at the Moscow congress, August, 1897.

The standing of Hofrath Credé and his reputation as a careful observer directed the attention of many in Germany and elsewhere and stimulated the investigation of these new preparations. With the spirit of the true scientist, he desires to have others thoroughly test what has seemed to bring such excellent results in his own hands. During a visit to Dresden in January and February of the present year, I was enabled through the courtesy of Dr. Credé and his assistants carefully to study his methods.

History of the So-Called Silver Treatment.—Dr. Credé, having seen good results obtained from the use of solutions of nitrate of silver in certain inflammatory conditions of the eye, tried this agent in the treatment of wounds. His efforts were, however, unsuccessful, because of "its ready chemical decomposition and its corrosive action." Subsequently, during a visit to America, he saw silver foil being used by Dr. Halsted in the dressing of small wounds. The effect was evident in the destruction of the micro-organisms without irritation of the tissues exposed, but no one at that time had discovered the reason for such antibacterial action. Dr. Credé noticed that metallic silver in a clean wound was not altered, but in an infected area underwent a distinct change. The next step was to understand this chemical action, and, if possible, to obtain the antiseptic material thus produced. This was done, and I cannot do better than repeat Dr. Credé's own words:

"We succeeded in determining by a series of experimental researches that the bacterial secretions acting upon silver and entering into combination with its oxides are organic acids, pre-eminently lactic acid, and that the antiseptic which an infected wound when dressed with metallic silver generates of itself is lactate of silver."

Experiments were now carried on with both the pure metallic silver and the lactate, and later with citrate of silver, a third agent which was far less soluble than the other salt.

Preparations Used.—(1) Pure metallic silver, non-irritating and possessing a distinct antibacterial action. If a Petri plate containing agar-agar be infected with staphylococci pyogenes or other germs and a small piece of silver foil be placed in the centre, a zone of considerable extent about the metal will remain free from any growth. The area of "no growth" is larger than in the case of gold or any other of the metals tested. This action of silver has led to its novel use in Dresden as a partial coating to court plaster.

(2) Solution of metallic silver. Distilled water was found to dissolve pure silver. The resultant brown fluid is not only non-irritating, but free from any toxic effect. After making a small quantity, Dr. Credé insisted upon drinking to my health some of this solution, and I, of course, returned the compliment in like manner.

Silver gauze is prepared by soaking ordinary thin muslin in a strong solution of metallic silver.

(3) Lactate of silver. A white, odorless, almost tasteless powder—unchanged when kept in a dark bottle. Soluble in 1 in 15 of water or albuminous fluid. Not irritating except on special sensitive tissues, and then in powder form. At times there may be some slight burning sensation with a strong solution. It has been proved to kill the streptococci and staphylococci in five minutes in the strength of 1 in 1,000 of water.

Catgut is prepared by Dr. Credé as follows: Having been cleansed in the ordinary way, it is soaked for a week in lactate-of-silver solution (1 in 200); then dried, and later placed in alcohol. After twenty-four hours it is ready for use. The gut is dark in color, strong, does not slip easily, and is somewhat longer in being absorbed than ordinary catgut.

Silk suturing material and rubber drainage tubes can be prepared much in the same way.

(4) Citrate of silver. Light stable powder, odorless (non-irritating), and like lactate in antiseptic power. Causes no burning sensation, and is less soluble (1 in 3,800 of water) than the other salt (1 in 15 of water). All germs ordinarily met with in connection with wounds are killed in ten minutes by an aqueous solution of 1 in 4,000. Solutions of 1 in 4,000 to 5,000 are used for irrigating wounds and body cavities. Other preparations, such as metallic and citrate of silver ointments, have been introduced and are used with promising results in certain skin diseases.

Thus I have mentioned the chief materials employed, and given a few of the results of the many bacteriological tests which have been most carefully made in the laboratory of the Carola Hospital.

Methods Used.—Perhaps I can best illustrate this treatment of wounds by briefly describing a few of the cases seen during my visit.

(1) Gastro-enterostomy — Murphy's button. The button being in place, the wound edges were thoroughly exposed and very lightly dusted with a small quantity of citrate of silver. Sutures of "silvered catgut" and "silvered silk" were introduced, all vessels having been previously tied with "silvered catgut." A small strip of silver gauze was placed over the wound and an ordinary dressing of sterilized gauze applied. Except for the use of ether and alcohol in cleansing the operating-area, no antiseptic was used on the patient or by the surgeon.

(2) Lipoma of forehead. Wound insufflated with citrate of silver and sutured with "silvered silk." A small piece of gauze was sprinkled with citrate powder and then applied to the wound. This illustrated the claim of Dr. Credé that gauze can be made as needed if no metallic-silver gauze is at hand. He goes further, and says that in an emergency the gauze need not be absolutely sterile, providing plenty of citrate be employed. I saw him use ordinary muslin fresh from the store in a number of cases without untoward results.

(3) Large alveolar abscess. A few teeth extracted and external incision made. A solution of citrate of silver freshly prepared from tablets of convenient size and strength. The solution used as a mouth wash and irrigating fluid was about 1 in 4,000. The abscess cavity was packed with metallic-silver gauze.

(4) Foreign body in knee-joint. Joint opened, foreign body removed, joint cavity washed out with citrate of silver, wound dusted and sutured. In this case, as in all the other cases mentioned, the results were excellent. There was no reactive synovitis, and healing was prompt and complete. Very many other examples might be added, but these few serve the purpose of clearly showing the methods of wound treatment which have now been used in several German hospitals for over two years.

Carola Hospital, the home of the silver treatment,

is an institution for general hospital work, having several hundred beds and only one operating-room, nineteen by twenty-one feet. Instrument and drug cases with the washing appliances take up much of the already cramped space. Considering the fact that all cases, septic or clean, undergo operation upon the same table and in the same room, the test of this new treatment is certainly most rigid. The Carola Hospital, I may also mention, has been a pioneer in other lines. Five years ago, realizing the importance of systematic physical exercise in certain cases, it led Europe in planning a specially equipped gymnasium under its roof.

Results Noticed.—On going through the wards and examining carefully the cases after operation, the results could justly be considered excellent. The following points were specially noticed: (*a*) No evidence of suture irritation. (*b*) No stitch abscesses. (*c*) No area of dermatitis about the wound, as sometimes seen with iodoform. (*d*) No systemic effect, even when the amount of the antiseptic was large.

A few practical suggestions: (1) A small quantity of the citrate is all that is required. This is important, as the salts are rather expensive. (2) Solutions must be made fresh. They are chemically changed if exposed to the light for some time. (3) It is needless to say that in testing the efficiency of these antiseptics one should be sure of his preparations. (4) No corrosion of instruments need be feared. (5) Stains produced by the solution on towels, etc., can be removed by washing, providing they have not been exposed to the light for some time.

In conclusion, I would call your attention to other fields of usefulness which appear to open up for silver salts. It seems from experiments being made that the internal administration by the stomach, and more especially by hypodermic injection, offers us a means of combating systemic infection in a way hitherto unknown. The results already secured warrant careful research in this direction, but for the final verdict we must wait further developments.

THE RELATION OF PHOSPHATURIA TO THE TREATMENT AND PROGNOSIS OF FRACTURE.

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MUCH has been written on the clinical value of the examination of urine and the aid it offers in diagnostic work. That it gives valuable aid to both the physician and the surgeon, in estimating the amount of elimination and metabolism, as well as in ascertaining the condition of the kidneys, the liver, the fitness of the patient to stand the administration of an anæsthetic and the shock of an operation, is unquestionable.

Aside from these conditions, it has obtained from the busy practitioner of to-day but a limited amount of practical use. There is little in the literature of the past or of the present on this subject that offers to the surgeon anything of diagnostic import, though it may be said that chemical advances in the future may reveal much more of knowledge to aid in the diagnosis of disease by perfected methods of urinary examination.

The subject of phosphaturia has been carefully studied in its relation to nervous diseases, but the widely varying results obtained by different observers leave its exact relation to such diseases far from being satisfactorily settled. The reason probably lies in the fact that the elimination of the phosphatic salts depends to a large degree upon the character of the food ingested, the variable amount of phosphates in the food, and the degree of oxidation of phosphorus in the system—which last condition depends to a large degree upon the amount of exercise, both mental and muscular, taken by the individual. It must not be forgotten also that the phosphatic salts are eliminated in the fæces and other excretions of the body. Until these difficulties can be overcome, no reliable conclusions can be made as to the exact amount of phosphates eliminated.

The aim of this article is to present a few conclusions gleaned from a careful study of the urine in a number of fracture cases. The urinary examinations were made with a view to determine the clinical value of the phosphates and the relation of the earthy to the alkaline phosphates in such conditions. It may be said, further, that these conclusions are of practical value to the surgeon in the care and treatment of such cases. They place at his disposal a test by which he can determine the condition of the bone and the extent of the reparative process. In cases of fracture, if, on examination of the urine, phosphaturia is marked, it follows that it would be unwise to allow in such a case too early use of the part, and also that more rest is indicated. In such cases the administration of hypophosphites of lime, sodium, and potassium, to aid in the formation of bone tissue, would be advisable. The study of the relations of the alkaline and earthy salts offers the most satisfactory results, as we find that in normal and healthy conditions of the body there is a definite relation between the two, the alkaline being three times the amount of the earthy phosphates. The relative value of phosphoric acid in the urine has been calculated as varying from 17 to 20; that of the blood, 3; of muscle tissue, 12.1; of brain, 44; of bone, 426 to 430.

Does not this preponderance of phosphoric acid in bone imply that its determination in all pathological conditions of bone tissue is not only of greater relative importance than in the case of nerve tissue, but also more easily arrived at?

In cases of osteomalacia examination of the urine shows a marked increase in the quantity of the lime salts, carbonates, oxalates, and especially the phosphates; this fact is supposed to be due to the reabsorption of the bone salts. In cases in which the repair of a fracture is delayed or repair does not take place properly, may it not be due to the same cause, namely, the reabsorption of the callus or the presence of an inflammatory condition in or about the callus preventing union?

The cases which are presented in the following table show the results of an examination of the urine made during the summer and fall of 1897. Twelve cases are presented, nine of them being from the surgical wards of the Buffalo General Hospital and three from the Erie County Hospital. In each case a twenty-four hours' sample was taken and a complete urinalysis made. As the examination showed no marked deviation from the normal in most of the constituents, only such items as have a bearing on our present subject are reported.

In the testing for phosphoric acid the total amount present was first computed, and then the alkaline salts were separated from the earthy.

The following solutions were used:

(1) Standard uranium-nitrate solution, 1 c.c. is equal to 0.005 gm. of phosphoric acid. This solution was first tested with a solution containing a known quantity of phosphoric acid.

(2) Sodium-acetate solution, ten-per-cent. solution of sodium acetate in ten-per-cent. acetic acid.

(3) Saturated solution of potassic ferrocyanide, used as an indicator.

Process for determining the total amount of phos-

phoric acid. Fifty cubic centimetres of urine was poured into a beaker, and five cubic centimetres of sodium-acetate solution added. The mixture was warmed over a water bath and the uranium solution added drop by drop, until the mixture gave a brown coloration when a drop of it came in contact with the potassic-ferrocyanide indicator on a white porcelain surface. The reading of the burette was then taken, each cubic centimetre of the solution used representing 0.005 gm. of phosphoric acid.

Process for determining the earthy phosphates. Two hundred cubic centimetres of urine was treated with ammonium hydrate and the precipitate allowed to stand for twelve hours; the latter was then filtered and washed with twenty-five-per-cent. ammonium hydrate; then washed into a beaker and dissolved while warm in as little acetic acid as possible. To this was added five cubic centimetres of sodium-acetate solution, made up to fifty cubic centimetres. The process was then the same as in the determination of the total phosphoric acid.

The alkaline phosphates were determined by difference.

The table shows a marked increase in the total quantity of phosphoric acid in all of the cases except two

The conclusions that may be drawn from the results of these examinations are as follows: First, that during the course of the reparative process after a fracture there is an increased elimination of phosphates amounting to a decided phosphaturia. Second, that there is a large relative increase of the earthy salts in comparison with the alkaline. Third, that as the fracture is repaired and the patient is in condition to resume free occupation this phosphaturia is less marked, and the earthy salts resume their normal relation to the alkaline.

The subject is certainly worthy of more extensive and deeper study. In so far as there has been the opportunity, a search of the literature of surgical pathology and of urinalysis has been made, and while the relation of the phosphates in certain diseases of the bones, such as osteomalacia and rickets, has been mentioned, nothing could be found on its relation to cases of fracture. As these latter are of frequent occurrence, the surgeon ought not to overlook any fact which might assist him to a better knowledge of his cases, especially in those of fracture in which for various reasons repair is delayed. His examination of the urine in such cases would be a "Roentgen ray," by which he could see the condition that existed in

Name.	Age.	Situation and Character of Fracture.	Number of Days Confined.	Day Examined.	Amount of Urine, c.c.	Alkaline Phosphates.*	Earthy Phosphates.†	Total Phosphoric Acid.‡	Urea.§
Rise	22	Interarticular of knee-joint	82	17th.	1,540	4.1	8.6	12.7	20.79
Reber	34	Lower third of femur	144	66th.	860	11.3	13.5	24.8	22.36
Bozack	43	Compound, lower third of femur	85	28th.	1,540	15.3	4.9	20.2	33.88
Bentley	26	Ninth dorsal vertebra	64 (died)	39th.	800	6.1	1.6	7.7	8.8
Keeper	35	Rib	25	4th.	1,583	3.5	1.3	4.8	22.16
Buckley	35	Lower third of femur	82	9th.	960	7.6	7	14.6	17.28
Kouiski	33	Compound of tibia	104	48th.	2,000	10.7	4.7	15.4	40
Carter	22	Compound comminuted of tibia	75	10th.	1,630	14.2	7.2	21.4	39.12
Muir	26	Left leg crushed (amputated)	20	9th.	1,980	8.2	8.1	16.3	28.71
Keplar	29	Patella	38	32d.	1,030	11.6	4.1	15.7	17
Woodward	35	Tibia and fibula	44	23d.	1,560	16.2	4.8	21	45.24
Parsloe	63	Compound of femur, transverse of surgical neck of the humerus, comminuted of glenoid fossa	203	115th.	1,350	7.6	3.6	11.2	16.875

* Average amount, 9.7 gm. † Average amount, 5.8 gm. ‡ Average amount, 15.5 gm. § Average amount, 26.01 gm.

(Bentley and Keeper), and in those cases the injury as regards the bone tissue was slight—in the case of Bentley the principal injury being to the spinal cord. The normal amount, according to Simon, Purdy, and other authorities, is given as ranging from three to six grams per twenty-four hours. In the cases above cited the average amount is shown to be fifteen and five-tenths grams. The significance of this increase is more notable from the fact that one of the principal factors causing the elimination of phosphoric acid—namely, exercise—is absent in these cases; the nature of the injury being of such a character as to keep the patient confined to the bed, or at least greatly limiting the amount of muscular exertion. In those cases which were examined a few days following the fracture, this increase is not so marked as in those examined at a later date, when the system was engaged in the effort of repair by the setting free and deposit of lime salts and the formation of the bony callus.

In the comparison of the alkaline and the earthy phosphates, it will be noticed that the latter are relatively increased. In normal urine the ratio between the two being one to three, the average result as shown by these cases was one to one and six-tenths, or an increase of about seventy per cent. in the earthy phosphates. The relation of the phosphoric acid to the amount of urea is of interest, in so far as it shows that the ratio between these two, which under ordinary conditions is one to seven, is changed; in some cases the amount of phosphates equals or exceeds the amount of urea eliminated.

the bone. This would be of clinical interest in deciding when a patient could walk, especially in fracture of the long bones of the lower extremity, and clinically after a patient had begun to walk, if it was thought best to allow him to do so, examination would show if there was any inflammatory trouble in the callus, indicating the need of more rest, because of softening of callus. To prevent refracture in these cases it would be well to push the administration of hypophosphites to supply bone salts, which is also true in all fractures when in depressed conditions phosphaturia is marked.

A Sign of Grave Facial Paralysis.—Drs. Bordier and Frenkel (*Le Scalpel*, June 19th) have noted a new phenomenon in peripheral facial paralysis, which has considerable prognostic value. This is the rotation of the ocular globe from above downward during the act of closing the eyelids. Bonnier says he has encountered this sign in all cases that he has observed. Frenkel and Bordier explain it as an actual nervous discharge; voluntary excitation, having no action on the facial, discharges itself in another way. Dr. Bonnier thinks that it is a simple derangement in motricity. Campos thinks that it is a physiological phenomenon becoming more manifest by the fact of a more considerable nervous impulse, and that the phenomenon is more manifest according as the impulse is more intense—that is to say, as the paralysis is more marked.

Progress of Medical Science.

Indicanuria.—Dr. Charles E. Simon, in *The American Journal of the Medical Sciences*, concludes as follows: (1) The gastric juice possesses antiseptic and germicidal properties. (2) These properties are referable to the presence of free hydrochloric acid. (3) A subnormal amount of free hydrochloric acid will call forth an increased degree of intestinal putrefaction. (4) The conjugate sulphates form an index of the degree of intestinal putrefaction. (5) The increased intestinal putrefaction in cases of subacidity and anacidity of the gastric juice is largely referable to an increased formation of indol. (6) The elimination of indican in the urine may be regarded as an index of the amount of free hydrochloric acid present. (7) A normal acidity of the gastric juice is never associated with increased indicanuria. (8) Cases of ulcer of the stomach apparently form an exception to this rule, an increased indicanuria being usually associated with hyperchlorhydria. (9) In other cases of hyperchlorhydria a subnormal or normal amount of indican is eliminated. (10) Simple constipation is rarely accompanied by an increased elimination of indican. (11) Diarrhœa referable to a catarrhal condition of the colon, often following a previously existing coprostasis, as well as diseases of the colon in general, is not associated with an increased indicanuria. (12) In the differential diagnosis between ileus and coprostasis, a small amount of indican excludes the former condition. (13) In cases of an achlorhydria with much lactic acid, the indican is not necessarily increased. (14) No indican, or but little indican, with delayed Günzburg potassium-iodide reaction, indicates the absence of free hydrochloric acid, with much lactic acid.

The Tallerman Treatment by Superheated Dry Air.—This is the new method of applying heat locally to cure disease and to relieve pains of certain arthritic diseases, such as rheumatism, gout, rheumatoid arthritis, gonorrhœal rheumatism, tuberculous inflammations of the joints; also other affections of the joints—sprains, synovitis, inflammations due to injuries; also certain affections of the nerves, as sciatica, tic douloureux and other neuralgias; also chronic ulcers, flatfoot, certain diseases of the skin, etc. In a work describing this new method, Dr. Edouard Chrétien, commenting on the cases treated at the Laennec and Salpêtrière hospitals in Paris, states the effects observed in the following terms which are fairly identical with Dr. Sibley's account, published in the London *Lancet*, August 29, 1896. (1) More or less profuse perspiration, not only of the part treated, but over the whole surface of the body. (2) Marked reddening of the skin of the part treated, indicating an intense dilatation of the blood-vessels. (3) Diminution and rapid disappearance, sometimes almost immediately, of pain. (4) Restoration of movement, when functional impotence was due only to pain. (5) More or less acceleration of pulse, caused by the peripheral dilatation of the blood-vessels, which facilitates the action of the heart, and makes it contract more vigorously.

Pregnancy Complicated by Chorea.—Dr. Dakin, in *The Practitioner* for December, in reporting seven cases in which chorea was a complication in pregnancy, draws the following conclusions: (1) Chorea is more frequent in the first than in subsequent pregnancies. (2) Legitimacy or illegitimacy is without influence upon its occurrence. (3) In the majority of cases there is a previous history of chorea or of acute rheumatism. (4) The majority of cases occur in women under twenty-five. (5) The onset of the disease is usually during the first six months, and the earlier the onset the more severe, apparently, are the symptoms. (6) In every case endocarditis (post mortem) or cardiac bruits were present. (7) In none of the cases was there any attempt at spontaneous abortion. (8) In six out of the seven cases mania occurred at some time or other, but in two the mania did not appear until after delivery. (9) In each case mania rapidly subsided after delivery, but the choreic movements were not so easily affected; in only one case did much improvement follow. This is in startling contrast with what is observed in eclampsia. In five of the cases labor was induced; in one the patient left the hospital at her own request; and in the seventh case a month's treatment with arsenic and bromides cured the chorea entirely, and the patient was discharged. (10) Chloroform is useful in quieting the spasms and inducing sleep, and should always be employed during operative manipulations. Hyoscine was also found useful. (11) Of the seven cases two were fatal, and each of these was characterized by hyperpyrexia, the temperature exceeding 106° F. (12) The prognosis depends upon the severity of the spasms, and especially upon the degree of severity attained during the first week after their onset; cases which remain mild for a week are likely to prove amenable to treatment.

The Various Methods and Indications for the Employment of Decinormal Salt Solution.—Dr. P. Findley draws the following conclusions: (1) When decinormal salt solution is indicated, enteroclysis is the method of choice, providing there is time to await its effect. (2) The body temperature, vascular tension, and renal, cutaneous, and intestinal secretions are influenced in direct ratio to the temperature of the injected fluid. (3) Injected solutions of high temperature, however, may lower the body heat by promoting the excretions. (4) A solution of 60° to 70° F. given within the colon, will first stimulate and later depress the blood tension and the secretions of the skin and kidneys. It is therefore to be used with caution, particularly in renal insufficiency. (5) In the subcutaneous method we have all that is required if immediate effect is desired, except when abdominal section may indicate intraperitoneal injections, when the withdrawal of a quantity of blood has made it possible to give intravenous injection with the least possible loss of time, and when the serous cavities have been relieved of a quantity of fluid which may be replaced by decinormal salt solution. (6) As a rule, no time is gained by the employment of the intravenous method, which should be used only when preceded by venesection for the withdrawal of blood. (7) In intravenous injections it is possible to cause death from too great dilution of the blood, an accident quite impossible in hypodermoclysis or enteroclysis. (8) Decinormal salt solution is indispensable in the treatment of alarming hemorrhage, and is of great value in the various toxæmias, and in renal insufficiency. (9) After the removal of a large quantity of fluid from the pleural cavity, the salt solution may be injected into the cavity as a substitute for the effusion, and will thereby lessen shock and relieve septic infections. (10) In cholera and cholera infantum, decinormal salt solution is invaluable as a substitute for the lost serum. (11) Venesection with the withdrawal of a quantity of toxic blood is indicated in toxæmias, when the patient is plethoric, and should be followed by intravenous injections of an equal or greater amount of decinormal salt solution. (12) In hemorrhage decinormal salt solution maintains the circulation by adding to the volume of the circulating fluid, which would otherwise stagnate in the veins, there not being a sufficient

volume for the heart to propel. (13) In toxæmias decinormal salt solution dilutes the toxins of the blood and favors their elimination by stimulating the excretory organs.—*Medical Standard.*

Coxa Vara or Deflection of the Neck of the Femur.—Dr. A. H. Tubby (*British Medical Journal*, July 23d) briefly sums the symptoms and the treatment of this condition as follows: "(1) Age: Either in infancy or adolescence; less often in childhood. (2) Class of patients: Rickety and those who carry weights and do much walking, and are subject to prolonged fatigue. (3) Onset: Peculiar stiffness of hip, spoken of as "growing" pains; the stiffness is worse on rising after sitting for a time, but is relieved by complete rest. (4) Limping, if of one side; waddling, if of both sides. (5) Shortening, amounting to as much as one and one-half inches. (6) Prominence of the trochanter, especially on flexing the thighs. (7) Displacement of the trochanter above Nélaton's line, and sometimes backward. (8) Rotation outward of the limb and eversion of the foot. (9) Limitation of inversion and final loss of abduction, with, in extreme cases, scissor-leg progression and inability to walk without crutches. (10) Tilting of the pelvis and consecutive scoliosis. (11) Signs either of infantile rickets or of late rickets, the so-called rickets of adolescence. Negatively, the absence of the following symptoms may be observed: (1) No local swelling except that presented by the displaced trochanter, and no tenderness on pressure. (2) Absence of the up-and-down movement or telescopic movement on traction of the limb so characteristic of congenital hip displacement. (3) Suppuration never occurs, nor is the thickening of the trochanter found. The treatment is simple. In the first place, in infants, rickets should be treated, and, if the disease is at all marked, it would be well to place the infant in a Hamilton or in a Bryant splint, with the legs abducted as much as possible. If there is softening of bone still present, this position will serve to lever back the head into its original position, and, if the time of softening has passed, recumbency will prevent further development of the deformity. In the case of adolescents, the first thing to insist upon is cessation of habits of long standing or the necessity of weight-bearing. Rest will then quickly relieve the pain, and the deflection of the head and neck will cease. But, if left to itself, a miserable result will follow—limping, shortening, persistent and chronic adduction of the limb, and in bilateral cases even scissor-leg deformity. If, however, the case comes to one when it is well pronounced and disability is great, I should not hesitate to recommend an osteotomy on the femur, done in one of two places, either obliquely through the great trochanter or below the trochanters. I think the best results would be obtained by the former procedure. If the patient should refuse operation, a cork sole is the only remedy."

Indication for the Use of the Double-Current Rectal Irrigator.—Dr. R. C. Kemp (*Wiener medizinische Blätter*) is credited with the following statements: "(1) The returning current provides for the elimination of flatus during irrigation. (2) The quantity of fluid necessary for irrigation is relatively small, inasmuch as we can make use of position. The principle is similar to the washing of the bladder and stomach. (3) The greater part of the work is mechanical and calls for but little exertion on the part of the patient. The fluids used are physiologic salt solution, boiled water, boric-acid solution, salt solution with a few drops of peppermint oil, permanganate of potassium, bichloride (1–10,000). Irrigation is to be performed but once daily, and never more than three days in succession. The amount of fluid to be used depends upon the case at hand. The conditions in which this method was employed were catarrhal colitis, membranous or croupous colitis, acute and chronic dysentery, gastro-enteritis of children, amœbic dysentery, typhoid fever, chronic constipation, intestinal paralysis, duodenal icterus, as well as shock, uræmia, and hemorrhagic anæmia."

Epilepsy.—Dr. Hermann Beer (*Klin.-therapeut. Wochenschrift*, September 11th) divides the subject as follows: *A*. Genuine epilepsy. Epileptic attacks without apparent cause. *B*. Symptomatic epilepsy. (1) Intoxication epilepsy. Alcohol, lead, carbon dioxide, ergotin, antipyrin, arthritis (urea), nephritis (urea), intestinal sepsis. (2) Infectious epilepsy. Syphilis, cholera, variola, morbilli, sepsis. (3) Diseases of the brain. Emboli, apoplexy, tumors, multiple sclerosis, hyperæmia. (4) Reflex epilepsy. Masturbation, menstruation, pregnancy, constipation, intestinal parasites, dilatation of the stomach, cicatrices, thrombosis in the external auditory canal or in the Eustachian tubes. (5) Traumatic epilepsy. Injuries of the head. (6) Cardiac epilepsy. (7) Physical and mental overexertion, irregular mode of living, worry, and depression of spirits.

Widal's Reaction in the Diagnosis of Typhoid Fever.—Dr. Schabad, of Wilna (*Medisinskoye Obosrenye*), as a result of extensive hospital experience draws the following conclusions: (1) In the hands of an expert and with an active culture the Widal reaction is a very useful aid in the diagnosis or exclusion of abdominal typhus. (2) A marked or medium positive reaction, which is seen microscopically with a 1 in 50 dilution, speaks for typhoid fever, a medium and absolutely negative one against the disease. The macroscopic negative reaction does not, however, exclude typhoid. (3) The severity of the disease at times influences the intensity of the reaction, but particularly the duration of the same. (4) The positive reaction may appear five or six days after the beginning of the disease and may exist one year after convalescence. (5) Instead of using blood and blood serum, the same results may be obtained by using the serous exudation from bullæ. (6) The examination of the urine, in accordance with the principle of Widal, does not give satisfactory results. (7) For diagnostic purposes formalin cultures may be used in place of fresh ones. (8) The existence of unclassified forms of typhoid must be looked upon as doubtful. There are, in all likelihood, infectious diseases which run a course similar to typhoid, the nature of which is as yet not thoroughly understood.

A New Pulse Phenomenon in Neurasthenia.—Erben (*Wiener klinische Wochenschrift*, 1898, No. 24) describes a pulse phenomenon in neurasthenia, which has thus far not been mentioned. If the patient bends forward or makes an attempt to sit down, a distinct and easily appreciable slowing of the pulse takes place, which, however, returns to normal in a very short time, whether the patient assumes the erect position or not. Even neurasthenics with tachycardia show the phenomenon. Healthy individuals do not show this phenomenon, which Erben attributes to vagus irritation. In tachycardia dependent on other conditions this phenomenon does not occur, so that the author places great stress upon its differential value.

The Therapeutic Uses of Iodine, and the Choice of its Combination with Sodium or Potassium.—Briquet (*La Presse Médicale*, 1898, No. 5) makes the following statements: "(1) Iodine is of use in the majority of cases of arterio-sclerosis, aneurism, acute and chronic aortitis, and in the circulatory disturbances of some cases of uncompensated heart lesions. Among

affections of the respiratory apparatus it is especially indicated in true asthma, in prolonged influenza bronchitis, in some cases of acute as well as in dry chronic bronchitis, in chronic pneumonia, pulmonary congestion, and in chronic coryza and ozæna. Among the infectious and parasitic diseases it is of great value in syphilis and actinomycosis. It is of further service in mercurial and chronic lead poisoning, of occasional good in some arthritic affections, hyperostoses, and iritis. On the other hand, iodine is useless in affections of the digestive tract, liver, and kidney. It is also of no value in non-syphilitic disease of the nervous system or in the infectious diseases. Contrary to the generally accepted belief, it is also useless in its effect upon the secretion of milk. (2) Generally speaking, iodide of potassium is preferable to the iodide of sodium, except in disease of the respiratory apparatus and in some cases of rheumatic pains. If the iodide of potassium is badly borne at the beginning or during the course of treatment, replace it by the sodium iodide, which is but slightly inferior to the potassium salts in its therapeutic effect. At the beginning of medication it is advisable to use the sodium iodide, because it is better borne, as a rule. When the organism has become accustomed to the iodine, then the potassium iodide may be used. If used for a long time, iodide of potassium seems to act as a depressant. Therefore, if the iodine treatment is to be kept up for any length of time, it is advisable to alternate both salts."

Innervation of the Heart.—Professor v. Leyden at the Verein für innere Medicin in Berlin (*Münchener medicinische Wochenschrift*, July 12th) made the following statements: "(1) The heart of the embryo pulsates long before it is possible to demonstrate any nerves therein. (2) There exists unstriped muscle, in which neither nerves nor ganglion cells can be demonstrated, and in which contraction still occurs, viz., the ureters. (3) The experiments of His and others have shown that the cardiac nerves originate in the sympathetic and only gradually enter the heart; the heart ganglia originate from the spinal ganglia, which are purely sensory. Therefore the cardiac nerves are also of a sensory character, and for that reason unable to send forth motor impulses. (4) Finally, in no part of the heart have nerve endings of the character of a motor end apparatus been demonstrated."

Therapy of Lipomatosis Universalis.—Dr. E. H. Kisch (*Wiener med. Presse*, 1898, No. 11) gives the following directions: (1) Diminish the amount of food. The necessary amount of food stuff for an extremely stout person is one-fourth less than in an equally heavy normal individual. (2) Proteids must be taken in abundance, carbohydrates to a moderate degree, fats in a minimal amount. (3) Fluids (with the exception of alcohol) are not to be diminished except during meals. Only in cases of cardiac insufficiency are large amounts of water contraindicated. (4) Systematic bodily movements are advisable, except in anæmic individuals. (5) Diminish the hours of sleep and forbid sleeping during the day. (6) Increase the excretions by means of baths and fresh air.

Methyl Salicylate in Acute Articular Rheumatism.—Molteni, after a thorough trial of this drug, concludes as follows: (1) In sciatica the result was always satisfactory. (2) In chronic articular rheumatism the results were such that we can look upon this drug as the best known therapeutic agent of the present day. (3) In acute febrile articular rheumatism methyl salicylate proved useless in children, and of slight value in adults. Still the drug lessened the local pain. (4) In arthritis of the vertebral column it proved of no value in old cases, but very good in fresh cases. In sero-fibrinous pleurisy it gave excellent results. The method of application consisted in pencilling the affected region once daily with equal parts of olive oil and methyl salicylate.—*Wiener medizinische Blätter*, August 11, 1898.

Cystitis and Pyelitis: Differentiation.—Dr. George Rosenfeld concludes as follows: (1) An alkaline reaction of the urine is not found in uncomplicated cases of pyelitis. (2) The border line of the maximum amount of albumin in cystitis is from 0.1 to 0.15 per cent. (3) If most of the pus cells are irregularly contorted, the case is probably one of pyelitis. (4) If the existing red blood cells are for the most part chemically or morphologically destroyed, it speaks—if the hemorrhage be microscopic and in the absence of tumor of the bladder—for pyelitis.—*Wiener klinische Rundschau*, September 11, 1898.

Predisposing and Etiological Factors in Infantile Spastic Hemiplegia.—König (*Allgemeine medicinische Central-Zeitung*, July 2d) concludes as follows: "(1) We know of but three etiological factors in the causation of the cerebral hemiplegia of children: (*a*) severe labors, especially if the child is born in a state of asphyxia; (*b*) trauma of the head; (*c*) the infectious diseases. (2) All other factors can be looked upon as predisposing agents, according to our present knowledge. Of course the possibility of these becoming etiological factors is not altogether excluded. (3) The difficult labor as well as the asphyxia and head trauma may under certain circumstances act as predisposing agents. (4) In those cases with an etiology we often meet with predisposing factors. (5) In the vast majority of cases in which an accurate history can be obtained, numerous predisposing conditions can be found. (6) The traumatic infantile hemiplegia cannot at present be placed in a separate category. (7) The psycho-neurotic heredity as well as alcoholism of the parents occupies a prominent place among the predisposing causes. (8) The existence of family cachexia is of still greater significance. (9) Phthisis seems to exert a certain predisposing influence upon the condition. (10) Syphilis occupies only a secondary position."

Vaginal Hysterectomy.—Dr. Friedrich Schauta, in his book, "Lehrbuch der gesammten Gynäkologie," states that he performs total vaginal extirpation of the uterus in the following conditions: (1) In carcinoma or sarcoma of the cervix or body of the uterus if the carcinoma is limited to the uterus or its immediate neighborhood. (2) In myoma of the size of a child's head, provided the uterus is freely movable. (3) In total prolapse of old women with atrophy of the pelvic floor, marked hypertrophy of the uterus, when a plastic operation does not offer any hope of success and when treatment with pessaries has proven useless. (4) In inflammatory conditions of the adnexa, when the marked discomfort cannot be relieved by means other than operation. (5) In chronic inflammation of the uterus and endometrium, when repeated therapeutic measures, particularly curettage, have proven useless, and when dangerous hemorrhage repeatedly occurs. (6) In severe atonic hemorrhage during the puerperium, as well as in rupture of the uterus in exceptional cases.—*Deutsche Medizinal-Zeitung*, August 29, 1898.

On Poisoning by Coal Gas.—Dr. G. Cruz (*Ann. d'Hygiène Publique*, May, 1898) believes that it is possible to differentiate those cases of poisoning in which coal gas has been directly inhaled from those due to the inhalation of the products of incomplete combustion. In experimenting upon animals he has found that the blood of those poisoned by coal gas always

contains minute traces of hydrocarbon, while that of animals poisoned by the products of incomplete combustion (coal, wood, anthracite) did not show the faintest trace of hydrocarbon. On account of the infinitesimal quantity, the writer has been unable to determine the form in which the hydrocarbons existed. Their presence was determined by the following method: With an air pump the hydrocarbons were exhausted from the blood; then by means of an electric spark passed through the exhauster they were converted into acetylene. An ammoniacal solution of chloride of copper was then employed to develop the typical reaction. If this method is to be relied upon, it will prove of great value in forensic medicine.

Rectal Administration of Salicylate of Sodium in Rheumatism.—Dr. Harlet, of Roubaix (*Klinisch-therapeutische Wochenschrift*, No. 32, 1898), asserts that rectal administration possesses the advantage of more rapidly relieving the pain; heart complications and relapses are avoided, and the digestion is not disturbed. He orders from eight to twelve grams of sodium salicylate daily, in two clysters, to which a few drops of laudanum are added. The rectum is previously irrigated. The drug is absorbed in from six to eight hours. Every second day the dose of salicylate is diminished by one gram until the daily dose is seven grams, when but one clyster is given. Tinnitus aurium seldom results and vomiting rarely occurs. The method gives good results, not only in acute rheumatism but also in the subacute form, in gonorrhœal arthritis, in rheumatic iritis, and in pleuritis *a frigore*.

On the Origin of Post-Mortem Ecchymoses.—*Treatment*, part i., July 14, 1898, reviews an interesting article of Dr. Albin Haberder (*Viertelj. f. ger. Med.*, April, 1898). The late Professor von Hofmann, of Vienna, was the first to draw attention to the important fact that in dead bodies not only may ecchymoses become more extensive, owing to hypostatic congestion, but capillaries may even burst, and thus produce hemorrhages which differ in nothing from those petechial hemorrhages which occur during life. When bodies, twenty-four to forty-eight hours after death, were suspended, it was possible to produce extreme degrees of hypostatic congestion, but no ecchymoses; but if bodies were suspended a short time after death, the results obtained were as follows: In all the bodies of seven newly born infants which were suspended shortly after death, small punctiform or streaky hemorrhages were produced in the conjunctiva of the eyeball in from a few to twenty-four hours after suspension, which could not be distinguished from ordinary ecchymoses which had been produced during life. It was also possible to watch the gradual enlargement of these hemorrhages; in some instances small petechiæ were produced, even in the cortex of the hemispheres of the brain over the convexity, which looked like those produced by commotion or capillary embolism. . . . Before suspension there was not the slightest evidence of conjunctival hemorrhages, even in examination with a magnifying lens. . . . It is not a rare thing to find numerous petechiæ in the skin over the chest or abdomen, the shoulders, arms, neck, and face of bodies of people who have been found dead, lying in bed with the upper part of the body hanging out over the edge of the bed. . . . But it is not necessary that the bodies should be found in a dependent position; even those which are stretched out horizontally on their back show sometimes—especially when their blood remains liquid for a long time—quite a number of petechiæ on the back and the lateral sides of the chest and abdomen. The fact that these petechiæ are more often found in old people justifies the supposition that the greater vulnerability of the walls of the capillaries in old people predisposes their bodies to ecchymoses of this kind. Occasionally these ecchymoses are found in the bodies of persons who died from prussic-acid poisoning, and in children who have been suffering from rickets or acute and chronic gastro-enteritis. It is quite possible that the origin of these post-mortem petechiæ is to be sought in minute capillary hemorrhages which occur in the agonal stage, and become visible only after death, owing to hypostatic oozing of blood from minute rents in the capillary walls. The differential diagnosis between post-mortem ecchymoses and those produced during life is very difficult as long as the hemorrhage is only small. Theoretically, one might say that in intra-vitam hemorrhages the blood ought to be coagulated; but we know now that the blood retains its coagulability for some hours after death; and if, as is often the case, a post-mortem hemorrhage takes place between muscle fibres, it may be impossible to remove it thence with water. But when one finds on cutting into an ecchymosis that the blood flows out by itself or on gentle pressure, then it is clear beyond doubt that the ecchymosis has occurred after death. . . . During life ecchymoses are much more frequently observed in children than in adults. The same seems to hold good also as regards post-mortem ecchymoses in internal organs, whereas cutaneous ecchymoses are more frequent in adults than in children. It cannot be doubted that occasionally ecchymoses are formed in the lungs, the heart, and the thymus in consequence of the pressure of the blood, which, following the law of gravitation, after death is collected in the dependent parts of the body; but it must also be remembered that in many instances minute lesions may have occurred in the walls of capillaries during the agonal stage, which, after death, become larger, and therefore visible to the naked eye. Nothing could be more injudicious than to diagnosticate death from suffocation because a few ecchymoses have occurred under the pleura or the pericardium of children who have been found dead in bed. Such ecchymoses are of diagnostic value only when they appear in parts where there is not, and never has been, any hypostatic congestion, when there are signs of hyperæmia and congestion which have existed during life, and when infectious and septic diseases, diseases of the blood and indications of poisoning can be absolutely excluded.

The Chemical Relations of Remedies in Scientific Therapeutics.—Dr. John V. Shoemaker (*Journal of the American Medical Association*, September 24th) says: "As the active principles of all plants have not yet been isolated, it need be no wonder that in a new field, and dealing with complex animal tissues, this problem, for most substances, remains unsolved. A beginning, however, has been made. The efficacy of orchitic extract depends upon the presence of an organic crystalline substance called spermin, which exists in combination with hydrochloric acid. The active principle of the thyroid gland is believed to be the substance isolated under the name of iodothyrin. In the same way the antitoxins, in so far as they have been discovered, may be looked upon as the active principles of the immunizing or curative serums. Schaefer and Oliver have obtained from the medullary portion of the suprarenal bodies an organic principle which has a powerful action upon the heart, voluntary muscles, and peripheral arteries. The serums obtained from animals rendered artificially immune contain antitoxins, and have proved of more value than those from animals naturally immune to certain maladies. The typical instance of success in this form of therapy is diphtheria antitoxin. The wonderful reduction in the mortality from diphtheria which this

preparation has effected cannot be gainsaid. Every physician should seriously debate in his own mind whether he has done his duty in a case of diphtheria, if he has neglected to take advantage of the immunizing properties of diphtheria antitoxin."

How to Diagnosticate a Movable Kidney.—Dr. C. W. Suckling, in an article entitled "On Movable Kidney, with Special Reference to its Influence on the Nervous System" (*Edinburgh Medical Journal*, September), says: "The diagnosis can be made only by palpation of the abdomen, the patient lying down. To feel the right kidney the right hand should be placed on the abdomen, the thumb being on the last rib at the back and the fingers in front below the costal margin. The kidney may be felt with slight pressure of the fingers if it is pressed down, but if not, when the patient draws a deep breath, the kidney will slip into the fingers and can be slipped back easily. A common mistake is to palpate the abdomen with the flat of the hand; this simply pushes the kidney in front of the hand. The best way is to get the kidney between the thumb and fingers, and not to press too heavily, so that the kidney cannot come down. When the patient assumes the sitting or standing position, the kidney comes down more than it does during inspiration when he is lying down, and it is necessary, before concluding that the kidney is not movable, to examine the patient sitting or standing. In these two positions the patient should lean forward and try to relax the muscles. To illustrate the importance of this, two years ago I sent to a surgeon to be operated upon a woman who had a movable kidney and was unable to do her work. The surgeon could not find the kidney when she was put under the anæsthetic. He sent for me the following day to examine the patient again. I could not find the kidney while she was lying upon her back, but when she sat up the kidney could at once be felt in the right iliac fossa. In examining the left kidney the left arm should be placed around the body, the physician standing on the right side of the patient, the fingers being placed under the last rib; the right hand should be placed under the left costal margin. On drawing the breath or on sitting or standing, if the kidney be movable, it will be felt between the fingers and can be made to slip up in a most characteristic way. The left kidney rarely falls to the same degree as the right. I have never observed it to fall below the umbilicus, while the right kidney frequently falls into the iliac fossa and even into the pelvis. It is remarkable that the left kidney feels much smaller than the right."

Health Resorts and Infectious Diseases. — The public of Great Britain, and doubtless the public of other countries, remarks *The Lancet*, still betray an almost criminal slackness as to the sanitary conditions, equipment, and administration of the "health resorts" to which each recurring summer the holiday-makers betake themselves. Business men, who, as members of their urban or rural district councils, have or ought to have sanitary matters constantly before them, give not a thought to the drainage, the water supply, or the isolation accommodation of the "health resorts" to which at no small expense they send their wives and children. Much less do they take the trouble to ascertain whether infectious diseases may be prevalent in the locality, or if perchance the previous occupants of the room or lodgings have suffered from such diseases. What a reform might be brought about in the sanitation of many of our so-called "health resorts," if, before selecting his annual camping-ground, the head of the family were to ask for certain information from the local medical officer of health!

Surgical Suggestions.

Amputation in Old People. — In old people we must be careful in the use of the Esmarch bandage not to crush the brittle arteries, and so cause thrombosis and sloughing of the flaps.—J. P. Dunn.

Treatment of Tetanus.—(1) Behring's tetanus antitoxin is an efficacious remedy of a specific character, and should be used at the earliest possible moment. (2) The earliest destruction of the infected area must not be omitted, as from it a permanent supply of toxin is provided. (3) The symptomatic treatment with sedatives, including narcotics, should go hand-in-hand with the serum treatment. (4) Other means of eliminating the tetanus poison should not be neglected. (5) Preventive serum treatment deserves further consideration. — Dr. Heddaeus, *Münch. med. Woch.*, March 29th.

Treatment of Harelip. — Dr. Mulford (*Boston Medical and Surgical Journal*, March 3d) gives a *résumé* of the important points, which include the following considerations: (1) Harelip babies are not necessarily feeble at birth, and by proper feeding can be kept up to the normal standard. (2) Keep the field clean with aseptic washes before the operation. (3) Operate in the sixth or the eighth week. (4) Do not slash with scissors, but cut and trim carefully with a knife. (5) Free the upper lip thoroughly from the jaw. (6) Anchor the nares with shotted wire. (7) Use no pins or heavy outside sutures. (8) Use *crêpe-lisse*, not surgeon's plaster. (9) Leave the heavy inside stitches for six weeks. (10) After operation, give special attention to the care of the bowels and to proper feeding, as on this very often hangs the whole success of the operation.

The Treatment of Appendicular Inflammation.—Dr. Joseph Eastman (*Medical and Surgical Monitor*, June) concludes that: (1) The unqualified dictum, "Operate as soon as the diagnosis of appendicitis is made," is unsound, unsafe, and often pernicious. (2) Appendicitis is a disease demanding surgical treatment at the hands of the expert in abdominal work, for the reasons: (*a*) In no abdominal operation is so thorough mastery of the principles and technique of asepsis necessary; (*b*) the operator with an experience of hundreds of abdominal sections can give the patient a better chance of life than one who only occasionally opens an abdomen. This need not deter any surgeon or physician from operating in an emergency. (3) After an attack of appendicitis the patient is carrying an open communication between the intestinal lumen and the peritoneal cavity, which, if temporarily closed, may open at any time by absorption of the exudate or adhesions which have temporarily closed the leaking sinus. (4) The cases cured (?) by medicine should, during convalescence from the cure (?) be submitted to a surgical cure in fact, not in fancy, for the reason that operation in the interval between attacks is less dangerous than are medical cures. (5) All cases in which an appendical abscess has been opened come under the same head as medical cures (?), and demand surgical cure in fact, not waiting for a second explosion of dynamite. (6) Who would think of living in a house with a burst, leaking sewer, sending out microbic infection and poison, depending upon the degree of filth, fæces, and fungous granulations or accumulations hermetically to seal up the opening? It would be contrary to all the best principles of correct science or good surgery and of sound sense. (7) "Surgery should be the handmaid of medicine, not supplanting her mistress nor yet usurping her rights, but rather assisting her to maintain them."

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INCOMPATIBILITY OF DISEASES AND PREDISPOSITION TO THEM.

THE hæmatological and clinical observations of the fevers from which our soldiers suffered during the late war have served to dispel the teachings in which most of the present generation of physicians were brought up, in reference to the incompatibility of malarial and typhoid fevers. There seemed to be no good and logical reason why a person suffering from typhoid fever should not be susceptible to infection with the malarial plasmodia, in the presence of conditions favorable for the production of the latter disease. The asthenia which so frequently goes with typhoid fever would seem to offer a *locus minoris resistentiæ* for all sorts of infection, including that of the plasmodium. Be this as it may, the theory of the coexistence of malaria and typhoid in the same patient was held by practically all teachers and clinicians to be fallacious, until the recent researches in connection with our sick soldiers demonstrated the contrary. It has now been proven beyond a shadow of doubt that mixed infection exists, and that malaria and typhoid may occur as distinct and separate diseases in the same patient. In tuberculosis we have a disease which shows a special predilection for the victims of certain ailments, and yet it seems carefully to shun those who are already suffering from other pathological conditions. Thus, tuberculosis is rarely found in subjects of chronic heart disease, particularly mitral stenosis and insufficiency. The chronic pulmonary congestion which results from the lesion appears to form an unfertile ground for the development of the tubercle bacilli. Moreover, if a tuberculous patient falls prey to a cardiac lesion, the phthisical symptoms, according to Ortner, are ameliorated by its presence. These remarks apply, of course, to lesions of the left heart; disease of the right heart, particularly pulmonary stenosis, favors the production of pulmonary tuberculosis, on account of the anæmia of the lung to which it gives rise. Turning to the respiratory apparatus, we find that tuberculosis rarely attacks the subjects of emphysema, bronchial asthma, or bronchiectasis. If it attacks an emphysematous patient, it runs a slow and chronic course. Neusser states that myxœdema, paresis, and chronic alcoholism contribute largely to the positive side; while Basedow's disease, tabes dorsalis, leukæmia, gout, and the uric-acid diathesis seem to protect against the disease. Generally speaking, carcinoma and tuberculosis do not go together. The exception to the rule is found in carcinoma of the œsophagus and of the cardiac end of the stomach, in which conditions tuberculosis is of common occurrence. This is explained by the fact that in the latter cases the circumstances are such as to favor cachexia, on account of the extreme difficulty in properly feeding and nourishing the patients. Bright's disease, in accordance with the teachings of the Vienna school, protects against tuberculosis. A primary tuberculosis, however, is not an infrequent source of parenchymatous and amyloid degeneration of the kidneys. Hysterical patients, for some unknown reason, appear to be immune so far as tuberculosis is concerned. If it develops at all in these subjects, the course is usually mild. Diabetes forms a favorable soil for the growth and development of the tubercle bacillus, and, according to Murchison, tuberculosis follows typhoid more frequently than any other fever. Finally, the catarrhal sequelæ of measles, whooping-cough, diphtheria, and scarlet fever often pave the way for the development of tuberculosis.

HAWAII FROM A HEALTH POINT OF VIEW.

HAWAII is now American territory, and with its annexation the government has taken upon its shoulders not only the responsibility of ruling, but also the task of looking after the health of its inhabitants and supervising the sanitary arrangements of the island. When the existing condition of affairs as regards matters hygienic and the state of public health generally in Hawaii is taken into consideration, it must be conceded that the labor will be Augean. For many years the Sandwich Islands have been hotbeds of disease, and, until drastic remedial measures have been put into force, are likely to remain so. In the MEDICAL RECORD of April, 1889, Dr. Prince A. Morrow, who probably is better acquainted with the subject than any one else, contributed some notes of observation on matters medical in the Sandwich Islands, which, although some few years have elapsed since they were written, will to all intents and purposes apply with equal truth to the present situation there. After referring to the physical and mental characteristics of the natives, Dr. Morrow says: "The demographic effects of introduced diseases in a virgin soil can nowhere better be studied, and they exhibit facts of the most remarkable interest. The natives have proven strangely susceptible to the diseases of civilized life, and trifling ailments, such as measles, whooping-cough, etc., acquire by their transplantation into this soil all the virulence of a fatal pestilence. Measles and whooping-cough, introduced in 1849, almost decimated the population; the mortality was excessive, almost every case terminating fatally. The ravages of smallpox, introduced in 1853, were none the less frightful. In the island of Oahu over fifteen thousand died, and the marshal of the islands informed me that he superintended the burial of ten thousand victims of this dis-

ease in Honolulu alone—more than one-half of its entire population. . . . The most important agency in the depopulation of the islands has been attributed to syphilis, which was introduced by Captain Cook and his men in 1778. The licentious habits and promiscuous intercourse of the inhabitants caused it to spread like wildfire through the islands."

Syphilis is still a terrible scourge in Hawaii, but of all the diseases prevalent there the most loathsome and deadly is leprosy. With regard to leprosy, Dr. Morrow says, in 1889: "Nowhere else in the world can be found a parallel to the extraordinary development and rapid spread of this disease, which in the short space of little more than one generation has attained such alarming proportions and proved such a terrible menace to the public health."

That matters have not changed much for the better in this respect, an article by Dr. Burnside Foster, in the *North American Review* of September last, would seem to demonstrate. Dr. Foster says: "Leprosy up to 1849 was unknown in the Sandwich Islands, at which date it was introduced by two Chinese sailors, and the disease has spread so rapidly that at the present time nearly ten per cent. of the Hawaiian natives are lepers."

Dr. Osler takes exception to these extreme views of the prevalence of the disease, but there seems to be no doubt that its ravages are very extensive. Although the lepra bacillus was discovered by Hansen so long ago as 1874, our knowledge with regard to its etiology has advanced but little; authorities are, however, unanimously agreed as to its contagiousness.

These being the facts of the case, what steps should be taken by the government of this country to prevent the spread and to endeavor to stamp out the disease, root and branch? Dr. Foster, in the article referred to above, emphasizes the necessity of creating a department of public health, with a minister in the President's cabinet, and also suggests the appointment of a leprosy commission to investigate the disease on the spot, and to make, so far as is possible, an accurate census of the lepers of Hawaii, and to see that all infected persons are completely segregated. There is yet another important point to be considered, to which Dr. Foster draws attention—that the government must educate the people—the soldiers, civil servants, and those who go to Hawaii for commercial purposes and who are likely to be brought into contact with lepers—in regard to the dangers of infection and the precautions necessary to be taken. The end in view should be the total extinction of leprosy. This result can be attained only by the complete segregation of those afflicted, which is impossible until our knowledge of the etiology of the disease is more precise and accurate than at present. Therefore, the first move on the part of the United States should be the immediate appointment of a properly organized and equipped bacteriological commission. To devise means to extinguish the foul disease of leprosy would redound as much to the glory and credit of America as did the discovery of vaccination to England or the discovery of the principle of serum immunization to France.

SOME REFLECTIONS ON THE ENGLISH VACCINATION BILL.

The reasons for passing the new vaccination act in England are scarcely understood in this country. Doubtless the government has been weak minded in thus deferring to the wishes of a minority, to the imminent danger and risk of the great body of the people, and probably the wiser and safer policy would have been, as the *Times* suggested, to make more stringent compulsory vaccination laws, and to see that they were properly carried into effect. Here in America, however, we have no conception of the organized agitation which has for so many years been carried on against vaccination in England. It is, without doubt, true enough that the opposition was an inconsiderable minority, but it was a minority continually in evidence, noisy, vehement, and irrepressible. The physicians in England, too, were greatly to blame for the state of affairs, in that they took no pains to controvert the arguments of the antivaccinationist faddists, and made no attempt to educate the more ignorant members of the community as to the benefits conferred by vaccination, in consequence of which every false and misleading statement was firmly believed in. Latterly things have arrived at such a pass, that some steps had to be taken to offset the disgraceful condition of chaos into which the carrying out of the vaccination act had fallen; and, although the mode of procedure decided upon to reach this result is generally believed to be a mistaken one, yet it will at least have the effect of knocking from their hands the most powerful weapon used by antivaccinationists against a compulsory measure. There will be no opportunity now to pose as martyrs. The situation under the new act is, according to a newspaper writer, in brief as follows: Within four months of the birth of a child (or of the passing of the act in the case of children previously born) the parent will be visited at his home by the vaccination officer; and if in the absence of a certificate of conscientious objection the parent refuses to allow the child to be vaccinated, he will be liable to prosecution twice only till the child is fourteen years old. The alleged dangers of the operation are reduced to a minimum, so far as modern science has enabled human foresight to provide against them. It will therefore be observed that everything possible, with the exception of a total repeal of the vaccination laws, has been done to study the wishes and defer to the susceptibilities of the opponents of vaccination; but those in England who know assert that all this will be of little avail. *Public Health*, commenting on the matter, says: "That the organized opposition against vaccination will be propitiated by the large concession thus made to it, or by the important improvements which the act introduces in the shape of glycerinated calf lymph and domiciliary vaccination, it seems hopeless to expect. The antivaccination league has, since the bill was passed, given ample proof that its hostility to vaccination is in no degree mitigated. Nothing less than the entire disestablishment of the 'Jennerian rite' will satisfy it, and we may therefore reckon with certainty on a

continuance of the methods of misrepresentation and casuistic perversion, which it has so persistently practised for years past." This statement, if true, and there seems no cause to doubt its truth, gives the promise of a pleasant outlook for those peaceful, law-abiding inhabitants of England who believe in vaccination and who form the large majority of the population. It may appear a cruel prediction, but probably the only solution of the difficulty would appear to be the occurrence of a severe and widespread epidemic of smallpox. Such an event would at any rate rouse from their lethargy the great mass of the people, who would doubtless then insist that the health of the community at large should not be sacrificed to the fads of an irreconcilable minority. The action taken by Lord Lister in the matter has given rise to some surprise, both here and in England. There is no doubt that if he had not given the bill his qualified support and spoken in its favor it would have been again rejected by the house of lords. However, it must not be argued from this fact that Lord Lister has in any way lost his faith in the efficacy of vaccination. He believes in it as strongly as ever he did, but he was on the horns of a dilemma. He had to choose between the withdrawal of the bill, as recommended at the meeting of the British Medical Association, and an acceptance of it in its present form, as a makeshift tempered by the promise of early legislation to supplement its defects. In short, the bill is a sop to the antivaccinationists and an experiment. We are of opinion that both Lord Lister and the government have erred greatly in trying so risky an experiment, and in this country we shall be content to travel in the same path as sensible little Scotland and hold fast by compulsory vaccination.

THE STUDY OF TROPICAL DISEASES.

The *British Medical Journal* of September 24th may rightly be termed a tropical number, as, besides a full report of the proceedings of the section on tropical diseases at the meeting of the British Medical Association and other contributions bearing on the same subject, all the leading articles and the greater portion of the editorial matter are devoted to the consideration of the diseases prevalent in hot climates. Thus the issue will be found most useful to those interested in the matter, and a valuable addition to its constantly increasing literature. In the first instance it is pointed out that, notwithstanding her unique opportunities for studying the diseases incidental to the tropics among her many possessions in those regions, England has up to a comparatively recent date taken but a languid interest in the subject. Germans, Italians, and Frenchmen have all taken the lead, while, to quote the *British Medical Journal*, "the rising American school of pathologists, particularly those of the Johns Hopkins University, also stepped in and did much to impart new life to what, so far as the British branch of the Anglo-Saxon race was concerned, was a languishing subject." All this has, however, within the last few years, undergone a complete change, and the anxiety now displayed by British scientific men —in a manner of speaking—to make up for lost time is highly laudable and augurs well for the future.

To Dr. Patrick Manson is greatly due the impetus given to this branch of study, as well as to Maj. Ronald Ross for his valuable investigations in working out and placing on a practical basis Dr. Manson's theories. Referring to the activity now being exerted in the field of tropical research generally, and more particularly to the investigations of Ross, the *British Medical Journal* remarks: "As an example may be cited the case of Ross' remarkable discoveries. Results of the utmost value to humanity may very well acrue from Ross' demonstrations that the mosquito is an element in the propagation of malaria. This fact distinctly points to the possibility of a practicable prophylaxis to this worst scourge of mankind—a prophylaxis which, if effected, will do more to open up and civilize Africa and other dark places of the earth than even the sirdar's brilliant victories."

The series of articles in our able contemporary concludes with one on the much-disputed question as to whether the white man can ever become properly acclimated in tropical lands, and some articles recently contributed to *The Times* by Mr. Benjamin Kidd are taken as the text for discussion. Mr. Kidd gave it as his decided opinion that it is absolutely impossible under any conditions for the white man to thrive physically in the torrid zone. This dogmatic assertion is strongly combated by the writer in the *British Medical Journal*, who not only brings forward against this contention the opinions of such authorities as Dr. Sambon, but shows that in those places—as Jamaica, for instance—which at one time were veritable hotbeds of disease efficient sanitary measures have had the effect of converting them into quite healthy localities. This appears to us to be sound and fairly conclusive reasoning, and we may with confidence look forward to that time when the deadly diseases of the tropics will have been grappled with and conquered by the aid of modern science.

Ecclesiastical Disapproval of Clerical Quacks.—The priestly quacks at Woerishofen, who have succeeded to the water-cure business of the late Father Kneipp, have recently suffered a rebuke from the bishop of Augsburg, in whose diocese they are. "Certain regrettable statements," the bishop writes, "which have recently been put forth by men not justified through sufficient learning to enunciate them, but moved thereto by hope of gain, constrain us to warn in the strongest terms our beloved sons of the clergy and laity in the diocese of Augsburg to observe in all particulars the decrees of the Roman Church promulgated against the illegal practice of medicine by those whose lives are consecrated to the service of God in His sanctuary." The clergy are also exhorted so to comport themselves as not in any way to interfere with the practice of individual physicians, and also to keep on terms of friendship and mutual co-operation with all the lawful members of the medical profession in their parishes.

News of the Week.

The Yellow Fever in the South is spreading rapidly through Mississippi, and bids fair soon to have the entire State within its grasp unless a killing frost puts a stop to it. Up to October 9th the total record of yellow fever for the summer is as follows: Louisiana, 704 cases and 33 deaths; Mississippi, 435 cases and 35 deaths. One case is reported from Arkansas, and 1 case and 1 death from Kentucky, among the Mississippi refugees. Total cases, 1,141; deaths to date, 69. The disease has been reported from thirty-five different places. The Mississippi State board of health despaired long ago of confining the infection, and is now devoting itself chiefly to the work of relief and of securing nurses for the places that are stricken. An appeal has been made to the federal government, but under existing laws the Marine Hospital service can only establish detention camps and maintain a corps of inspectors and physicians, but cannot furnish nurses or supplies. The State officials have been seized by the general panic, and, with the valiant governor at their head, have deserted their posts at Jackson and are in hiding in some out-of-the-way places. As soon as the yellow fever threatened to become epidemic, Governor McLaurin took his private secretary and transferred the executive department of the State government (very appropriately) to the insane asylum, two miles from Jackson. But this was too near his post of duty (and the yellow fever), so he gathered up his family and tried to get to his home at Brandon; but the people there wanted no possibly fever-infected governor, so they told him to march on. Since then he has not been heard of, and may still be running. Most of the other State officers have followed their official head, and no one remains in the capital, even to receive taxes. Nearly all of the whites who can, have fled from the infected districts, and the poor negroes are inclosed within a strict cordon, without any of the necessaries of life, in true reconcentrado style that would put Weyler to the blush. The wretched sufferers crowd as near to the line as possible, and beg for food for themselves and their families. The panic-stricken whites will not let them out, and have made no provision for their sustenance. The mortality from the disease continues low, but will doubtless begin to rise if starvation is added to disease.

The North Hudson County (N. J.) Medical Society was organized September 29, 1898, when the following officers were elected: *President*, Dr. E. J. Kuehne, of Jersey City; *Vice-President*, Dr. E. C. Armstrong, of Union; *Secretary and Treasurer*, Dr. A. J. Walscheid, of Union. The society began with twenty members, and four new members were admitted at a meeting held on October 6th.

New York State Medical Association.—The committee of arrangements has secured a reduction in railroad fare from the Trunk Line Association, of one and one-third fares for the round trip, to members of the New York State Medical Association and their families visiting New York at the time of the meeting —October 18th, 19th, and 20th—provided that one hundred persons who pay full first-class fare of seventy-five cents or upward, coming to the meeting, avail themselves of this privilege. To make this reduction effective, certificates must be obtained from the ticket agent at the starting-point or nearest station issuing through tickets to the place of meeting. This certificate, to be valid for the reduction on the return fare, must be indorsed by the chairman of the committee of arrangements, and *viséd* by a special agent of the Trunk Line Association, who will be present at the place of meeting for that purpose on October 19th and 20th. The committee has also completed arrangements for a banquet at the Manhattan Hotel, Madison Avenue and Forty-second Street, which will take place on the evening of October 19th. Already over one hundred have signified their intention of being present. Dr. F. H. Wiggin is chairman of the committee of arrangements.

Diphtheria Quarantine.—The Boston board of health has made a new rule, requiring two consecutive negative cultures from the throat before granting the release from quarantine of diphtheria patients. The general rule with boards of health throughout the country has been to refuse release from isolation until one negative culture at least has been obtained. But investigations carried on in the Boston health department show that in very nearly one-third of such patients, released on the evidence of a single negative culture, the Klebs-Loeffler bacillus is still present.

Drumming for the Quacks at Hot Springs.—A special agent of the department of the interior has been making an investigation of the condition of affairs at the Hot Springs reservation in Arkansas, and reports the existence of a number of abuses. The report says: "By far the most serious question in connection with Hot Springs affairs, and the one which menaces the life and health of persons who go there seeking treatment, is the practice of drumming. There are drummers for three different businesses at Hot Springs, viz., drummers for bathhouses, drummers for hotels and boarding-houses, and drummers for the doctors. The most harmful thing, however, to Hot Springs, for the reason that it is the most dangerous thing for persons who go there for treatment, is the present system of doctor drumming. There are a great many doctors in Hot Springs who are notorious in the matter of having drummers for their business. The custom about this is that strangers are met on the trains and in towns more than one hundred miles away from Hot Springs by drummers for these doctors. The drummers make the point, before taking the victim to the doctor, to ascertain relatively his financial standing, then to advise the doctor as to this matter, and the man is duly fleeced." It is said that two United States senators were among the victims last winter. The interior department is seeking for some way to put a stop to these abuses, but finds itself hampered by the fact that the reservation is under the judicial control of the State of Arkansas, and it is said that

the State laws have many loopholes through which these irregular practitioners can escape. In order to stop the drumming, the department proposes the adoption of a regulation providing that no bathhouse receiving water from the Hot Springs reservation shall permit any person to bathe therein who has not a certificate from a reputable physician, who does not resort to drumming. The superintendent of the reservation or a board of surgeons, to be appointed by the secretary of the interior, will be required to certify to the professional standing of physicians prescribing baths at Hot Springs, and no one who is known to drum for custom will get a certificate which will entitle his patients to bathe at the bathhouses.

A Bequest to the University of Vermont.—The will of the late Dr. Thomas Seton Robertson, of this city, after providing for legacies of mementos to various friends of the deceased, bequeaths all the residuary estate, estimated at about $5,000, to the medical department of the University of Vermont (Burlington, Vt.), for a fund to be devoted annually to the purchase of microscopes as prizes for students.

An Offended Osteopath.—A man, called William Smith, M.D., D.O., has brought suit against the *Medical Age* for $25,000 damages because of an alleged libel, the editor of the journal having spoken disrespectfully of another man, named Still, who is accredited with being the founder of "osteopathy," whatever that may mean.

Medical Inspection of Schools in St. Louis.—The members of the Medical Society of City Hospital Alumni of St. Louis have offered their services gratuitously to the board of education for the purpose of conducting a daily medical inspection of the pupils in certain schools, in order, they say, that a practical local test may be made of a service that has been found so valuable in a sanitary sense in other cities. It is proposed to select ten schools, which will fairly represent the entire school population, and have them visited daily, during October, November, and December, by physicians whose duty it will be to advise the several principals in the cases of pupils found ailing, and suggest the most judicious course to be pursued—the object of the service being the earliest possible detection of such diseases as diphtheria, scarlet fever, croup, etc., and the prevention of their further spread. This offer has been accepted by the St. Louis board of education, and the preliminary details are now being worked out by the committee of the Medical Society of the City Hospital Alumni.

Behring's Degradation.—We are all the more surprised that Professor Behring should have applied for such preferential rights, more especially as he never was instrumental in making the theory—which he, in conjunction with Professor Kitasato, had put forward—practical for the treatment of diphtheria in mankind. This was reserved for Dr. Aronson, who first succeeded in making from the horse a serum of sufficient strength so as to make it practical for the checking of the disease itself. So far as Behring and Kitasato had gone in making serum from the goat and calf and other minor animals, they never had the courage to expect or to pretend that the serum they produced, and which was of very inferior strength, would be a remedy for diphtheria in mankind such as Aronson showed he could supply. They had contented themselves by having found some serum likely to be used for inoculation purposes, similar to the lymph of small-pox. Dr. Aronson had a right to a patent for developing a minor theory into a grand remedial agent never before dreamt of, but he never enforced his claim, for obvious reasons.—*The Therapist.*

A Miscarriage of Justice.—A physician in Peoria recently brought suit to recover fees, before the magistrate's court. A jury was summoned, and, after hearing the testimony, not only disallowed the account, but, upon the mother's plea that her daughter was not benefited, actually assessed against the attending physician the sum of some $30, to reimburse the mother for services as nurse in the case.—*Peoria Medical Journal.*

The Medical and Commissary Departments in the Soudan Campaign.—Lord Kitchener, in his report of the Omdurman expedition, published last week in London, warmly commends the commissary, medical, and transport departments. The sirdar speaks with special emphasis of the "excellent rations which were always provided and kept the men strong, healthy, and fit to endure all the hardships of an arduous campaign, enabling them at a critical moment to support excepitonal fatigue, continuous marching, and fighting for fourteen hours during the height of a Soudan summer."

Apparent Increase of Insanity in Ontario.—In a recent report of the Ontario asylums inspector, it is stated that each month of the present year has witnessed an increase over its predecessor in the number of inmates in the lunatic asylums. The number of inmates in August was 5,032, while that of July was 5,011. There are only 35 vacancies in all the asylums in the province, and 90 former inmates are out on probation, while 48 are confined in jails. The increase is thought to be due to the fact that mentally affected persons are more closely looked after now than formerly.

Notification of Venereal Disease in Prussia.—A circular was recently sent by the police authorities to all the physicians in Berlin, directing their attention to the Prussian regulations for the compulsory notification of cases of venereal disease. Notification is not obligatory for all cases of syphilis or gonorrhœa indiscriminately, but for those only in which, in the opinion of the doctor, secrecy might be followed by harmful results to the patient or to the community. Civil physicians treating syphilis in soldiers must report all such cases to the commander of the regiment or the chief surgeon. Surgeons who have cases of venereal disease in their practice are called upon to search out the person from whom the infection has been conveyed, and, wherever necessary, to report such person to the police.

Reviews and Notices.

RECHERCHES CLINIQUES ET THÉRAPEUTIQUES SUR L'ÉPILEPSIE, L'HYSTÉRIE ET L'IDIOTIE. Compte rendu du service des enfants idiots, épileptiques et arriérés de Bicêtre pendant l'anée 1897. Par BOURNEVILLE, avec la collaboration de MM. DARDEL, JACOMET, METTETAL, J. NOIR, PHILIPPE, RELLAY, SCHWARTZ, TISSIER et WUILLAMIER. Paris: Librairie du *Progrès Médical* et Felix Alcan. 1898.

THE eighteenth volume of Bourneville's "Researches" is quite as interesting as any of its predecessors. It gives abundant evidence of the immense strides made by pedagogy in the treatment of defective and idiotic children. The contributions to the morbid anatomy of idiocy and of symptomatic epilepsy deserve special mention. The work being done by Bourneville and his collaborators is deserving of the highest praise.

CLINICAL MANUAL OF MENTAL DISEASES. By A. CAMPBELL CLARK, M.D. New York: Wm. Wood & Co. 1898.

NO one interested in mental diseases can read this book without a keen sense of disappointment. It merits the unenviable distinction of being less up to date than almost any work of its kind. It is inaccurate in statement, inelegant and unpolished in expression, and decidedly unscientific. All that can truthfully be said in its favor is that it contains some interesting clinical histories and a few expressive photographs to illustrate the physiognomy of the insane.

LEHRBUCH DER NERVENKRANKHEITEN. Von PROFESSOR DR. OPPENHEIM. Second Enlarged Edition. Berlin: S. Karger. 1898.

OPPENHEIM'S text-book of nervous diseases has well merited a second edition. It is one of the most readable and helpful books on neurology in the German language. The author has for many years been known as an indefatigable worker in his chosen field, who has won the confidence and approbation of his fellow neurologists, both at home and abroad. The first edition of his book was accorded deserved praise in these columns, and we are glad to say that the book in its present form will be found both by the student and the practitioner to be a trustworthy, scientific, up-to-date exposition of the diseases of the nervous system. Standing as it does midway between the many compendiums on diseases of the nervous system and the exhaustive treatises, it has, in a way, a very important field, which it possesses admirably. The letter press and illustrations have been executed in a most commendable manner.

OVARIOTOMY AND ABDOMINAL SURGERY. By HARRISON CRIPPS, F.R.C.S., etc. Philadelphia: P. Blakiston's Son & Co. 1898.

THE combination of gynæcology with general abdominal surgery in a descriptive work is a good one. It calls attention to and emphasizes the fact that there is nothing in gynæcological surgery that makes it radically different from general abdominal work, and that in consequence the general surgeon ought to be prepared to cope with the surgery of the female pelvic organs. The author of this work has given us a comprehensive review, and one sufficiently detailed for all ordinary purposes. The colored plates are above the average in technical execution, but perhaps do not fulfil their purpose any better than less elaborate ones. The descriptions of the operations are, as a rule, good, but offer nothing novel. There is a good deal of the author's personal equation in them. The latter portion of the book is devoted to a long series of clinical histories of cases operated upon by the author, many of them of great interest and statistical value.

DISEASES OF THE NERVOUS SYSTEM. A Handbook for Students and Practitioners. By CHARLES E. BEEVOR, M.D. Philadelphia: P. Blakiston's Son & Co. 1898.

THE writer states in his preface that the objects of this handbook are to enable students and practitioners to know how to examine patients suffering from diseases of the nervous system, and to assist them in marshalling their facts in a definite order, and also to serve as an introduction to the study of the larger standard works on neurology. The reviewer desires to say at the outset that the writer does not convince him the objects have been attained. Only thirty-five pages are devoted to history taking and modes of examination. The author says nothing new and oftentimes puts that which he has to say very badly. It would not have been difficult for him, it would seem, to hit upon a more elegant heading for Chapter III. than "Method of Taking a Case." There are those who "take cases" by method, and those who do not.

The author's style is obscure, his diction oftentimes unpleasantly involved, and his phraseology is not devoid of such British barbarisms as "acuity," "it is as," "purposeless vomiting," etc. We do not admit that it is necessary to impress on the student that "in examining the mental condition of a patient, we should ascertain if he is comatose;" no more do we believe that the average student can make anything out of this: "The extent, distribution, and grouping of the paralyzed muscles will correspond to the anatomical motor supply of a peripheral nerve when the ulnar or median nerve is affected, and the loss of sensation will correspond to its anatomical sensory distribution." Nor can he make sense of "The general and functional diseases are arrived at after the organic diseases have been excluded," unless it dawns upon him that the author is thinking of diagnosis. It is scarcely worth the time to point out in detail the errors of omission and commission of this manual. If the book had virtues that counterbalanced its shortcomings, we would not refer to them at all, but it has not. A volume on nervous diseases in 1898 which says nothing of infection and epidemic occurrence in discussing anterior poliomyelitis; which asserts that in Landry's paralysis "as a rule nothing has been found post mortem," and that loss of sight which may become absolute is rather a common early symptom of locomotor ataxia; and does not mention Fränkel's method of re-educating the ataxic extremities in the treatment of tabes, does not appeal to us, nor can we recommend it to others, much as it would delight us to do so. With such compendiums of diseases of the nervous system to compete with as that of Dana the new comer must have genuine merit, if it expects to be admitted in the same class. That the one in question cannot be, it scarcely need be said.

Society Reports.

AMERICAN PUBLIC HEALTH ASSOCIATION.

Abstract of the Proceedings of the Twenty-Sixth Annual Meeting, Held at Ottawa, Canada, September 27, 28, 29, and 30, 1898.

THE association met in the railway-committee room of the house of commons, under the presidency of Dr. Charles A. Lindsley, of New Haven, Conn.

At the opening session twenty-six applications for membership were read and acted upon favorably.

Resolutions were presented by Mr. Henry Lomb, setting forth the desirability of sustaining all existing voluntary sanitary organizations and outlining a plan for the multiplication and extension of them. He said that the most promising direction in which energetic efforts could at present be exerted would be to devise and establish on a permanent basis a system for the instruction and training of persons who were already pursuing, or who might desire to engage in, the business of sanitary inspection. The association adopted this resolution:

"*Resolved*, That while the association recognizes the value of the local auxiliary sanitary societies in many of the States, yet effectual enforcement of the laws and ordinances designed to prevent the spread of diseases can best be assisted by supplying for employment by executive health officers men who have been taught the art of hygiene."

DR. C. L. WILBUR, of Lansing, Mich., offered the following resolutions, which were referred to the executive committee:

"*Resolved*, That the American Public Health Association earnestly recommends that a plan be incor-

porated in the act to provide for the taking of the next United States census, whereby reliable representative vital statistics may be secured for the non-registration States.

"*Resolved*, That the Association recommends that the Bertillon classification of causes of death be adopted by all the registrars of vital statistics in the United States, Canada, and Mexico, as soon as the change from the systems now in use can be conveniently made.

"*Resolved*, That the committee on nomenclature of diseases and forms of statistics be authorized to have printed and circulated among the registrars of the three countries a circular containing these resolutions, the report of the committee on which it is based, the three alternative forms of the Bertillon classification with explanatory notes on inclusion of terms and practical rules for compilation, and a list of the registration offices adopting the same.

"*Resolved*, That a proposal be made for an international alliance between the registrars of the three countries included in this association and the registrars of France and other countries now using, or which shall hereafter adopt, the Bertillon system, and that definite plans for such an alliance shall be submitted for action to the next annual meeting of this association."

The executive committee subsequently recommended the adoption of the above resolutions, and they were unanimously concurred in by the association.

An Outbreak of Typhoid Fever Due to an Infected Water Supply.—Dr. John L. Leal, of Paterson, N. J., read this paper. The author dealt with the pollution of the water supplied to the residents of that city. The outbreak established the fact that the germs originating in a single case of typhoid fever might infect even a large body of water, so as to reproduce itself among those dependent upon the same body of water for their public supply, even though the supply might be taken at a point some distance from the focus of infection. The cases of typhoid in the present instance had developed as followed: During the last half of September there were 26 cases; October, 41 cases; November, 108 cases; December, 58 cases. The disease was evenly distributed throughout the city, except in one district containing about two thousand people, and among all classes of the inhabitants. No possible common means of infection could be found except the public water supply, upon which all of those infected, with the possible exception of two or three, were dependent for at least a portion of the twenty-four hours. The only section of the city which did not contain a single case was not furnished with a public water supply. The water was taken from the Passaic River. No evidence of harmful pollution above the falls was shown. Chemical evidence of harmful pollution below the falls was found. After stating the time during which infection existed in the stream, the speaker related the case of a patient who had returned from a summer resort suffering from typhoid, who practically recovered but later was taken with a relapse, which lasted about a month before convalescence began. The river had been more or less continuously infected by cesspools from September 1st until November 24th, when the discharge pipe was discovered and further infection from that source prevented.

The Cause and Prevention of Infectious Diseases.—Dr. Peter H. Bryce, of Toronto, read an exhaustive report as chairman of the committee on this topic. He stated that infectious diseases must be divided as regarded their mode of causation and their growth and development. With reference to the methods for suppressing outbreaks of diphtheria in a community, he said that further experience in Ontario during the past year had shown that the following seemed the most effective and prompt means of stamping out an outbreak: In a number of municipalities where the disease appeared, as it always did, principally among school children, the practice was introduced of a morning visitation by the sanitary inspector to all the public schools to obtain a list of the day's absentees. The homes of these were promptly visited, and where any evidence of malaise and sore throat was present the parents were at once required to send for a family physician and have a swab taken and forwarded to the medical officer by the afternoon. This was sent at once by mail to the laboratory, and the patient isolated until an answer by telegraph of the result of the examination was received. When the case proved to be diphtheria, the patient was isolated until further examination proved the freedom of the throat from bacilli. The children of the household were kept from school and the public, and the home subsequently disinfected with formaldehyde when the child had not been removed to the hospital. The essayist then briefly referred to the progress made in medical knowledge, both with regard to the inoculation and dissemination and prevention of tuberculosis. The experiments of Pflügge regarding the dissemination of dust and germs of disease by air movements in houses went to show that in those cases in which inhalation infection had been successful sprayed moist sputum had always been used. The author concluded that in diphtheria, scarlet fever, consumption, influenza, etc., there was more danger from the infecting agent thrown into the air by the act of coughing than from dust derived from the same material. He referred to the extreme danger attaching to inmates of the same houses where cases of consumption in advanced stages were resident.

What Constitutes an Epidemic?—Dr. Benjamin Lee, of Philadelphia, read a paper on this subject, in which he claimed that if a dozen cases occurred in rapid succession from one case, then an epidemic existed. He referred to the indisposition of communities to admit the existence of epidemics, owing to the injury to commerce which was likely to result. His contention was that the actual number of cases of a contagious disease in proportion to the population as a criterion for the declaration of an epidemic had nothing to do with the matter. He thought that rapidity of spread should be solely considered. "The board of health which, having knowledge of such conditions, purposely conceals it, or, still worse, denies it, is guilty of a crime of hideous proportions, none the less so because it is acting in obedience to the behests of the business portion of the community or from a mistaken sense of local patriotism."

The Urgent Need of Sanitary Education in the Public Schools.—Mrs. Ellen H. Richards, of Boston, contributed a paper on this subject. She said the average American citizen had not accepted the teaching of sanitary science as a part of his creed. The remedy for this ignorance was to be found in securing the correct teaching of the elements of public hygiene in the public schools of the country. The diseases among American soldiers in the late war were caused, in her opinion, by culpable ignorance among the officers. Clean schoolhouses, clean streets, and special education cost money, which municipal officials claimed it was impossible to get; but the fact should be brought home to the community that the cost of needless sickness and death among our soldiers would have paid for the cleaning of every schoolhouse in the land, and the amount of the pension money would be more than sufficient to keep them clean. She advocated the appointment of a committee to prepare a primer which should contain the essential principles of preventive medicine, and which could be

as universally taught as was first aid to the injured. Good cooking was also a factor in preventing disease.

At the evening session of the first day addresses of welcome were delivered by the Hon. Sydney Fisher, M.P., Sir James Grant, the mayor of Ottawa, and Alderman W. G. Black. The response to these various addresses was made by the president of the association, Dr. Lindsley.

Annual Address.—Dr. Benjamin Lee then took the chair, and President Lindsley delivered his annual address. He said that the primary and ultimate purpose of the association was the protection and preservation of the public health. Sanitary science was based on the correct interpretation of facts. The verification of a single fact often involved a long investigation. For example, there was such significance in the fact that civilized man lived longer than the savage that this had arrested the attention of close observers, and prompted inquiry into the special factors in civilization which had caused this result. Civilization was a power exerting an influence upon human life in many directions. The conditions of modern civilization contributed powerfully toward lengthening life, if the average of a large community was the basis of measurement. Social practices of so-called civilization might prematurely cut the thread of life and so diminish its average duration. Dr. Lindsley reminded his hearers of the progress made in medical science during the past few years. Not many had had personal observation of the plague, of leprosy, of scurvy, of typhus fever, or of yellow fever. Civilization was an evolution. It was progressive, developing new features with every advance. Health organizations were themselves a development of civilization. He said that England led all other countries in public sanitation. In Canada, Mexico, and in many States in America they were illustrating, as yet imperfectly, an ideal system. He dwelt at length on the system of looking after the health of the public, which, in his opinion, was an excellent one, and said the public intelligence should appreciate the value of it. He advocated a public chemical and bacteriological laboratory, and said a central board of health was not fully equipped without one.

Etiology of Yellow Fever.—Dr. Henry B. Horlbeck, of Charleston, S. C., chairman, presented the report of the committee on the etiology of yellow fever. Reference was made to the labors and experiments and discoveries of Sanarelli. A number of enlightened colleagues of this distinguished laborer had been engaged in verifying and extending his researches as to the cause of this disease. Sanarelli claimed that he had found the bacillus icteroides in fifty-eight per cent. of the cases examined, and believed that the reason of his non-success in always finding it was due to incidental causes. The author gave a description of the bacillus of yellow fever, and then referred to the work of other investigators. Drs. P. E. and John I. Achinard, of New Orleans, had studied the subject in relation to diagnosis by the bacillus icteroides by the Widal method. In fifty cases of yellow fever agglutination with cessation of motion was obtained in over seventy per cent., the reaction being as characteristic as in typhoid fever. The work of these gentlemen demonstrated: First, the practical value of serum diagnosis. Second, it might be utilized as early as the second day. Third, that a dilution of 1 in 40 with the time limit of one hour was to be preferred for accuracy in diagnosis. Fourth, the dried-blood method of Dr. Johnston was perfectly satisfactory. Fifth, the serum diagnosis of yellow fever should be instituted in all countries wherein the disease might exist endemically or which might be occasionally visited by epidemics. Sixth, it was especially valuable at the beginning of epidemics in the diagnosis of early and doubtful cases. The universal consensus of opinion in the enlightened scientific world was that yellow fever was due to a specific organism, and that while the bacillus icteroides might not be the inevitable cause of the disease, it was still of sufficient importance to warrant its closer study.

As a supplement to the report, Dr. Doty, of New York, stated that his researches indicated that the antitoxin serum possessed rather weak preventive power. Experiments made to determine its curative power had yielded negative results. His investigations on the subject of vaccine or a prophylactic fluid would indicate that the bacteria isolated from cases of yellow fever had preventive powers when prepared and inoculated according to the methods of Koch and Haffkine.

Dr. Eduardo Licéaga, of Mexico, read a sixth report on the etiology of yellow fever. This disease, he said, was defined as a febrile affection of a contagious character, which prevailed endemically in certain parts of the republic of Mexico, and sometimes assumed an epidemic form. The only centre of the disease that existed on the coast of the Mexican republic was found in the canton of Vera Cruz. In no other part of the Gulf coast did yellow fever ever make its appearance spontaneously. The disease had been transmitted through the bagging in which were carried corn, sugar, and coffee. It had also been transported in the clothing of persons who had been attacked, and also in skins exported from the places in which the endemic existed. Another material which served to propagate yellow fever was the ballast shipped by vessels in Vera Cruz after having landed cargoes. The propagation of the disease through the medium of water was not well established, although it was a probable cause of its spread. The general conditions that favored the transmission of yellow fever were humidity, heat, want of light and of ventilation. Sanarelli believed that mould afforded protection to the yellow-fever germ, and that once it found a lodging in the mould it was preserved in houses, ships, and other objects that could serve as a medium of transmission. The same author believed that mosquitoes could serve the same purpose.

Prevention of Infant Mortality.—The report of the committee on the cause and prevention of infant mortality was read by the chairman, Dr. Ernest Wende, of Buffalo, N. Y. He said that the utmost care must be exercised so as not to confuse diphtheria with some trivial disease, it being perfectly obvious from its dangerous character that it was essential to make a diagnosis as early as possible. Reports from the smaller communities bore ostensible evidence of absence of vigilance for the wholesomeness of water and the milk supply, this being a most important feature of public sanitation, requiring a fearless surveillance and systematic investigation in relation to all infectious diseases. He said that several scarlet fever and diphtheria epidemics had been averted in Buffalo by promptly tracing the source of infection to a particular milk route. Most satisfaction was found in the general condemnation of the long-tube, death-dealing nursing-bottle. Buffalo, through its city health department, had interdicted the use of the long rubber tube, as a consequence of which a suit was now pending in the courts to test the validity of such action, the suit being prompted by commercial interests. In preparing for this litigation, to be able to demonstrate the danger of such nursing-bottles and the justification for suppressing them, the department of health had resorted to a series of microscopical, bacteriological, and chemical investigations, which revealed innumerable bacteria of varied morphology.

Bovine Tuberculosis.—Dr. Irving A. Watson, of Concord, N. H., read a paper entitled "Some Observations from Practical Experience with Bovine Tuber-

culosis in New Hampshire." He gave a brief history of the official recognition of bovine tuberculosis in his State, and presented the following deductions: (1) It was impossible to eradicate bovine tuberculosis, but it might, without inflicting too great a burden upon the State, be reduced to a degree that would subserve the interests of the stock raisers and likewise protect the public health. (2) But a very small percentage of animals infected with tuberculosis in any way endangered the public health, and the indiscriminate slaughter of the cattle reacting to the tuberculin test was wholly unnecessary, inasmuch as many of them either recovered or the disease was permanently arrested. (3) A proper sanitary condition of stables and stable inclosures would do more toward preventing the spread of bovine tuberculosis than any other measure that could be adopted. (4) The danger of infection from bovine tuberculosis might be reduced to very small proportions, if not wholly eradicated, by sanitary measures, inspections, and physical examinations by the State in co-operation with local authorities. (5) Such inspections, once inaugurated, could be maintained without an expense that would be burdensome to the State.

Compulsory Vaccination. — Dr.. M. Septien, of Queretaro, Mexico, read this paper. He stated that compulsory vaccination was not carried out from the year 1878 until 1884, and in 1885 such a strong epidemic broke out that in nine months in Montreal thousands were attacked by small-pox, causing the death of thirty-five hundred persons. He cited this as one of the most noted examples of the rapid spread of small-pox. A Pullman-car conductor arriving from Chicago, where he had contracted the disease, was the vehicle of infection. Other examples were given, showing the disastrous effects of the indolence or the preoccupation of the masses and the negligence of the authorities.

Report of the Committee on Demography and Statistics in their Sanitary Relations.—The first part of this report, which was read by the chairman, Dr. Cressy L. Wilbur, of Michigan, recommended the adoption of the Bertillon system of classification of causes of death by the association, on the ground that it would render the mortality statistics of different States, provinces, and countries, fully comparable by sanitarians and others, and thus lead to great improvements in sanitation. Reliable and thoroughly comparable mortality statistics were absolutely essential for the use of sanitarians, and deductions based upon them were recognized as being of the greatest practical importance in public-health work. The association had now the opportunity to unify the statistics of a continent, besides bringing the work of mortality registration in North America into the closest relations with European statistics. At present the classifications used in the various States were in a chaotic condition, nearly every one being different. This was true, even when the general system was apparently the same, so that data could be compared in the different registration reports only with the greatest uncertainty. The progress of the classification recommended had been so rapid in the last two months that a supplementary report was necessary to bring the history of the movement down to the present time and to provide for its further extension. The Conference of State and Provincial Boards of Health of North America had unanimously recommended its adoption at the meeting held last month at Detroit, and no less than twelve American States had formally adopted it since the beginning of the present year; besides which, several others were waiting only for the action of the association. The formulation of a plan of international union of the countries using this system, whereby revisions could be made when necessary, occupied a considerable part of the report. The necessity for immediate action was strongly urged, in order that the revised classification might be available for use in 1900. The committee gave a practical example of the celerity which they recommended, stating that the plan of revision proposed, which was not drafted until after the conference of the boards of health at Detroit, had already been submitted to the highest statistical authorities of France and their cordial approval and the promised co-operation of the French statistical service obtained. Correspondence, the report said, was being conducted with the registration offices of Europe and South America, and arrangements had been made to announce the results of the revision at the session of the International Congress of Hygiene and Demography at Paris in 1900. The plan provided for consultation of pathologists, sanitarians, and all persons making use of mortality statistics, as well as the registration offices, and the decision as to changes from the present form was to be determined by ballot of the registrars actually engaged in the preparation of such reports.

The system of classification and plan of revision were adopted by the association, and the members of the national commissions for the countries represented were appointed as follows: Canada—Drs. Peter H. Bryce, E. Pelletier, and E. P. Lachapelle. Mexico—Drs. E. Licéaga, J. E. Monjaras, and J. Ramirez. United States—Drs. S. W. Abbott, A. G. Young, and C. L. Wilbur.

Leprosy Asylums.—Dr. J. Ramirez, of Mexico, read a paper on this subject. He said that in the greater part of America leprosy had gradually disappeared, although it had left extensive foci, one in Colombia and the other in Brazil. The disease was rarely found in Canada, although well-established cases had been seen. In the United States there were still a few small foci, which were found especially in Louisiana, Texas, California, Minnesota, Oregon, etc.; but the recent annexation of the Sandwich Islands placed vaccination in an especial condition at once to undertake measures of defence against that immense focus of leprosy, which was so well known and dangerous. He recommended a full investigation of the lepers of North America.

Leprosy in Minnesota.—A paper on this subject was read by Dr. H. M. Bracken, of Minneapolis. He said that the State board of health of Minnesota had knowledge of 51 lepers having resided in that State. Of these 17 had died before 1890. Of the 34 added to the records since 1890, 18 were first reported upon in 1891; 2 in 1892; 3 in 1893; 2 in 1894; 2 in 1897; and 7 in 1898 to date, September 15th. Little was known of the nationality of the 17 who died before 1890, but from various reports he said it was safe to presume that they were all from Norway. Of the late 34 cases, 29 were probably from Norway and 5 from Sweden. Of the 5 from Sweden, 1 was reported first in 1894; the other 4 in 1898. Of the 13 lepers found to be living, he could give but an outline of the present condition of only 6. He drew attention to the following facts as emphasized by the records: (1) The impression that leprosy immigrants from the Scandinavian peninsula were all from Norway was a wrong one, as five of eleven cases of leprosy placed on file by the board during 1897 and 1898 were from Sweden. (2) The feeling that physicians could quarantine against lepers by watching immigrants was an unsafe one. The family history of all immigrants from the country where leprosy prevails should be secured before they are allowed to embark for America, and no member of a leprous family should be permitted to land on our shores. (3) It would appear that the conditions antagonistic to the spread of leprosy in Minnesota were also opposed to sterility, as

borne out by the families of several lepers. Some of these had children, as was shown by the following figures: 5, 5, 6, 6, 4, 6, 4, 5, and 8. (4) It was quite possible for leprosy to die out in certain favored sections of the country, such as Minnesota, without segregation, provided the importation of lepers was discontinued. (5) Even in Minnesota, one had but to visit some of these lepers to feel that segregation should be insisted upon in all cases. One could but feel, on entering a filthy home and seeing a leprous mother careless in her habits, that the children were not safe. (6) Segregation in single States was not practicable. It would tend simply to drive lepers from States enforcing such a practice to those that were not carrying out the system. (7) A federal home should be provided for these unfortunates. They could thus be cared for more economically and more satisfactorily than through any State provision. (8) In spite of all precautions taken, there would be some leprous individuals in this part of the world for many years to come. The Scandinavian peninsula did not furnish all leprous individuals found in the United States. Great care must be exercised in dealing with lepers in the future. That we had been constantly importing this disease was a recognized fact, and also that the chances of importing it would probably be increased rather than decreased unless great care was taken in dealing with infected countries. All the lepers that came to America did not settle in the Northwestern States, and all sections of the country might not be so fortunate in affording such poor soil for the spread of the disease as did Minnesota. It was altogether probable that there were some lepers in Minnesota not registered by the State board of health.

Public Sanitation.—Mr. J. W. Hughes, of Montreal, read the report of the committee on sanitation, with special reference to drainage, plumbing, and ventilation of public and private buildings. He spoke of an increased interest in all matters relating to practical sanitation. The untiring efforts of individual sanitarians in the past had resulted in awakening active inquiry and interest. Private and public sewers were to-day better constructed and more carefully planned than in the past; but the question of the best method for the disposal of sewage had yet to be solved, and was becoming of more pressing importance every day. The question of effective and economical ventilation of dwellings was one presenting many difficulties.

Prof. S. H. Woodbridge, of Boston, dealt with the heating and ventilation of railway cars in a very exhaustive and elaborate report.

Dr. G. Mendizabal, of Mexico, spoke of the diseases of the skin and of the hairy scalp commonly transmitted by contagion at schools, and pointed out the ways of preventing them.

Following Dr. Mendizabal's paper, there came a symposium on disinfection and disinfectants, the conditions of greatest efficiency of some common disinfectants, methods of testing and using them in cities, hospitals, and in quarantine work.

Flies from a Hygienic Standpoint.—Two papers were presented on this subject. Abundant evidence was adduced to show that diptera were active agents in the spread of epidemics and of contagion. It is well known that flies transmit the germs that produce acetic fermentation in alcoholic liquors. They are also known to be important factors in causing the spread of typhoid fever and dysenteric diseases.

Election of Officers.—The following officers were elected for the ensuing year: *President*, Dr. George H. Rohé, of Sykesville, Md.; *First Vice-President*, Dr. Henry Mitchell, of Asbury Park, N. J.; *Second Vice-President*, Dr. J. E. Monjaras, of San Luis Potosi, Mexico; *Secretary*, Dr. C. O. Probst, Columbus, Ohio; *Treasurer*, Dr. Henry D. Holton, of Brattleboro, Vt.

Minneapolis was selected as the place for holding the next meeting, in November, 1899.

NEW YORK ACADEMY OF MEDICINE.

General Meeting, October 6, 1898.

Edward G. Janeway, M.D., President.

Surgery in the Recent War.—Maj. William Duffield Bell, surgeon of the seventy-first New York volunteers, read a paper on this topic. He said that there was but one field hospital in Cuba, which was maintained chiefly through the efforts of Major Wood. This officer loaded his own horse, and those of the medical officers with him, as well as the three ambulances, with the necessary supplies, and by repeated trips moved his hospital from Siboney to Savilla. On June 30th he established his hospital about three miles distant from the San Juan hills, and near a plentiful supply of water. There were three tents for hospital purposes. One tent was devoted to the preparation of antiseptic solutions, and contained, among other things, a large filter, through which all the water used in operations and in dressings was passed. Another tent contained surgical supplies and dressings only, and the third was used for the officers and for the especially serious cases. Although the hospital accommodations were for only one hundred, over six hundred and fifty were attended to the first day, and upward of four hundred more before the night of July 2d. There was no scarcity of dressing-materials at this hospital. The hospital staff consisted of five surgeons, several hospital stewards, and a hospital company selected from the various regiments. Three ambulances and one or two wagons completed the outfit. Shortly after nine o'clock on the morning of July 1st, the wounded began to arrive, and for the next two days there was a constant stream of wounded men coming from all directions to this one place. Toward night, five additional surgeons were called in from the firing-line to assist in the hospital, but in spite of this addition to the working-force some men lay on the ground unattended for a period of from twelve to twenty-four hours. There was an insufficient supply of clothing, due to defective transportation facilities. The transportation of the wounded was a source of anxiety to the surgeons. Men with desperate wounds had to walk or crawl distances of from one mile to several miles over a wild and rugged country. Men who had been shot through the abdomen by the Mauser bullet were known to have walked for three or four miles, and to arrive at the hospital in excellent condition and eventually recover without operation. Dr. Bell said that to his own knowledge men had been wounded in the liver and kidney, and yet up to the present time there had been no serious consequences.

The Mauser Bullet.—At a greater range than two hundred yards the Mauser bullet gave a small wound of entrance, and only a slightly larger wound of exit. If the bone was shot through at shorter range, there was always some comminution. In several instances the Mauser bullet passed through the skull and out again without producing any apparent injury to the brain, and the men returned to duty in two or three days.

The Spanish Explosive Bullets.—The explosive bullets used by the Spanish consisted of a brass coating containing soft lead. On impact, this bullet exploded and produced a ghastly wound. It was used by the Spanish volunteers, who fired it from the old

Springfield rifle. Its passage through the air was accompanied by a peculiar humming sound, and there was a short, sharp pop as it exploded. Although the use of these bullets had been denied, there were now so many observations regarding wounds produced by them that there could no longer be any room for doubt on this point.

Dressings and Wounds.—The simplest antiseptics were found to answer best. The use of iodoform was almost abandoned, because in the tropics it was apt to cause undue irritation of the skin, and was prone to be absorbed in dangerous quantities. Laparotomies were resorted to in several cases, and nearly invariably with a fatal result. The first-aid packets rendered valuable service, but the volunteers were not well supplied with them, and did not appreciate their value, so that they often threw them away. Several cases of bad compound fractures of the thigh were received at the field hospital and were dressed with careful antiseptic precautions and put up in plaster of Paris. These wounded were sent to the transports.

The Mortality.—In this campaign there were two hundred and eighty killed and four hundred wounded; but only sixty-five of the wounded died of their injuries, and but a small number had required additional care since their return to the United States.

The Surgeons a Mark for the Enemy.—The medical officers were continually exposed to the bullets of the enemy in front, and still more to the fire of sharpshooters in the rear, to whom the red cross was ever a tempting mark.

Features of Some of the Wounds.—Dr. Joseph D. Bryant inquired as to the characteristics presented by the hard and soft parts of gunshot wounds produced by the Mauser bullet. He said that he had himself seen one instance in which a Mauser ball had passed through the upper third of the humerus and out posteriorly through the soft parts of the chest wall. This man had come under his observation about four weeks after the injury. At that time the wound in the bone had closed without the discharge of fragments of any kind. There was much thickening about the parts, suggesting a condition best described as "pulverization." There was enough union to obscure any crepitus. The wound of the soft parts behind the humerus and in the thorax had not healed. This wound looked to him as if it had been made by a red-hot iron. The patient made a prompt recovery. Another case seen by him was that of a lieutenant who was one of the first wounded, and consequently received early attention from the surgeons. The ball passed through the upper third of the femur, and the limb was found to be one and one-fourth inches shorter than its fellow. Four weeks after the receipt of the injury there was an evident false point of motion. The officer stated that there had been but little hemorrhage and that the wound had healed promptly. The limb was kept in plaster of Paris for several weeks. On removal of the plaster no false point of motion was detected, but shortly afterward the man complained of pain, and examination showed the presence of such a point.

Slight Injuries to Large Blood-Vessels.—Major Bell said, regarding the injury to the soft parts, that in eight instances wounds had been received over the femoral artery, in such a situation that it would seem as if the bullet must have passed through that artery. In some of the cases all that could be detected was an aneurismal varix. Although almost incredible, it seemed that the vessels had receded from the bullet. In nearly every instance that he had seen the soft parts had healed very promptly—usually in three or four days.

Effect of Distance on the Bone Injuries.—If the wound were received within five hundred yards, the class of fractures was entirely different from those received within eight hundred yards. Nearly all the wounds at El Caney were from bullets fired at a distance of five hundred yards, whereas at San Juan most of the injuries were received at eight hundred yards or more. The bone injuries on the former battlefield were characterized by a great deal of comminution, while at San Juan there were numerous instances in which the ball passed through the long bones without producing splintering. It was here that the man was shot through the posterior portion of the skull without receiving any obvious injury of the brain.

Effect of the Krag-Jorgensen Bullet.—The Krag-Jorgensen bullet at short range was found to be explosive, like the Mauser bullet, but the range of the former was shorter by three or four hundred yards. On the visit of the British consul to the American lines, during the cessation of hostilities, he was asked to notify the Spaniards that if they did not stop using explosive bullets the Americans would retaliate in kind. To this the Spaniards replied that the Americans were also using them, and upon investigation it was discovered that the Krag-Jorgensen bullet acted in this manner.

Dr. A. M. Lessèr said that he had had under his care one hundred and eighty-one American and forty-eight Spanish soldiers. Of the one hundred and eighty-one patients, seventy-one required more or less surgical interference; the others had clean wounds. There were eighteen cases of wounds through the skull. In one of these the bullet passed through the parietal bones and fractured everything above. The patient bled profusely, and on reaching the Siboney hospital was paralyzed in both upper and lower extremities. After being trephined, he was able to move his legs and arms, indicating that the paralysis was chiefly due to the pressure produced by the blood. The man had afterward been operated upon by Dr. Abbe, for a fungous growth, but had succumbed. Another interesting case was that of Colonel Mills. A bullet entered a little below the right eye, and escaped through the left cheek. He was blind when seen. The wounds were cleansed and ice was applied to the eye. He was now able to see out of the right eye, but was blind in the left eye, although it had not been necessary to extirpate the latter. The paralysis of the muscles around the eye had disappeared, so that he had perfect control over the eyes. None of the wounds of the thorax that the speaker had seen had required interference, nothing more than plaster being needed after three or four days. He knew of two or three cases in which soldiers had been shot through the neck and clean wounds left, which had given no special trouble. The compound, comminuted fractures had done remarkably well.

The Spanish Wounded did Badly.—In the fourteen hundred and fifteen cases treated at Siboney, there were only four deaths up to the 7th of July. Traumatic fever was almost unknown in the camp. It was quite different with the Spanish soldiers. Those who received wounds in the naval battle did badly. There were no clean wounds here, so that amputations instead of resections were demanded. He had been struck by the fact that all the wounded Spanish soldiers coming under his observation had been injured by more than one American bullet. The Spanish soldiers did not have the antiseptic pads, as did our own soldiers. He was convinced that the lives of hundreds had been spared by the use of these pads. Dr. Lessèr added that he had gone to the war with the expectation of seeing considerable abdominal surgery, yet the fact remained that he had not seen a single abdomen opened, or one which seemed to need to be opened.

Immunity from Tetanus.—Dr. Janeway said that medical students had often told him that idio-

pathic tetanus was very common in Cuba, and he was therefore curious to know if tetanus had been common in the experience of the army surgeons.

Dr. Bell replied that he had not seen a single case of tetanus, and knew of only one case that had been reported, and that had occurred at Miami, Fla. Possibly this immunity was largely due to the great care taken to carry out the principles of aseptic surgery.

Maj. Daniel Mitchell Appel said that he was in charge of the sick and wounded in New York City, and had seen most of the cases referred to by Dr. Lesser. When Colonel Mills left the eye hospital, his vision was $\frac{2}{200}$ in the left eye and $\frac{3}{200}$ in the right. At first he had been totally blind. All the wounded in the hospitals here had done beautifully. Three or four cases had been subjected to laparotomy, and all had proved fatal. In these cases there was considerable laceration, not only of the intestine but also of the liver.

Therapeutic Hints.

Diarrhœa.—

℞ Tincture opium ..... 15 c.c.
Tincture rhubarb ..... 15 "
Oil sassafras ..... ½ "
Tincture catechu co ..... 30 "
Tincture lavender co ..... to make 120 "
S. Teaspoonful every three hours.

—Loomis.

℞ Tincture opium ..... 30 c.c.
Tincture capsicum ..... 30 "
Spirit camphor ..... 30 "
Purified chloroform ..... 12 "
Alcohol ..... to make 150 "
S. Teaspoonful t.i.d.

—Squibb.

Cholera Morbus.—

℞ Tincture opium ..... 15 c.c.
Tincture camphor ..... 15 "
Spirit peppermint ..... 90 "
Tincture ginger ..... 90 "
Tincture capsicum ..... 15 "
Hoffman's anodyne ..... 15 "
Dose, teaspoonful after each movement, in sweetened water.

—Dunlap.

Tetany of Gastro-Intestinal Origin in Children.—

℞ Bismuth salicylate ..... 60 gm.
Benzonaphthol ..... 80 "
Sugar ..... q.s.
Mix and divide into twelve powders. Give four powders daily.

℞ Potassium bromide ..... 3 gm.
Chloral hydrate ..... 1 "
Distilled water ..... 100 "
Syrup of bitter-orange peel ..... 50 "
M. Three tablespoonfuls daily for a child between two and three years of age.

—Tordeus, *New York Lancet.*

In Chronic Arteritis (Arterio-Sclerosis).—

℞ Infus. herb. thymi 1–200
Adde:
Extr. aquos. convall. majalis 10
Syr. aurant. cort 90
M. S. Fifty grams to be given in two doses, to be continued for five or ten days.

—Paul.

Whooping-Cough.—

℞ Bromoform ..... gtt. xlviij.
Ol. amygd. dulc 20
Gummi tragacanth 2
Gummi arabici 4
Aq. laurocerasi 4
Aq. destill 12
M. One-half teaspoonful of this mixture contains about two drops of bromoform. Give two or four drops in divided doses daily; increase to eight or more.

—Radias.

Delirium Tremens.—

℞ Potass. bromidi ..... ʒ i.
Chloralis ..... ʒ iv.
Tinct. digitalis,
Tinct. capsici,
Tinct. zingiberis,
Spir. ammon. aromat.,
Syr. aurant. cort ..... āā ʒ i.
Aquæ ..... q.s. ad ℥ viij.
M. S. A tablespoonful.

—*Bellevue Hospital.*

In Oxalaturia, improperly called phosphaturia, because of the excessive precipitation of phosphates, the following is very valuable:

℞ Strychninæ sulph ..... gr. ss.
Acidi phosphor. dil ..... ʒ i.
Extr. cocæ fld ..... q.s. ad ℥ iij.
M. S. ʒ i. t.i.d.

—H. M. Christian, *Ther. Gazette,* August 15th.

In Sexual Neurasthenia.—

℞ Acidi nitromuriatici ..... ʒ iss.
Tinct. nucis vomicæ ..... ℥ ss.
Elix. cinchonæ ..... ʒ viij.
M. S. ʒ ss. in water.

—H. M. Christian.

In Migraine Associated with Gout or Rheumatism.—

℞ Quininæ valerianatis ..... gr. xv.
Extr. colchici ..... gr. iv.
Extr. digitalis ..... gr. iv.
Extr. aconiti ..... gr. ij.
M. ft. pil. No. x. S. One at night after dinner.

—Hirtz.

To Abort Erysipelas.—

℞ Iodol 10
Collodion 100
M. S. Paint affected area and for one inch beyond with heavy coat of collodion.

—*Bulletin Général de Thérapeutique,* 1898.

Treatment of Whooping-Cough.—For a child one year old, tincture of belladonna, ʒ i. One drop every eight hours, increasing one drop each day till the tenth day. Label bottle "No. 1." Also:

℞ Potass. bromidi ..... ʒ ij.
Phenacetin ..... gr. x.
Mucilaginis acaciæ,
Aquæ puræ ..... āā ʒ i.
M. ft. sol. S. Teaspoonful every three hours during the night. Label bottle No. 2.

—R. B. Gilbert, *The Amer. Pract. and News,* No. 14, 1898.

In Amenorrhœa.—

℞ Apiol. crystallis 20
Olei steril ..... q.s. ad 100
S. One to two syringefuls daily.

—Roussel.

In Liver Disorders of Malarial Origin.—

℞ Strychninæ arsenatis 0.3
Aq. sterilisat ..... q.s. ad 100
S. Inject one syringeful every second day.

Alternate with:

℞ Quininæ lactat 20
Antipyrin 20
Aq. sterilis ..... q.s. ad 100
S. One syringeful injected every second day.

—Roussel.

In Cerebral Apoplexy.—

℞ Ergotini 0.05
Acidi lactici 10
Aq. sterilis ..... q.s. ad 100
S. Inject one to two syringefuls.

—Huchard.

Vehicle for the Iodides.—Coffee is an excellent vehicle for the administration of the iodides of potassium and sodium.

In Acute Laryngitis.—

℞ Picis liquidæ ..... ʒ i.
Alcoholis ..... ʒ iv.
M. S. ʒ i. on sponge through which steam is passed. For inhalation.

Or—

℞ Morphinæ sulph ..... gr. i.
Ext. hyoscyam ..... gr. v.
Glycerini,
Alcoholis ..... āā ʒ iv.
M. S. ʒ ss. on sponge. Inhale.

In Chronic Laryngitis and Bronchial Catarrh.—

℞ Pulv. camphoræ ..... ʒ iij.
Menthol ..... ʒ iv.
Ol. pini sylvestri ..... ʒ iv.
Ol. picis ..... ʒ ij.
M. S. Gtt. ii.–x. For inhalation.

Or—

℞ Thymol ..... gr. xv.
Eucalyptol ..... gr. xx.
Creosoti ..... ʒ ij.
Ol. pini sylvestri ..... ʒ iv.
Ol. gaultheriæ ..... ʒ i.
M. S. Gtt. ii.–v. For inhalation.

—C. C. Rice.

Palpitation of the Heart.—In palpitation resulting from beginning aortitis, acute endocarditis, pericarditis, or mitral insufficiency the following has proved serviceable:

℞ Quininæ hydrobrom. ..... ʒ i.
Digitalis pulv ..... gr. xxx.
Extr. convallariæ ..... gr. xxx.
M. ft. pil. No. xxx. S. Two to four pills daily.

—Huchard.

In Dysuria Due to Uric Acid.—

℞ Acidi benzoici,
Sodii boratis ..... āā gr. v.
Aquæ ..... ʒ i.
M. S. At dose every two hours.

—*Canada Lancet.*

Local Treatment of Neuralgia.—

℞ Menthol,
Guaiacol ..... āā 1
Alcohol absol 18
M. S. Apply twice daily on cotton.

—*Ther. Monatsschrift.*

Spermatorrhœa.—When due to spasm of the seminal vesicles:

℞ Extr. belladonnæ,
Pulv. belladonnæ ..... āā gr. iij.
Confect. rosæ ..... q.s.
M. ft. pil. No. x. S. From one to three pills at bedtime.

Or, instead, pulv. camphoræ, gr. ¾, or lupulini, gr. iss., may be given; or potassium bromide, gr. xv.–lx. in twenty-four hours. When the result of atony of the seminal vesicles, cold enemata are prescribed, together with cold jet douche of twenty seconds' duration, and the following powder is given morning and night:

℞ Pulv. ergotæ ..... gr. iss.
Pulv. nucis vomicæ ..... gr. iij.–x.
M. S. For one dose.

—Sinéty, *Jour. de Méd. de Paris.*

Mental Strain.—The only rational treatment is to remove the cause. Where this is impossible, in addition to hydrotherapy and massage give pil. strychninæ arsenatis, 0.001 mgm. at a dose twice daily, and one of the following pills at breakfast or dinner:

℞ Zinci phosphid ..... 0.80 cgm.
Pulv. gum. arabic ..... 1 gm.
Pulv. glycyrrhizæ ..... 3 gm.
Mellis ..... q.s.
M. ft. pil. No. 100. Coat with silver and keep dry in dark bottle.

This can be kept up for a long while, but if strain is continuous it is best after a time to give the strychnine pill every second day and the zinc pill every fourth day.—Romme, *Presse Méd.*

Epilepsy.—

℞ Potassii iodidi ..... ʒ i.
Potassii bromidi ..... ʒ ij.
Ammonii bromidi ..... ʒ iiss.
Potassii bicarbonatis ..... gr. xl.
Infus. calumbæ ..... q.s. ad ʒ vi.
M. S. A teaspoonful before each meal, and three teaspoonfuls at bedtime, with a little water.

—Brown-Séquard.

Sciatica.—

℞ Spirit of glonoin ..... 5 gm.
Tincture of capsicum ..... 7.5 "
Peppermint water ..... 15 "
M. S. Five to ten drops, three times a day.

—P. M. Mikhalkine.

Simple Bitters.—One may indeed accept it as true that these substances exert a special influence on certain nervous elements which are in the walls of the stomach, and are concerned in the process of nutrition—an influence similar to that which they exert on the nerves of taste. Nevertheless, at present there is not a single genuine (experimental) proof to justify such a belief. Not one of these bitters has any special advantage as compared with the rest. Some physicians will prefer one, and others will prefer another. —Schmiedeberg.

"Chelsea Pensioner" for Rheumatism.—

℞ Powdered guaiacum ..... ʒ i.
Powdered rhubarb ..... ʒ ij.
Bitartrate of potassium ..... ʒ i.
Sublimed sulphur ..... ʒ i.
Powdered nutmeg ..... ʒ ss.
Honey ..... 1 lb.
Mix thoroughly. S. Two large tablespoonfuls to be taken night and morning.

"Lady Webster's Dinner Pill."—

℞ Powdered Socotrine aloes ..... gr. ij.
Powdered mastich ..... gr. ss.
Powdered red rose leaves ..... gr. ss.

Neuralgia.—

℞ Chloral,
Menthol,
Thymol ..... āā 1 part.
Camphor ..... 3 parts.
M. S. Apply locally.

Treatment of Syphilis.—Dr. W. C. Heggie (*The Dominion Medical Monthly and Ontario Medical Journal*, April) writes: "My experience in treating some four hundred syphilitics during the past two years has been that in the true syphilitic stage mercury is the remedy *par excellence*. In the sequelæ potassium iodide stands without a rival. Of all the preparations of mercury the bichloride easily takes the lead, especially immediately after infection. I usually begin treatment with one grain of calomel every hour till the bowels are thoroughly flushed; then put the patient on—

℞ Hydrarg. bichlor. ..... gr. $\frac{1}{16}$–$\frac{1}{4}$
Nucis vomicæ ..... ♏ x.
Ext. phytolaccæ dec. ..... ♏ ij.
Aquæ ..... q.s. ad ʒ ij.
M. To be taken four times daily.

I begin with one-sixteenth grain of bichloride and increase the dose till I get an apparent effect. I am not afraid of salivation; in fact, continue the remedy until mercurialization begins to develop, when the remedy is stopped and the patient put for a week or more on the vegetable alteratives. The emunctories should be kept open and a hot bath given twice a week. Any complications should be treated in conjunction with the antisyphilitic treatment, which should be continued for at least six months after all symptoms disappear."

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE WEATHER AND THE PUBLIC HEALTH—THE DROUGHT—SCHOOL INFECTIONS—ASYLUMS BOARD—LIVERPOOL'S NEW LABORATORIES—PROPOSAL FOR A LONDON LABORATORY—NOTIFICATION—VACCINATION STATIONS—HOSPITAL STAMPS.

LONDON, September 23, 1898.

THE weather is still uppermost in our thoughts. The heat wave has, indeed, passed, but its influence seems to remain. Some intervals of rather sharp cold have told us that autumn is certainly here, and yet most of the days have been sunny and warm and we talk of Indian summer.

The public health has continued good, and although in parts there has been an increase of diarrhœa it is not more marked than in other warm seasons.

Even the water famine at the East End has not yet produced much effect on the mortality returns, though, no doubt, it has increased the amount of sickness among the poorer inhabitants. A connection has been made with two other companies and thus a considerable increase in the amount of water supplied has been effected, and it is believed that in a few days this increase will be greater. The agitation against the company which has failed to fulfil its contract naturally continues, and it is to be hoped that this time it will lead to legislation. The president of the local government board has incurred much unpopularity by his supineness and later by his attempt to absolve the company. The fact that other companies have a surplus is regarded as a most forcible argument in favor of making all of them intercommunicate and some day placing all under one authority. The county council has a better chance than ever of securing the control.

The prolonged dry summer has had a perceptible effect in various parts of the country, and many district health authorities have been considering what might be the consequence of a longer period of absence of rainfall. Most of the rivers are flowing at a much lower level than has occurred for many years, and in some places the drains are not properly flushed, while wells are becoming dry. Even Loch Katrine, which supplies Glasgow, is ten inches lower than it has been seen for nearly twenty years. There is no fear of this failing, but the corporation is engaged on works which will secure an abundant increase over what has sufficed for the last forty years, and so provide for all possible increase of population and maintain Glasgow's place as the best-supplied city.

The effect of schools in spreading diphtheria has long occupied the attention of sanitarians. The medical officer of the school board seems to attach little importance to this influence, but it is so natural to believe that the aggregation of many children offers full opportunity for the spread of so infectious a disease, that no one can be surprised that the danger is frequently pointed out. There have been many outbreaks which have been traced to the presence of a case or two in a school, and the closing of such an infected school has often sufficed to arrest the spread.

At Southall, Dr. Windle suggested to the authorities systematic examination of the school children, and they accepted his advice. They had previously adopted the plan with great success in the case of scarlet fever, and there can be little doubt that the inspection which has just been carried out will serve to check diphtheria, which has prevailed for the last two years in Southall. The local authorities there deserve credit for what seems to be a new departure, and Dr. Windle is to be congratulated on finding them ready listeners to his excellent suggestions.

The excessive expenditure of the asylums board, on which I have more than once remarked, is receiving attention. The local government board has directed its chief inspector to inquire into the excessive cost of the Brook Hospital, the architect's responsibility, and what supervision was exercised by the managers or the committee.

Liverpool is expecting to have a most brilliant celebration of the opening of the new laboratories of physiology and pathology at University College. Lord Lister is to conduct the ceremony and to receive another honorary degree, and of course the lord mayor will give a banquet on the occasion.

There is a prospect of a bacteriological laboratory being established for London, on a scale worthy of the metropolis. Some of the district authorities have made representations on the subject to the County Council, and it is anticipated that others will follow. The matter will probably come before the council in November.

Notification has often enough been opposed as likely to be extended to an egregious extent. Many would like to see tuberculosis included in the list of compulsorily notifiable diseases, and more still think measles ought to be. The difficulties in each case have so far restrained the zeal of the sanitarians and have even greatly added to the opposition. It has sometimes been said that health officers will not be satisfied until they get returns of every case of gonorrhœa or syphilis. I hear that the Germans contemplate such an extension and that in some places it has been inaugurated. I hardly expect it will become general in Germany, and am pretty sure John Bull will not follow the example.

The local government board has informed the boards of guardians that in future vaccination stations will be abandoned, in view of the arrangements provided for domiciliary vaccination by the new act.

Four new stamps have been issued on behalf of the Prince of Wales' hospital fund. They are for 1*s.*, 2*s.* 6*d.*, 5*s.*, and 10*s.* respectively, and offer an easy way of subscribing to the fund.

OUR PARIS LETTER.

(From our Special Correspondent.)

LIGHT AND HYGIENE FOR CHILDREN—MORTALITY RATE FROM TUBERCULOSIS LARGELY INCREASED BY THEIR LIVING IN DARK ROOMS WITHOUT SUN EXPOSURE—FRENCH SOLICITUDE FOR YOUNG CHILDREN—CONDURANGO IN THE TREATMENT OF STOMACHAL DISEASES—THE BACTERIOLOGICAL LABORATORY, ETC.

PARIS, October 1, 1898.

A QUESTION of hygiene, or rather an important hygienic point and one often overlooked altogether in the selection of sleeping-rooms for young children, is that of light—the light of the sun shining directly into the rooms, and not the reflected light of wall or reflector. That is the kind of light that accompanies dampness and fosters depression and melancholia. And if such quarters are bad for those of maturer years, how much worse are they for children! To place a child in a back-room, where the sun never shines, is to predispose it to rachitism, pallor, anæmia, and neurasthenia. It is preparing the ground for phthisis to deprive children of the rays of the sun, with their triple qualities—calorific, luminous, and chemical—which are indispensable to life and health. One of the most fruitful causes of the frightful mortality from tuberculosis in Paris—eleven thousand in an annual total of fifty thousand — is by living in rooms of this kind, overlooking dark and cold

courts or yards, or occupying back shop rooms, often overcrowded and lighted by transoms or getting their obscure light from other rooms. The light of the sun alone is not only a powerful source of vitality, but it actuates the cells of our brains, invigorates our muscles, heightens our tonus, increases the pressure of the blood in our arteries, and gives us as a consequence that feeling of well being, that lightness of body and step, that tendency to take things and see them at their best, that characterize perfect health.

It is often enough to take a debilitated, anæmic child, who has been living in an obscure room such as mentioned above, and place it in a bright, sunlit room of good size, to observe an immediate improvement without the administration of medicine. The subject of infantile hygiene is one of great importance, and it is interesting to note in this connection a study that has just been made by Dr. Maurice de Fleury, with reference to the number of hours daily to be allowed young children for the reparation of their strength by sleep. Dr. de Fleury, inspired by the law that the newborn babe sleeps almost constantly and the old man very little, has established a schedule, decreasing as the children advance toward adult life.

For instance, a child of from five to eight years of age ought to sleep from eight o'clock in the evening to seven in the morning—that is, eleven hours; a child of from eight to twelve years of age should sleep from nine in the evening to seven in the morning—or ten hours; a child of from twelve to fifteen years of age, from half-past nine in the evening to half-past six in the morning—or nine hours. Later it is well to accustom them to seven hours' sleep, but this should be done gradually; first dropping to eight hours, and then in six months to seven hours. These are general rules for children in ordinary health; there are, however, others for whom it is advisable to increase the hours of sleep. Sickly, thin, enervated, and excitable children are the better for half an hour or an hour's sleep after the midday meal.

The medical profession and the laity are just now giving much attention to infantile hygiene and medicine; in the discussions and writings on the subject nutrition and nourishment play an important rôle, and the French seem to be awakening to the fact that healthy children mean healthy men and, what is very much to the point to-day, more soldiers—an army stronger mentally as well as physically, and one better able to withstand the fatigues of military life in time of peace and its hardships and privations in time of war.

Professor Lemoine has just related several cases of diseases of the stomach relieved by the administration of condurango. Our American confrères remember the history of condurango in the treatment of cancer, but it is not as a cure for cancer that the remedy is advised, but simply to allay pain in a variety of stomachal affections, including the pains of carcinoma. Condurango facilitates alimentation and improves nutrition in those patients suffering from the stomach; moreover, it may prevent cachexia. A favorite preparation is condurango in powder form given in wafers, from two to four grams a day, in broken doses. Professor Lemoine orders in his service and practice pills of ten centigrams of the powder of condurango made up with any excipient; his patients take from five to eight of them a day. It is given in cases of atonic dyspepsia, stomachal dilatation, chronic gastritis, stomachal catarrh, and gastralgia, principally to allay pain. This is certainly a new way to use an old drug, and, judging by Professor Lemoine's experience, condurango powder must be a very efficacious remedy in a variety of stomachal diseases.

At a recent meeting of the Société de Thérapeutique, attention was called to the substitution of the essence of wintergreen for the salicylate of sodium and the employment of salicylate of sodium insisted upon. The essence of wintergreen, it was pointed out, has an irritating action on the epidermis and epithelium, and its composition is unreliable. This accounts for the fact that some practitioners who employ the essence of wintergreen in the treatment of articular rheumatism have had negative results.

Good work is being done by the municipal bacteriological laboratory. This laboratory for the diagnosis of contagious affections was created by the municipal council in 1895, and is open to the public every day in the year from eight o'clock in the morning until eight in the evening, including Sundays and holidays; moreover, the necessary articles are given to doctors who ask for them for the bacteriological diagnosis of diphtheria, tuberculosis, and contagious affections of which the germs are known. The results of the analyses are sent directly to the doctors, at longest twenty-four hours after reception of the pathogenic products at the laboratory. These results can be sent by telegraph if desired and at the expense of the doctor, but the examination and diagnosis are absolutely gratis. The laboratory received, in August, 1898, forty-eight products suspected to be tuberculous, in which the bacillus of Koch was discovered sixteen times.

"A BRIDLE FOR THE CONTROL OF MOUTH BREATHING."

To the Editor of the Medical Record.

Sir: The Medical Record of September 10, 1898, contained an illustrated article, "A Bridle for the Control of Mouth Breathing." In the issue of the Medical Record of September 24, 1898, a criticism of this article appeared over the signature of W. Freudenthal, M.D., of New York City, who manifestly either "studied the pictures" without reading the descriptive matter, or read the latter without an intelligent comprehension of its import.

Noreurne B. Jenkins, M.D.

Knoxville, Tenn.

A SAFE AND SIMPLE METHOD OF VACCINATING.

To the Editor of the Medical Record.

Sir: I am informed that the method of vaccinating by use of the knife is yet practised by many boards of health, and at dispensaries and similar institutions, where it frequently happens that a large number of people are to be vaccinated at one time.

It may be of some interest and perhaps benefit to such institutions to read the following description of a method which is successfully employed by myself and, no doubt, by many other ship surgeons. It is a well-known fact that much of the opposition which is arrayed against vaccination is caused by the inoculation of disease into one person from another through the medium, in times now happily past, of the crust, and later by the vaccination knife or by using the same applicator to apply the virus to all arms. To my mind there are but few things which could and should cause more feelings of remorse to the conscientious physician than the knowledge, or even suspicion, that he had through any avoidable means inoculated a trusting patient, especially a child, with a loathsome disease.

When a number are to be vaccinated, as in a school or barracks, and the same knife is used for all, the danger of such an "accident" is very great, even though an attempt be made to sterilize the knife after

each scarification — which, I fear, is seldom done. Thus an innocent person becomes sorely afflicted, and another stumbling-block is placed upon the barrier raised against vaccination. A disease in one person may thus be inoculated into not only one other but several otherwise healthy people.

The readers of the MEDICAL RECORD are doubtless aware that steerage passengers on the transatlantic liners are vaccinated by the ship's surgeon as early in the voyage to the United States as practicable. The rules state that "all adult persons should be vaccinated who have not been successfully vaccinated within the past six years, except children under ten years of age who bear good evidence of successful vaccination." A scar upon the arm of an adult practically means nothing: and as a correct history of past vaccinations is difficult to obtain, usually all, except small children with good marks, are vaccinated —upon the theory that "If you don't need it, it will not hurt you: and if it does hurt you, you needed it."

The vaccine furnished to the surgeons of the Holland-America line is put up in small tubes of glass hermetically sealed at each end. Each tube contains sufficient vaccine for fifteen inoculations, is of the best quality, and is handed to the surgeon on board ship as late as possible before sailing, usually within the hour of departure, in order that the vaccine shall be as fresh as possible. The vaccination is done as soon as practicable after leaving port, and is performed in the following manner: The ends of the glass tubes are clipped off with shears, and the vaccine is turned from them into a small butter dish or watch crystal, and a little clean glycerin is added to it. For scarifying I use only needles. Any kind of a steel needle may be used, provided it be new and clean. The ones which I use are common sewing-needles of French manufacture, and come in tubular telescopic paper boxes, each containing about twenty-five needles of assorted sizes. There are many variations in the thickness of skins, and an assortment of needles is desirable. The dish containing the virus, and the needles, with all the points in one direction, are placed on a proper support within easy reach of the surgeon. The people to be vaccinated are formed into line, with arms prepared. The surgeon stands facing the patient, holds a needle between the thumb and first two fingers of his right hand, with the point toward the ulnar side. The fourth and fifth fingers are closed against the palm of the hand. He grasps the patient's arm firmly with his left hand, which draws the skin taut, and with a few rapid strokes of the needle, usually five, makes as many scarifications in the skin, parallel to the long axis of the arm. This is usually sufficient, but if not a few rapid strokes may be made at right angles to the others. A little bleeding, but not much, should result. The needle is then reversed between the thumb and first finger by a sweep of the second finger in closing, so that the point of the needle points toward the palm of the hand. The end of the needle containing the eye is then dipped into the virus and applied to the scarifications. The needle is then thrown overboard.

The eye of the needle will take up a good-sized drop of the vaccine, much in the same manner as a pen does ink.

The pain caused by the scarification, though a little acute, is so quickly ended that it is much more easily endured than is the scraping of a knife. I have scarified an infant's arm and applied the virus before the child realized what was going on enough to cry out or struggle. The preparation of the arm before and the dressings after the vaccination may be carried out as desired.

The advantages of this method over that of the knife are the simplicity and rapidity of the operation; the perfect sterilization which may be given the needles; and, above all, the absolute impossibility of inoculating one arm from another, as the part of the needle which has been in contact with the arm of one never comes in contact with the virus or the arm of another. Of course a new needle is used for each person, but the expense of them is comparatively nothing. When a large number are to be vaccinated, one will be surprised at the rapidity with which it may be efficiently accomplished by this method.

V. A. CHAPMAN, M.D.,
Surgeon of S.S. Werkendam.

AT SEA, September 24, 1898.

MISTAKEN IDENTIFICATION.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: By identity is meant the determination of the separate or distinct existence of a person, drawn from a series of facts, some of them obscured, perhaps by trickery or fraud, and all of them more or less varied by circumstances. When the recognition of a person is the object of a judicial action, the forensic application of the term is to be considered. Medico-legally, the consideration of personal identity is one of great importance, embracing, as it does, questions which affect cases of both a civil and a criminal character; in fact, it may constitute the most important evidence of any presented.

Cases of mistaken identity have frequently arisen, and medical literature fairly teems with instances which go to show that innocent persons have been often made to suffer because they had the misfortune to resemble others.

The difficulty of identification is very much increased in those cases in which the body of a person has been subjected to mutilation after death, or in which severed portions of the same body have been removed to a distance, or even destroyed.

Murderers often dispose of the mutilated remains of a dead body, with a view to escape detection. In the brutal murder of his mistress, Cæsar, the New York negro, who was some few years ago convicted and sentenced to death, mutilated the remains in a horrible manner and then removed the severed portions to a distant part of the city, for the evident purpose of avoiding the suspicion that was soon cast upon him.

The identity of the living may usually be established by the direct evidence of those who have had such acquaintance with the person in question that they have a perfect recollection of his personal appearance. This kind of evidence is, however, often very defective, for the reason that instances do occur in which the most confident identification of persons has afterward proved to be of no value whatever. In the celebrated Tichborne and Guerre cases illustrations are afforded of the extreme difficulty of deciding this question. In the former instance eighty-five witnesses swore that the claimant was Sir Roger Tichborne, even the latter's mother and family solicitor being among the number. The claimant's case, however, was lost on the cross-examination. The uncertainty of identification is also well shown in the Martin Guerre case, which was tried in the year 1560 before the parliament of Toulouse, and is recited at length in "Celebrated Crimes" by Dumas. This personage, Martin Guerre, had been away from his home for a period of about eight years, when an individual named Du Tilh appeared and represented himself as the long-absent man. So strong was the resemblance that his statement was universally accepted by all of Guerre's family, including his wife, sisters, and two brothers-in-law, among whom he had lived unsuspected for three years, having two children by Guerre's wife. Some

circumstances, however, occurred to cause suspicion in regard to his true character, and he was arrested on a charge of fraud. Upon his examination he gave perfectly satisfactory answers to the most minute inquiries in relation to Guerre's former life. Some one hundred and fifty persons were examined during the proceedings, of whom between thirty and forty testified from a lifelong acquaintance that the prisoner was Martin Guerre, while about the same number swore positively that he was Armand Du Tilh, whom they well knew, and over sixty, who knew them both, declared that they were unable to say which the prisoner was. Finally, however, the real Martin Guerre appeared upon the scene, when immediately he was recognized by the four sisters who had previously testified that Du Tilh was their brother. They admitted their error and acknowledged the distinction. There being now no doubt of the guilt of the prisoner, he was condemned and executed. From these two most astonishing examples the fact is demonstrated that appearances are not conclusive evidences of personal identity, simply because they convey different impressions to different observers. This goes to show that a large proportion of people are untrained in minute observation.

The false identification of the living and the dead body has been a matter of much concern for centuries, relegating evidence by circumstance to an uncertain niche in criminal jurisprudence. The present mystery of the Yellow Mill Pond bids fair to be a case of repeated mistaken identifications. The police authorities of the world have ere this been put on their mettle in solving cases of this kind; men have been hanged in the past for the murder of persons who later appeared upon the scene alive and well. In the present celebrated case, the person identified as dead turns up alive, inspects a grave dug for her, glances at the floral tributes to her funeral—in fact, comes home in the nick of time to attend her own funeral. Her appearance throws this mystery into the slums of an almost fathomless and never-to-be-solved mystery. Remarkable coincidences, a distracted father, a dentist, an undertaker, are the factors which led to the false identification of the body. The father's solemn oath seemed to clinch the identity of the dead form. Perplexity surrounded the efforts of the authorities within a short time, for lo, behold! the girl doubly and triply identified as dead turns up alive at her home. Although the features of the dead and the living girl are dissimilar as regards the head, nose, forehead, and hair, still the distracted father recognizes his daughter by marks on the face and head. He finds a scar on one side of the parting of the hair—a scar three-fourths of an inch long on the head—and a pockmark, resulting from chicken-pox, over the eye; he remembers that his daughter has the same distinguishing marks, but he admits that the general appearance, the shape of the forehead, and the nose of the dead girl do not resemble the corresponding features in his daughter; still he stakes his life on it that the mutilated body lying before him is the body of his absent one. From the photograph of the head of the dead girl he recognizes more strongly than ever his lost child. The strongly locked, rigidly contracted jaw of the head of the mutilated form is forced open for the father to inspect the teeth, the difficulty of which I will leave to any one versed in the care of the body after death—a difficult feat in almost all cases. The now almost irresponsible parent with the aid of a chart, and with the assistance of the undertaker, recognizes his daughter more strongly by means of the teeth.

The characteristic features of filled and of removed teeth, believed to be possessed by his daughter, are transmitted by telephone, with the help of the dentist's chart, and correspond exactly. He returns home with the body, believing it to be that of his missing child. According to the dentist and the father, the teeth of the dead head tallied exactly with the chart, and consequently with the teeth of the missing girl; the chart was prepared by the dentist who attended the teeth of this missing young woman, and consequently he ought to know. The condition of the teeth in the dead body showed that the two centre teeth were filled with gold, the centre tooth on the right side of the mouth was filled on both sides; the next tooth to that on the right side of the mouth was filled on the inside; the one on the left side of the centre was filled on the inside. Two of the back teeth on the left side of the upper jaw were gone. Back tooth, front of wisdom tooth, filled with white filling; stomach tooth, on lower jaw, filled with gold on right side; the next back tooth was filled. The feet of the dead girl were exact counterparts of the feet of the missing one, but the hair did not compare favorably; in thickness and length it did, but in color it was entirely different, redder than the hair of the missing girl.

Shades of Martin Guerre! more a case of distracted father than a case of mistaken identification. And still this case will be seized upon by the astute criminal lawyer to gull the ever gullible jury into the belief that his client is guiltless of crime, simply because mistakes in identification are frequently made, and will be made as long as the emotions have full play in man. I venture to say that in very few cases can a positive identification be made and sworn to. No less than ten innocent men have been labelled "Willie Tascot," and each identified positively as the murderer of a Chicago millionaire—yes, identified by more than one person; even the height, features, filling of teeth and birthmarks corresponding. Still each of these men turned out the victim of circumstances. Men have been indicted for crime and placed on trial, simply because they were "identified" as the guilty one, and in every case the real culprit turned up later. Men have been tried for murder, the supposed victim making his appearance alive and in court before the end of the trial, as was the case in the trial of Buckson in 1851. A person may disappear mysteriously from his or her usual haunts. A nude body is found in the water; it is identified by certain marks, scars, tattoos, and peculiarities of the teeth. Later, the identified party makes his appearance in the flesh. How many persons have taken part in their own wake, simply through a mistake in identity? Recently, in our own courts, the real cuprits have appeared and pleaded for the release of others, imprisoned unjustly through false identity. At a time when theft was punishable by death in England, a man was hung as the criminal; simply another case of false identification.

The "mail-coach case" in France was the cause of the guillotining of two persons through false identification. A positive and hurried identification should be frowned upon, as it rightly was by the authorities in the now celebrated Yellow Mill Pond mystery. The father completed his identification in an hour. This hour of positivism will give food to the criminal advocate, in the defence of clients, for centuries to come. The authorities did well in refusing to deliver the body to the distracted father until he had made affidavit to his positive identification. The undertaker in the case had buried more bodies than any other man in the State, and was well qualified to judge of the changes in appearance, after death, by a photograph, by the features, and by marks. He asserted positively that there could be no mistake. The dentist, standing beside the telephone, converses with the undertaker, evidently an observant man, at the side of the dismembered corpse at the morgue. The dentist tells

the undertaker across the 'phone that the first right upper front tooth is filled on each side; of course, he refers to the teeth of his former patient, the missing girl, and he wishes the undertaker to compare his description with that of the dead body. He telephones, furthermore, that the teeth on either side are filled on the sides nearest the first tooth. The undertaker telephones back that this description tallies exactly. The dentist's chart shows, furthermore, that in the lower jaw the left side of the fifth right tooth was filled; this also shows in the head of the dead. A white filling shows in the upper jaw on the left side, next to the wisdom tooth; two upper teeth are missing on that side and one upper tooth is absent on the other side. Remarkable coincidences, but simply a case of mistaken identity. Stronger evidences could not have been brought forward than these peculiarities in the teeth. Still when the missing and supposedly dead daughter returns it is found that her nose is *retroussé*, and that her teeth are in all respects dissimilar from those of the body in the morgue. Was ever identity twisted as it was in this case? And still the same thing will recur for ages. The only actual coincidence of resemblance between the prodigal daughter and the unfortunate in the morgue was the pockmark over the eyebrow.

Circumstantial evidence has had a remarkable setback. Dentists with elaborate charts will not be looked upon with favor by juries for a long time to come. As for long-distance telephone identifications —well, the less said the better. Seldom has there been such a case of mistaken identity—birthmarks identical, fillings in the teeth sworn to as the same, the father stakes his life upon the correctness of his identification, the dentist folds his chart, and the body is shipped to the suffering parents, only to be returned again to the morgue as a silent argument of the unreliability of hasty and improperly conducted identifications. The confidence of the public as jurors has been shaken as regards identification of dead bodies. The criminal lawyer will be on the alert in incorporating this now famous case in his defence of criminals. Father, undertaker, photograph, dentist, even the mother, all wrong. Still accused persons have been sent to prison—ay, to ignominious death—on less positive testimony than this. Trials for murder and other crimes, when the question of identification is involved, will echo this case, as showing the unreliability of positive identification in the living or in the dead. "Circumstances do not lie," I heard the eloquent Fellows say in the trial of the Arab, Ben Ali, for the murder of "Old Shakespeare;" but circumstances in this now mysterious case of the Yellow Mill Pond have brought forward—what? A monstrous example of false identity. And when the mistake is discovered, what do we find in its place, what has it brought to life? Simply a love affair between two ordinary persons.

Still, we do not identify any more positively in our great city of New York. I will mention examples. The body of an unknown is found, removed to the morgue, and in many cases is identified by ten or more persons, as was illustrated in the Colonnade Hotel case. How easy it is to be deceived is not comprehended at its proper worth. The changes produced by death invariably increase the liability to error—so much so, that the identification of a dead body by a single person is unconvincing, unless supported by circumstances. Love of notoriety is the foundation for some of these mistakes, but in the majority of cases people go to the morgue and honestly believe that they have found their beloved ones at last. These are to be distinguished from that class of "born liars" who will identify anything, from an army mule to a thirteen-inch shell.

It is not so very long ago that an officer in this city, who had brought a female prisoner to the police court, identified the wrong woman in court, and found out his error only after the wrong woman had been sentenced and committed to jail. In the same courtroom, within twenty-four hours after, another police officer identified as his prisoner a man who was sixteen years older than the man he had arrested. A remarkable case of deception in this city was that of the man who, believing his stepson dead, found out, two years later, that he had been living in the same house with him all that time, alive and well. Certainly a slap for those who identify by features only. In July, 1897, the body of a woman lay in the morgue; death was caused by drowning. She was thrice identified, each time falsely. A few years since a woman identified each of two bodies as the body of her husband. They looked so much alike, and so much like her missing husband, that she did not know which one to bury. In describing him to the police, before these bodies were found, she said that her husband carried a small harmonica and a peculiarly shaped match box. The first body found had in its pockets a harmonica and a match box. She was preparing the body for burial when another body was fished out of the water, in the pockets of which were a harmonica and a match box exactly like those found on the other corpse. She was debating which body to bury when an acquaintance told her that he had met her husband at a parade. Her husband did not return, so she buried both bodies, to make sure that he received proper interment, in case either corpse was his. A woman and all her children identify a body at the morgue as husband and father. A wake is held, all arrangements for the funeral are completed. The woman is summoned to the morgue, the funeral is stopped; she finds her husband at the morgue—another case of mistaken identity. A colored man returns to his home alive and well, after his wife had supposedly buried him a year before. He disappeared from home; a body was found in the water; it was identified by his wife as his, it was buried, and $491 insurance money was collected. In Brooklyn a boy absented himself from home; in the mean time his parents buried the body of a boy, thinking it to be their son. At dinner, one evening, their missing boy returned alive and well, and was warmly greeted with a sound thrashing. Another body with well-preserved features was found floating in the river. It was positively identified by mother and son. The identification was completed, in that an old-time scar was found over the right eye. After the body was buried, the real husband and father returned alive to his family.

In Tidy the following case is cited: The body of an old man was found on the bank of the Dee, at Drumoak. The left ear and the first finger of the left hand were wanting, the mutilation being apparently of long standing. Two young women claimed the body as that of their father, who had been in the habit of leaving home for weeks at a time, and who had lost his left ear and left forefinger. On the return of the daughters and friends of the supposed party from his funeral, the boatman of a ferry which they had to cross asked them for whom they were mourning, and on receiving their answer laughingly informed them that he had only half an hour before ferried their father over, alive and well—which on reaching home they found to be true.

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Kissing has come to be regarded as so dangerous a pastime in Columbus that the board of health will supply any applicant with a disinfecting lip wash, to be used before and after.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending October 8, 1898:

	Cases.	Deaths.
Tuberculosis	135	147
Typhoid fever	102	36
Scarlet fever	55	8
Measles	33	3
Diphtheria	60	14
Cerebro-spinal meningitis	0	1
Laryngeal diphtheria (croup)	4	8
Chicken-pox	10	0

Plague Statistics.—In Calcutta among male Hindoos the proportion of reported deaths to reported cases has been 86.2 per cent.; among female Hindoos, 72; among Hindoos of both sexes, 84; among male Mohammedans, 85; among female Mohammedans, 88; among Mohammedans of both sexes, 86; among male Eurasians, 54; among female Eurasians, 73; among Eurasians of both sexes, 63; among males of all classes, 83; among females of all classes, 76; and among persons of all classes and both sexes, 82 per cent. The figures upon which these percentages are based are in many instances, particularly in the female group, too small to permit of any sweeping conclusions as to racial susceptibility to the plague poison, but attention may be called to the remarkably low mortality among Eurasians.—*The Lancet.*

League in Italy against Knife.—Through her associated workingmen's clubs Rome has taken an initiative as laudable as it is opportune. She has organized a "Lega contro il Caltello" (league against the knife), the instrument carried in contravention of the law by every peasant and artisan and the medium of the homicides, four thousand and upward annually, perpetrated in Italy. The latest meeting of the league was held on September 11th, when a "statuto" was compiled, embodying the "sense" of previous meetings in a series of final resolutions. Its membership is by this time reinforced by an enormous number of "adhesions," and if, as is more than likely, it becomes the parent of other "leghe" on similar lines in the provinces, Italy will have taken a step long expected of her by contemporary Europe toward clearing her character of the stigma which has hitherto been attached to it for "priority in crimes of blood."—*The Lancet.*

Colored Photography, which will be of such value in medical writings, has again been announced as an assured fact. This time the discovery was made in Chicago.

Inordinate Sympathy.—A physician, in an article illustrating the evil custom of talking to an invalid about his pains, says that once he requested a mother to mark a stroke upon a paper each time that she asked a sick daughter how she was. The next day, to her astonishment, she made one hundred and nine strokes. A three-months' visit away from home was prescribed.

The Idiotic and Feeble Minded.—The total number of idiotic and feeble-minded persons in the United States on June 1, 1890, was 95,609. Of these 52,962 were males and 42,647 females; 84,984 were whites; 42,277 males and 33,620 females were born in the country; foreign whites, 4,875 males and 4,212 females; negroes, 5,788 males and 4,799 females; the remainder, Chinese, Japanese, and Indians, 22 males and 16 females. In the census of 1880 there were 76,000 feeble-minded persons in the United States, showing an average increase of 2,000 a year. In 1870 the number of idiots was 24,395; of these 22,766 were born in the United States. Dr. Fernald estimates that, taking the country as a whole, there is one feeble-minded person for every 500 persons in the United States, while Dr. Ireland is of opinion that as a rough estimate this proportion holds good in those countries which have a census.

Hospital Arrangements in the Soudan.—The arrangements made by the army medical department are most elaborate and complete. They have been made by Surgeon-Colonel Macnamara. A medical officer is attached to each battalion, and one also to the cavalry and to each battery of artillery; then from each battalion, etc., are drawn thirty-two trained men, who retain their arms and can be otherwise used in emergency, whose business is to pick up and give first aid to the wounded and convey them to the field hospitals, which will be at convenient distances behind the brigades in some sheltered position. Behind each brigade are to be five field hospitals, each with one medical officer and accommodation for twenty-five men. These five field hospitals act as one, but are made sectional in order that the sections may be detached to follow any battalion that may be acting independently of the brigade. In all these there is accommodation for one hundred and twenty-five wounded in the field hospitals of each brigade. There is also a senior medical officer with each brigade. From the field hospitals the wounded are to be conveyed as soon as possible, after treatment, to barges moored off the river bank, where there will be accommodation for two hundred men. There will be other hospital accommodation on the river bank. At the Atbara, ample and special accommodation has been provided. A hospital has been built of mud bricks, with walls some three feet thick and a lofty roof, the wards being ceiled with matting and thickly thatched with Dhurra straw. It is probably as cool a place as there is in the Soudan. Here is accommodation for two hundred men, but on so generous a scale that if necessary another fifty or more could without any cramping be added to the inmates. Men reaching this hospital get proper hospital clothing and bedding, and have sheets to their beds. Six medical officers are in charge. There is another base hospital lower down the river, at Abadeah. Fifteen miles north of Berber is another big mud-brick hospital, with accommodation for three hundred men, who will be looked after by eight medical officers.—*London Daily News*, August 26th.

The World's Suicides.—The number of suicides throughout the world is said to be about one hundred and eighty thousand yearly. The greatest number happen in June, the fewest in September, and nearly one-half between 6 A.M. and noon.

Night for Growth.—A scientific writer says that night is the time which nature utilizes for the growth of plants and animals; children, too, grow more rapidly during the night. In the daytime the system is kept busy disposing of the waste consequent on activity, but while asleep the system is free to extend its operations beyond the mere replacing of worn-out particles; hence the rapid growth. This is why invalids need so much rest and sleep.

Mosquito Destroyers.—The natural enemy of the adult mosquito would appear to be the various species of dragon-flies, and there is evidence that a large flight of these insects, which are called in some parts of the United States "mosquito-hawks," is capable of

clearing localities of mosquitoes, even when the pest has been most severe; but the dragon fly, even if it could be used in large numbers, which does not appear to be possible, attacks the pest at too late a stage. Far more hopeful means of fighting mosquitoes are those directed to the abolition of its breeding-places or the destruction of the larvæ. It is true that measures of this kind are not everywhere feasible, but in many places there is no reason why the mosquito plague should not be at least very much diminished by the draining of ponds and marshes and the use of kerosene on the surface of the water.—*British Medical Journal.*

Faith Murder is Manslaughter.—A man and his wife, members of an English sect of faith curers called very appropriately "peculiar people," were held not long ago by a coroner's jury on a charge of manslaughter for neglecting to obtain medical advice in the case of one of their children, who died of bronchitis.

Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the Marine Hospital service during the week ending October 8, 1898:

		Cases.	Deaths.
Small-Pox—United States.			
Alabama, Cedarville	August 1st to September 29th	50	
Michigan, Detroit	September 24th to October 1st	5	
Mississippi, Cooway	September 28th	3	
Small-Pox—Foreign.			
Belgium, Antwerp	September 3d to 10th	1	1
Ghent	September 10th to 17th	..	1
England, Southampton	September 10th to 17th	5	
India, Calcutta	August 20th to 27th	..	1
Madras	August 27th to September 2d	..	1
Japan, Awamori Ken	August 17th to September 11th	53	16
Russia, Moscow	September 3d to 10th	2	
Odessa	September 10th to 17th	3	
Warsaw	September 3d to 10th	10	
Yellow Fever—United States.			
Louisiana, Bowie	October 6th	1	
Delogny	October 6th	1	1
Franklin	To October 6th	375	7
Taylors	To October 6th	100	11
Orwood	To October 6th	79	4
Waterford	To October 6th	2	
Jackson	To October 6th	41	4
Oxford	To October 6th	52	6
Edwards	To October 6th	6	
Water Valley	To October 6th	10	
Harriston	To October 6th	142	4
Fayette	To October 6th	1	
Madison	To October 6th	3	1
Port Gibson	To October 6th	1	1
Woodville	To October 6th	1	
Clinton	To October 6th	1	
Starkville	To October 6th	3	
Hermanville	To October 6th	2	
Yellow Fever—Foreign.			
Mexico, Tampico	August 18th to 25th	..	12
Cholera.			
India, Calcutta	August 13th to 20th	..	1
Calcutta	August 20th to 27th	..	4
Madras	August 27th to September 2d	..	63
Japan, Tokyo Fu	August 17th to September 11th	7	4
Awamori Ken	August 17th to September 11th	1	
Fukushima Ken	August 17th to September 11th	3	2
Kanagawa Ken	August 17th to September 11th	4	3
Plague.			
India, Calcutta	August 20th to 27th	..	4

Books Received.

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Original Articles.

HOW TO AVOID TUBERCLE.

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TUBERCULOSIS is by far the most destructive of all diseases to which the human race is subject, but if simple means for lessening its prevalence were made known widely throughout crowded communities, and became popular in the light of a social duty, there is no doubt that pulmonary consumption, and with it many forms of tubercle, would be rendered much less frequent among all classes of the population than is the case at the present day. Many persons will fall into a grave error if they think they are practically free from contracting the disease, provided their family descent shows a good record of health. Any one and every one is liable to be attacked at any period of life, and it becomes among civilized and educated nations a matter of the utmost importance for the population to make themselves personally acquainted with the means of maintaining a healthy condition of body to resist the disease.

From European statistics we may cite France, where the method of registration is more complete and exact than in England. It has been computed in that country that one out of every six deaths occurs from tubercle, and the pathological records of the morgue show that from forty to fifty per cent. of persons who live to middle age have tubercle in some form or other. In England the proportion, as near as can be judged, is that one person in every seven dies from the disease, and that about one-third of the whole population get it, more or less.

As the malady is not brought under the immediate notice and observation of private persons unless one of the family should be afflicted with it, the prevalence and importance of tubercle are completely underestimated. To illustrate how blind the general public becomes on such a matter, it may be mentioned that the French formerly termed it the "English disease" —probably forming the pseudonym from the illustration presented on the Riviera of English consumptives in search of health—little knowing that their own country, France, afforded an equal or perhaps higher percentage of the disease.

Much can be done on the part of the individual in avoiding tubercle; and even at the commencement of bacillary infection, when tubercles are being formed, personal hygiene and systematic treatment frequently result in permanent cure. Later on, when the streptococcus of pus accompanies the tubercle bacillus in the lung, it becomes a more serious and prolonged affair, but not then hopeless.

The personal directions for avoiding consumption and diminishing the tuberculous virus, are not of an impracticable, onerous nature, nor are the precautionary measures difficult to carry out; but if complied with as far as means and station in life permit, we may be assured that many healthy persons would be protected from the disease, and sick ones saved from reinfection.

Pulmonary tuberculosis or tubercles in the lung, commonly called in the later stages phthisis, decline, or consumption, arises:

(1) From living in an atmosphere containing putrefiable organic matter, such as that given off from the lungs and skin. These vapors, which contain epithelium and fatty particles, rapidly putrefy and become deleterious to health in furnishing a medium for the growth and preservation of various poisonous and dangerous micro-organisms, the most common being the bacilli of tubercle and the micrococci of pus.

(2) By a minute germ or microbe—the tubercle bacillus—entering the human body by the lungs or by the stomach, and occasionally by the skin, if the latter be diseased or injured. This micro-organism is found largely in the expectoration of infected persons; in house dust; in the flesh and milk of diseased animals, as well as in excrementitious matters thrown off by them—such as pus, mucus, dejections, etc.

Although tubercle in many instances cannot be regarded as an incurable disease, it is widespread throughout the world, and varies in intensity with the density of the population. It prevails chiefly among those who breathe and live in a close, tainted atmosphere, or who drink tuberculous milk, or eat food contaminated with bacilli. Overcrowded houses, narrow, ill-ventilated streets, and closely built towns show a high percentage of tubercle, and the disease attacks the lower animals as well as human beings.

Farmers, gardeners, fishermen, and farm laborers, all of whom are much in the open air, suffer least of all; but clerks, drapers, printers, and persons engaged in sedentary labor or dust-producing occupations fall victims to the disease in large numbers; also those in a higher station of life who breathe used-up, stale air, either in shop, bank, office, counting-house, or home. In the agricultural districts the mortality figure due to phthisis is less than half that of London, and the figure for respiratory diseases is still lower,[1] showing that the common feature in relation to the increase of the malady is vitiation of the air in which man lives.

The conditions of predisposition to contract tubercle are: Anæmia; malnutrition and debility (arising either from some acute illness, nervous depression, excesses, or bad habits of any kind, or from obscure causes); abrasions of the mucous membrane from frequent bronchial irritation or catarrh; injuries and open wounds; heredity—chiefly in the direction of weak, small, inactive lungs, or faults in tissue, glands, or blood (it is doubtful if the bacillus of Koch is transmitted from parent to offspring); imperfect chest formation (accidental, acquired, or hereditary); obstruction of the air passages from injuries, malformation, or disease; a weak, thin epithelium (either acquired or inherited), with an inability in the mucous membrane to resist invasion and penetration by microbes; tubercles in the lung are very apt to occur after measles, when there has been much shedding of the epithelial covering in the mucous tract, and also after whooping-cough; abscesses, decayed bone, enlarged glands which

[1] Lancet, January 22, 1898. Supplement to the annual report of the registrar-general.

become caseous, pleurisy, pneumonia, or carbuncles often precede tuberculous disease in the lung.

The two objects to be held in view in combating and avoiding the disease are (*a*) to cultivate invulnerability, (*b*) to destroy or suppress the bacillus. Plenty of fresh air and sunlight, good surface and subsoil drainage, nutritious food and proper clothing, dryness and cleanliness of dwellings, a steady life and judicious exercise—all contribute, as can be well understood, in establishing a healthy invulnerable condition of body toward tuberculosis.

The Dwelling.—If attainable, select a house facing south, with large windows, situated on a dry soil and in a slightly elevated airy position, but not wind swept. Damp, shut-in, ancient houses, with stale paperings remaining in layers on the walls, decayed woodwork, and dark cellars, are the very worst dwellings to inhabit, either in town or country. While close attention is usually bestowed on house drainage (and very rightly, too), the sanitary state of the basement of many houses is often neglected, and no account taken of the mouldiness which may be present, nor the accidental accumulations of fetid litter—as old packings and straw, waste paper, rags, cast-off clothes, lumber, and odds and ends, which often are forgotten and decompose for months in cupboard and cellar without being brought to light or knowledge. The effluvia from such decaying rubbish are aspirated by the warmth of the house into the atmosphere of the upper rooms, are absorbed by the aerial dust, and breathed unknowingly by the inmates.

Every cellar, cupboard, and dark room should be ventilated and kept fresh, as well as the space beneath the flooring of kitchen and basement rooms. Dark, inclosed, stagnant air teems with bacteria and leaks gradually into the house atmosphere. Simply sprinkling carbolic acid about only gives a sense of false security. No amount of any aerial disinfectant, of a strength that could possibly be respired, will touch bacilli or destroy their pestiferous properties as long as the cultivating conditions of stagnation, gloom, warmth, and dampness remain. It is only by airing, lighting, and cleansing dark corners that bacteria are kept down in numbers and their virulence is diminished.

In every house there is a varying amount of floating dust, composed of germs, epithelium, fungi, and débris from the friction of clothing, furniture, paper, carpets, curtains, etc.; specks of carbon from fires, gas, lamps, and candles. We have only to observe a beam of sunlight entering a room to perceive the myriads of microscopic particles which accumulate in the atmosphere we breathe indoors.

Ventilation.—The ordinary estimate of what the necessary purity and cleanliness of our breathing-atmosphere should be, falls far short of the proper standard. Many persons consider that, unless they detect offensive odors or oppressive heat in the house, the air is quite fit for respiration and no dangerous properties can be present. This is altogether a false notion, based on want of knowledge. A person may live or sleep in a room where the air has not been renewed sufficiently for health, and yet perceive no vitiation of the atmosphere whatever; as the olfactory sense gets dulled and insensitive by reason of the very gradual increase of impurity that takes place. On the other hand, the unhealthy effects of rebreathed air are too insidious and imperceptible to strike the attention.

The crude, open-window system for the renewal of air in occupied rooms, although an excellent and efficient plan of ventilation in warm, calm, and temperate weather, or in dry cold climates, has its disadvantages, and does not commend itself generally for adoption in winter time, except to persons who have trained themselves to open-air exposure.

In cold and windy weather ventilation of dwelling-rooms by tubes or open apertures is objectionable and liable to give chills; indeed, the majority of people will not have it at any cost. They prefer to take the risks of bad air. I have found, however, that in these cases a wire-gauze blind meets a great deal of the difficulty, and, provided the room has an open fireplace, it can be effectually ventilated without draughts and alternating currents of chilly air. The gauze blind fits into the window and is hooked to the frame. It can be removed for cleaning or renewing the gauze when choked or worn out. The window sash is opened a few inches, according to the outside temperature or direction of the wind. The homely muslin window blind is a substitute either for wire gauze or coarse bunting, if economy is desired, provided the material be affixed to the window frame and not to the sash itself. In this way the sash can be raised, while the muslin keeps out the coarser dust and blacks, and admits the air from outside, but not nearly so freely or effectually as wire gauze.

To get rid of the imperceptible cloud of dust which accumulates in all rooms, admit the air and light through open windows to every part of the house daily for at least an hour, longer if convenient, and insure continuous ventilation of dwelling-rooms, bedrooms, and nurseries, night as well as day, by means of the wire-gauze blind and partially open window, commencing with an inch and gradually increasing the opening to six inches or more, according to circumstances.

All nurseries and bedrooms occupied by delicate persons should have large windows and a southern or southeastern aspect if possible.

Churches, schools, classrooms, lecture halls, large dormitories, courts of justice, theatres, and crowded rooms of every sort require artificial ventilation and frequent cleansing. A musty odor indicates the presence of putrescent organic matter.

Furniture.—Thick, heavy curtains, stuffed furniture of velvet pile, rep, cretonne, etc., carpets which cover the whole extent of the floor, are fertile sources of dust. Dark papering in a room absorbs the light which would otherwise be reflected on to the inmates.

Curtains should be made of a washing-material light in color. Carpets, if fitted to cover only the central area of the floor, can be more readily taken up and broomed in the open air and sunlight.

Dusting.—All dust should be carefully removed with damp dusters, and not be flicked off the cornices, furniture, and ornaments with a feather brush or dry duster, to be set floating in the atmosphere until most of it settles again. The ordinary "dusting" process and "brushing the carpet" are most objectionable and unhealthy proceedings, unless there is a strong current of air to carry the floating aerial particles out of the windows free from the house; even in that case it is an unwholesome occupation for the servant. Sprinkle the carpet with wet tea leaves, insure a thorough draught, and use an American carpet sweeper.

Breathing.—Learn to breathe habitually through the nose and not by the mouth. Children ought to be taught this habit when they are young. The nasal passages act as a filter for the inhaled air. Much atmospheric impurity and even disease germs, which would otherwise enter the throat and lungs, then get arrested and expelled in the nasal mucus. Hold the body erect and avoid constrained positions of the chest, or a habit of shallow, listless breathing when at rest. Take a long-drawn sigh at intervals, to expand and contract the lungs, and so preserve chest elasticity and capacity.

Clothing.—Full, deep breathing is promoted by wearing easy-fitting clothing, which should be of porous, light, but warm texture, especially loose about the waist and lower ribs, that the diaphragm may not be impeded in its action. Woollen underclothing and

flannel nightdresses or pajamas are healthful. Close-fitting waistcoats, tight trouser bands, tight sleeves under the armpits, corsets, low-necked dresses, and thick veils are bad.

Let children be dressed equably, not layer on layer of clothing over the chest while they go barelegged. By too much coddling, overclothing, and inordinate fear of air and draughts, and confinement indoors, a delicacy and tenderness of the epithelial covering of the skin and respiratory passages are engendered. Susceptibility to tubercle may arise in consequence of this. The epithelial scales have under these circumstances missed the healthy stimulus to proper growth given them by cool fresh air and ozone.

Exercise.—No definite amount of physical exertion can be named to suit all alike, as each individual has his own capacity; but exercise in the open air and walking up hill should not be shirked by any one in health. Town dwellers ought to get out beyond the town limits at least once a week, to breathe the air of the country and obtain sunshine. Children should be encouraged to move about when out of doors, and not be dressed up in stiff clothing that might impede the free motion of their chests and limbs or curtail the desire to play.

Diet.—It is not expedient in the present paper to enter into the question of dietaries or the various contradictory theories and fads relating to food. One point is plainly impressive, viz., that the carnivora suffer but little from tubercle except under extreme conditions of confinement, but most herbivorous and granivorous animals are very susceptible to the disease and contract it largely. The inference to be drawn from this is that nitrogenous diet—flesh, etc.—produces a state of nutrition less favorable to attacks of tubercle than a non-nitrogenous dietary consisting mostly of an excess of starch in some form or other.

There is no doubt that many young persons (especially girls between the ages of ten and twenty) eat largely of sweets, pastry, cakes, biscuits, and buns, to the exclusion of nutritious animal food. Their appetites are impaired for the regular meals, and they get improperly nourished and fall into a debilitated, anæmic condition, inviting tubercle. In the present age man is designed, by the formation of his teeth, stomach, intestines, and the quantity of gastric juice secreted (from eight to ten pints in the twenty-four hours), to eat a fair quantity of animal food—and he has done so, with few exceptions, from time immemorial, and will always do so. It is the most concentrated nourishment he can obtain to supply the nitrogen which is essential to life. Therefore beef, mutton, poultry, game, fish, eggs, and milk—all properly cooked—ought to be consumed in moderate quantities to build up the muscular tissue; starchy foods, as oatmeal porridge, macaroni, semolina, rice, tapioca, bread, potatoes, peas, beans, etc., butter, and fats, for the production of animal heat and formation of bone and adipose tissue; fresh vegetables and ripe fruits for the salts and acids they contain, which are essential to maintain the purity of the blood.

Fluids.—About three pints of fluid is an average quantity for an adult person each day, either in the form of tea, coffee, milk, etc., ale, wine, or water; and the habit should be cultivated of taking this chiefly toward the end of a meal or even after the meal is finished, that the acidity of the gastric secretions may not be weakened before digestion has begun. Spirits, unless well diluted, are bad for any one, except taken under medical advice. Children may be allowed pure water to drink from time to time, if thirsty; and the habit of taking a morning cold bath should be gradually acquired and continued throughout the active part of life.

The Principal Sources of Direct Infection and how to Avoid it.—The designation, "infectious disease," which is now applied to tuberculosis, tends to impress the public mind with an apprehension that in personal contact with the sick the disease may be "caught" in the same way as other infections. If this exaggerated idea gained extension, the lives of many harmless sufferers would be rendered unendurable without advantage to any one.

Alarm on the subject of infection from person to person may be considerably modified by the knowledge that the bacillus of tubercle is not very tenacious of life when outside the body. Unless it has organic impurities to feed on, its virulence is soon destroyed by sunlight and fresh air; and, lastly, actual transference of bacilli to the individual must take place either through the medium of the air breathed or food consumed. Neither the breath nor perspiration of a sick person has been found to convey the disease. The real dangers of direct infection are the following, and the precautions necessary for meeting them are described in the ensuing paragraphs.

(1) From dried expectoration containing tubercle bacilli, which has disintegrated or become pulverized into fine floating particles.

(2) From the flesh and milk of diseased animals, especially the cow. Milk is by far the most important and dangerous.

(3) From excrementitious matters thrown off by diseased house pets, as cage birds, tame rabbits, dogs, and cats.

The actual scare at this moment with a section of the public has regard almost solely to domiciliary contact with consumptive persons. Comparatively little heed is given to the dangers lurking within the house itself, irrespective of infected persons who may, by cleanly habits, be quite innocuous to others. Accumulations of dust, want of air and light, have already been mentioned; but dirty food, animals or birds affected with tubercle, if kept within doors, may become dangerous foci of disease.

Expectoration.—The treatment of expectoration and discharges requires the most careful attention and scrupulous cleanliness. Expectorated matter and pus from wounds must not be allowed to soil the clothing, bedding, walls, carpets, mats, floor, or any part of the house. A spit cup or flask, specially made for the purpose, must be used with some fluid disinfectant, such as carbolic acid, to keep the flies off. The patient should expectorate into this or into a slop vase containing water, so that the contents may be thrown down the water closet.

By dried expectoration, when the bacilli are virulent, tuberculous pulmonary disease not only may be eminently infectious to others, but also may reinfect the patient himself who happens to inhale or swallow particles of it, such as arise from soiled handkerchiefs, pillow cases, carpets, etc., and also from the moustache or beard. For occasions of emergency, cheap handkerchiefs or squares of linen may be used; but they must be burnt soon after use before the expectoration gets dry, and not be sent to the wash. The storing and sorting of such soiled linen can pollute the air.

It may be considered vulgar to spit, even into a handkerchief, but it is far worse to swallow expectoration when coughed up into the mouth. Never do this, or the bowels may become infected. There is some risk, too, that small portions of tenacious sticky mucus might, during the act of swallowing, enter the Eustachian canal in the throat and cause serious trouble to the internal ear.

On no pretext or excuse should any one spit about the house, or in railway carriages, cabs, etc. As it is impossible to prevent spitting out of doors generally, let every one overcome by necessity expectorate in the

roadway or gutter, where the light and air will kill the germs; not on the pavement, where ladies' dresses sweep up the dirt and carry bacteria home to their wardrobes.

No one should kiss a consumptive person on the lips, nor use the same drinking-utensils, forks, and spoons, unless they have been properly washed in boiling water.

A man who has a chronic cough with expectoration ought to shave the beard and upper lip. In such cases it is a cleanly proceeding, if nothing else.

Clean spittoons ought to be in more frequent use than they are, especially in hotels, theatres, and public halls, clubs, offices, schools, etc.

Wash any cups, vessels, flasks, or objects contaminated by sputum, in boiling water. Heat at boiling-point kills infection.

Clear the house of mice, that they may not contaminate food.

If circumstances do not admit of a person affected with tubercle occupying a separate bedroom, let a large airy room be selected, with separate beds; the window should be kept partially open day and night, the room scrubbed out once a fortnight, and the ceiling and walls cleaned and colored yearly.

It is desirable that patients should learn to sleep on the affected side, if painless, in order to keep the lung at rest as much as possible, and prevent the secretions draining into the sound lung.

Before occupation of a room previously inhabited by a consumptive during an illness, precautionary measures should be undertaken thoroughly to purify and disinfect the room, by leaving the windows open, scrubbing with hot water and carbolic soap, recoloring the ceiling, and washing or varnishing the wallpaper and woodwork. The furniture, bed, and bedding should be exposed for some days to the sun in the open air, unless treated with superheated steam.

Milk.—Cows' milk, especially in towns, ought always to be sterilized by heat a short time previous to use. This is better done in a double saucepan, as the flavor of milk is impaired by direct boiling. It is not enough that milk be boiled and then stored in the pantry, cupboard, or dairy, as it can be recontaminated by atmospheric dust. Milk cultivates bacilli readily, and many diseases are conveyed by it—as typhoid and scarlet fever, diarrhœa in children, diphtheria, and tuberculosis to an enormous extent among infants and young children. If pure milk can be obtained direct from a healthy cow—that is, an animal free from tuberculous disease—the nutritive value of this fresh unstored milk will be found superior to that of any boiled or preserved milk; as it is a more natural product and will contain organic glandular extracts, which in the case of sterilized milk have been impaired or destroyed by heat.

Storage of Food.—The provision made by nature in the digestive tract against bacillary poisons when swallowed with food is generally effectual in protecting the body; but there is a large number of children and young persons who are vulnerable or become so incidentally, either from enfeeblement of the acid digestive secretions, or from repeated and constant injection of bacilli, or from a weakened and abraded mucous membrane. The cleanliness of food, therefore, demands every precaution. Care in this respect with regard to milk, cream, cheese, butter, cold meats, jellies, pastry, and confectionery, seems to be utterly neglected in many instances when undoubtedly polluted air can introduce micro-organisms on these substances, which prove excellent mediums for cultivating bacilli or maintaining their virulence. We have only to inspect with the naked eye the objectionable methods adopted by confectioners, bakers, cookshops, restaurants, and railway stations, in the temporary preservation of eatables, to observe that cold food is exposed to large accumulations of atmospheric filth; and there is no doubt that tubercle bacilli are frequently deposited on such food without being rendered inert by the cooking-process, as would be the case if the food were hot. Flies may convey the disease from expectoration to food, or from ulcerated wounds and excrement of domestic animals or cage birds.

Cooking.—As tuberculosis occurs among cattle and poultry, the flesh of these should be well cooked. Heat destroys the dangerous properties of stray germs.

Household Pets.—There are other animals besides the bovine race prone to tubercle, which come in close contact with man and even live under the same roof with him. Placed under such unnatural conditions of life as are entailed by confinement indoors, they frequently get diseased; and, although absolute proof is incomplete, there is a strong suspicion that diseased cage birds communicate tuberculosis to a serious extent among human beings. From cases that have come under my own observation and investigation, I am of opinion that they are a fruitful though unsuspected source of tubercle in many a household. As about four hundred thousand canaries are said to be imported yearly into this country, the distribution of tubercle by this bird alone, when disease attacks it, must be considerable. Animals that come in contact with man are:

Bovines, tuberculosis frequent.

Pigs, tænia common; tuberculosis occasional.

Rats, susceptible to cancer; tubercle rare.

Mice, occasionally tuberculous.

Rabbits, guinea-pigs, highly sensitive to tubercle.

Dogs, tænia common; cancer and tubercle occasional.

Cats, sensitive to diphtheria; tubercle more frequent than in the dog.

Horse, donkey, sheep, goat, rarely affected with tubercle.

Fowls, pigeons, doves, canaries, parrots, all cage birds, tuberculosis (chiefly intestinal) a common disease.

Tuberculous disease begins in such an insidious manner that it cannot be discovered with facility in the lower animals. A pet canary or parrot may distribute bacilli right and left for months without arousing suspicion. The same danger, lessened in degree, exists in respect to fowl roosts adjoining a house, to tame rabbits and guinea-pigs. In fact, a household is safer in regard to health without any of these pets, except, perhaps, the cat and dog properly fed and looked after, and in case of suspected illness sent off at once to the veterinary surgeon.

No infected person with expectoration ought to marry, nor should consumptive domestics be employed in the house. No consumptive mother should suckle an infant or have it to sleep with her.

Sores, boils, carbuncles, skin eruptions, children's teeth, enlarged glands, blocked nasal passages, should all be carefully attended to, especially in the young.

Persons who have been once attacked by tubercle must lead a careful life after recovery, avoiding late hours, crowded assemblies, close rooms, irregular meals, and fatigue or excesses of any kind. If an outdoor occupation can be selected, so much the better. In any case, the preceding rules relating to diet, clothing, and hygiene must be carefully observed.

To maintain health and ward off a recurrence of the malady, the following vital points may be summarized to impress them upon the attention: (1) A generous dietary of nitrogenous food. (2) Free ventilation of dwelling and sleeping rooms by open windows with wire-gauze blind. (3) Adequate house heating in winter. (4) Boil all milk or cream previous to use. (5) Try and obtain eight hours' sleep every night; if

not sound sleep, contract the hours to seven and rest in the day. (6) If debilitated with weak digestion, take rest in the recumbent position a quarter of an hour before and after meals. (7) Wear the loosest clothing possible, especially around the waist and lower ribs, to afford absolute freedom in respiration. (8) Take systematic daily exercise in the open air on foot. (9) If means and station in life admit of a long holiday from time to time, live during fine weather in a tent in the open air or in a summer house for most of the day; and, if unemployed, pursue a hobby to occupy the mind.

September, 1898.

IMPRESSIONS AND CONCLUSIONS BASED UPON A STUDY OF FIVE THOUSAND CASES OF SKIN DISEASE TREATED DURING THE YEAR.[1]

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GENTLEMEN: Having been notified by the chairman of your committee on statistics that my report for the year had been received by him at too late a date for incorporation in the annual report, I decided that, instead of presenting a paper of a different nature for this meeting, I would make, as it were, a minority report of my personal statistics, and give certain impressions which the study of the cases has made upon me.

The diseases giving over one per cent. of the total number and showing the largest number of cases are, in the order of greatest frequency, as follows: Eczema (including all varieties), 985; impetigo contagiosa, 444; pediculosis capillitii, 365; vaccinia, 331; dermatitis "pediculosa," 210; urticaria, 170; scabies, 164; dermatitis (traumatica), 142; acne, 141; favus, 139; intertrigo and intertrigal eczema, 127; tinea circinata, 124; tinea tonsurans, 92; furuncle, 97; syphiloderma, 84; dermatitis calorica (including burns), 75; erysipelas, 72; abscess, 70; verruca, 67; pediculosis corporis, 59; pruritus, 58; psoriasis, 58; erythema multiforme, 54.

Statistics must, of necessity, be somewhat misleading, though I recognize their importance and the value which this society's work has been to us all. We should not lose sight of the fact that many cases are counted over again, some perhaps several times, in making up the society's yearly statistics. No class of patients more than ours runs about from one institution to another, and from one physician's office to another, and naturally they become registered during the course of the year by more than one member. Take, for example, the single instance of favus. Out of my one hundred and thirty-nine cases—an unprecedented number for this country—I can point to but two supposed cures, and, with the exception of perhaps a dozen at the present time under treatment, all the patients have disappeared from observation. Many have entered institutions such as the Randall's Island hospital, from which institution they may figure in the returns from other members. Many children allow the hair to grow after a very inadequate course of treatment and enter private schools. Their exclusion from the public schools is chiefly responsible for the unusual number falling under my observation. Almost all had brought the disease to this country from Europe; a few gave a history of its having developed here. One at least passed the quarantine officers after the law excluding favus went into effect. I have advocated the establishment of a favus school for these children, to keep them apart and under treatment. The best results in treatment have come from close cutting of the hair, epilation, chrysarobin applications alternating with ammoniated mercury ointment; occasionally formalin in solution or ointment. In instances of scattered small areas involving the scalp, perhaps only about a single hair follicle, the diagnosis may be made by finding beneath the crusts, which are not at all characteristic, a minute yellow granule, which when picked out of the depression in the reddened skin and spread upon a slide is found to be a mass of mycelium and spores in a state of pure culture.

Acne varioliformis gave nine instances; two were quite aggravated, causing a disfiguring redness of the face and leaving deforming cicatrices. Unguentum hydrargyri ammoniati is the remedy *par excellence*, but new outcroppings must be watched for and aborted by timely use of the remedy. In one instance it occurred as a unilateral affection. In a girl of seventeen years there was a history of its having existed from early childhood, in association with necrotic lesions on the hands and pernio.

Alopecia areata gave nineteen instances, one beginning as small areas of baldness gradually coalescing and becoming generalized, until to-day scarcely a hair is to be found upon the whole body's surface. Several instances were associated with seborrhœal dermatitis. In several adults groups of large bald areas, clinically corresponding to this affection, were studded over with broken-off hairs, most suggestive of tinea tonsurans, but careful search failed to show any fungus. Culture experiments were also negative. Formalin solutions, used even up to the full forty-per-cent. solution strength, acted well in several instances.

Dermatitis venenata was treated thirty-seven times. One instance involved nearly the entire body, and was followed by a severe attack of acute nephritis with marked general anasarca. Recovery under hospital care.

Dermatitis pediculosa was the term under which was recorded a large number of patients, chiefly children, whose scalp, neck, back, and sometimes the face or other parts were the seat of irritation due to pediculi capitis, and in which the extent and degree of skin involvement seemed to call for something more than the simple diagnosis of pediculosis capitis.

Erysipelas.—I have on two previous occasions endeavored to interest this society in questions relating to erysipelas. My statistics were then drawn from family and hospital practice and dealt with a more severe type. The seventy-two patients here included, with the exception of a few children, all presented the facial type. All recovered, so far as I am aware, usually within from forty-eight to seventy-two hours. There is only one point I now wish to make, but I believe it a most important one. Scarcely one of these subjects failed to give a history or evidence of preceding nasal affection, and the skin manifestations almost always began upon the side on which the nostril was involved. Every patient was treated by thorough intranasal swabbing, upon both sides, with a fifty-per-cent. watery solution of ichthyol. Ichthyol collodion was applied over the skin. In some instances the adhesive band was applied about the forehead. In scarcely a case did the scalp become involved, and then not extensively. Pseudo-erysipelas, as the term is here employed, is meant to designate an inflammatory condition of the arm following vaccination, of which thirteen instances were recorded. Extension of the process does not reach beyond the elbow or above the arm, as a rule. There is roughness of the skin rather than the smooth surfaced erythema of erysipelas before vesiculation occurs. In other respects the process is clinically much the same

[1] Read before the American Dermatological Association, June 1, 1898

as that of true erysipelas. True erysipelas not infrequently follows vaccination, as shown in a number of instances in this collection.

Erythema multiforme, seen mostly in children (fifty-four patients), showed, in all instances in which the temperature was taken, fever ranging from 100° to 101.5° F. (a symptom not always noted in the books). Aside from the erythemas prodromal to the exanthemata there is a large class, in all probability of infectious origin and associated with digestive defects, which latter alone need correction by intestinal antiseptics to cause the rash to disappear. The joint and muscular pains often present, as well as fever and other subjective symptoms, point to an infectious origin for many instances. Its occurrence as an occasional sequela of vaccination points in the same direction.

Erythema Nodosum.—From a clinical standpoint this should not be included as a form of erythema multiforme. It seems to stand by itself. So many of the ten patients seen have been young adults or children who have but recently landed from emigrant vessels, that I have come to look upon the hardships of a steerage voyage as having some causative influence. The temperature is at times as high as 104.5° F., remaining at 104° F. or but little below this point for several days, despite energetic use of salicylates, which is the best treatment I know of. There is not uncommonly a history of articular pain in one or more joints, antedating the eruptive lesions by a week or less. I believe it to be an infectious process closely allied to rheumatism.

Zoster.—In the forty-one cases there were few presenting special interest. The youngest subject was two and one-half years, while the youngest given by Cantrell in his statistics (*The Philadelphia Medical Journal*, March 26, 1898) was three years. In almost all cases the lesions were varnished with a three-percent. methylene blue in collodion. Even in the aged with considerable pain the lesions dried up rather promptly under this local treatment and the pain disappeared. The statement has recently been made that zoster should cause a suspicion of the presence of phthisis. This I could not verify in a single instance.

Impetigo, to judge from this year's experience, almost always has pediculosis capitis as an etiological starting-point.

Intertrigo in infancy, whether associated with seborrhœal eczema of the scalp, originating in irritating dejections, or assuming the form and outline of eczema marginatum and suggesting a mycotic process, disappeared more rapidly under methlyene-blue solution than any other single remedy I have ever employed. Many instances showed superficial ulcerations in the groin, folds of the neck, or elsewhere, and under the blue solution these, too, always did well. An interesting instance of disseminated tinea circinata in the region of the groins raises a point of differential diagnosis.

Folliculitis abscedens was the diagnosis in twenty cases. The subjects were all young children or infants at the breast, and the affection occurred mostly during the heat of summer in connection with miliaria. The scalp, face, and neck were mostly involved in some, while in others the region of the buttocks and thighs was more largely implicated. Some lesions attain enormous proportions, but it is found that these patients do better under medical treatment and local applications than when subjected to surgical measures. Indeed, in one case referred to the surgeon, in which the lesions were opened and dressed under the most approved antiseptic methods, fatal erysipelas developed. All other cases recovered, so far as my records go.

Lupus Erythematosus.—One of the four instances treated was cured by electrolysis. The lesion consisted of a single patch, involving one side of the nose in a woman.

Molluscum epitheliale gave twenty-four instances. In our last report there were ten, and in the combined statistics but nine and one-half per five thousand. One of the growths upon the cheek of a young girl was the size of a hickory nut, and the surrounding infiltration caused it to look but little like the clinical picture of this affection.

Morbilli.—This diagnosis was entered but once, for the reason that the affection is not treated in the skin class. I would like, however, to state that in many cases examined in the pre-eruptive stage I was enabled to verify Koplik's sign, which, I think, is one of great value, not only in detecting measles at an early period but in differentiating from rubella and morbilliform erythemas. In one instance I was struck with the marked inflammatory change which had suddenly occurred in the eruption of papular eczema (lichen simplex type), which had been under treatment for some days. On taking the temperature it was found to be 105° F. The catarrhal symptoms were slight and there were no eruption of measles and none of the usual clinical signs upon which the diagnosis could be established. An inspection of the buccal membrane, however, removed all doubt by the discovery of minute pearly points upon a red base.

Pediculosis "pubis" of the eyelids in children was treated in four instances.

Pityriasis Maculata et Circinata (Rosea).—Thirteen instances. These cases uniformly show a temperature extending in its range from 100° to 104.5° F. At times the eruption is intensely itchy and becomes highly inflammatory. One was followed by very extensive desquamation in rather large but thin flakes. The face is often involved. In one instance it occurred in secondary syphilis, making an interesting differential study. The affection is probably more often mistaken for syphilis than for anything else, and some instances surely suggest the combined large macular with the small or miliary, papular, secondary rash, but the grouping of the latter is lacking and the characteristic central desquamation and peripheral extension of the lesions of the pityriasis rosea remove any doubt. One instance was in a child of four years.

Psoriasis.—Fifty-eight cases. Anthrarobin and chrysarobin ointments and combinations with collodion were almost wholly relied upon for external application. A number of patients relieved of the eruption in the early part of the year turned up again with renewed outbreak toward its close. Iodothyrin was given an extended trial in about twenty instances, but without results which would lead me heartily to advocate its employment, unless possibly in obese subjects.

Prurigo is worthy of note from the fact that no less than fifteen instances were recorded. They occurred mostly in children, some of whom had been but a short time in this country, but all giving a history of the affection's existence from very early life. A question mark should be placed after about five of these, as not having been sufficiently long observed to establish a positive diagnosis, or as being in the first stages of persistent or recurrent urticaria, pruritus, and thickening before papulation. There were, as I remember it, but two adolescents in the number. Prurigo mitis was recorded twice. One presented the appearance of persistent or chronic cutis anserina or nutmeg-grater condition of the entire surface, along with urticarial wheals and papules.

Scabies.—One hundred and sixty-four cases. For the past four months I have employed Dr. Sherwell's favorite remedy, consisting of dry powdered sulphur, and I must say that the results have been excellent. The pruritus is more quickly arrested by it, I believe, than by other means usually employed, and, if faith-

fully persisted in, it effects a cure within a comparatively short time.

Syphilis gave but eighty-four instances, for the reason that cases are also treated in other departments of the institution. I believe that under the intramuscular-injection method better results are obtained than by the older plans. It is only exceptionally that men object, though many women absented themselves from the clinic after the initial injection, which, by the way, is usually the one to give the most inconvenience.

Tinea circinata, or ringworm of the body, gave one hundred and twenty-four instances, or fifteen less than the number of favus cases. During the first half of the year I employed chrysarobin dissolved in ichthyol and water, which worked well, but more recently I have applied a strong solution of formalin, which acts still more promptly, but must be used with some care to prevent irritation of the skin, and is open to the objection of giving decided pain. It should, as a rule, be applied by the physician himself.

Tinea tonsurans gave but ninety-two instances. Some were interesting from the fact that in the same family several distinct clinical forms of trichophyton disease existed at the same time. Thus in one group of three children one sister presented the bald or alopecia-areata form of ringworm of the scalp, a second sister showed a single acute ring of tinea circinata upon the face, and the brother, who was the first to be affected and the last to recover, presented upon the wrist and back of one hand rings of vesico-pustules. He also had disseminated ringworm of the scalp in small areas and disseminated scaly plaques upon the ears, neck, and upper half of the trunk. The coexistence of the typical round, dry, scaly, furfuraceous plaques on the scalp, studded with broken-off hairs, with either rings or irregular scaly patches on the skin surface, has not been uncommon, pointing to an identity of fungus for both clinical forms.

Tinea Versicolor.—In the forty-seven cases observed, several points have impressed me: (1) That a large proportion of the subjects were young women, many of whom came from Austria; the proportion of Austrians to Poles treated at the institution being very small. (2) That many gave a history of recurrence after apparent cure. (3) That several had lesions extending upon the neck and even to the sides of the cheek over the lower jaw. One had a patch upon the brow. (4) That tincture of iodine or Lugol's solution brings out the fainter and at times almost imperceptible lesions by staining them a deep mahogany color, which contrasts markedly with the staining of the adjacent normal skin. (5) That in a certain rather large proportion of instances, especially in women, a patch hidden by the hairs of the pubic region escapes observation and treatment, and that recurrence is often due to this fact. (6) That treatment must be persevered in after the surface appears free from lesions, because the origin of each separate round plaque is perifollicular and perhaps intrafollicular, and unless remedies are employed which penetrate, or are employed in such a way that they are made to enter the follicular openings of the skin, new punctate lesions will be seen to arise about the follicular openings.

Vaccinia deserves a passing word in explanation of the large number of over three hundred instances recorded, from the fact that such cases are not generally so frequent in skin classes, although much interest attaches itself to the generalized eruptions and sequelæ. The majority were what might be designated "bad arms," *i.e.*, deep indolent ulcerations, many with surrounding infiltration, crateriform, chancriform ulcers, etc. Some lesions presented more the features of inoculated variola than those of vaccinia, with development of vesicles upon the arm at a distance from the point of inoculation. In several instances there was secondary accidental inoculation by scratching. Twice typical vaccinia was implanted upon a post-auricular eczema and ran the same course as upon the arm.

Among the generalized eruptions:

Roseola vaccinica or erythema was observed a number of times. The papular form was also common (a week or thereabouts after inoculation). The most interesting was the vesicular. Some instances were diffuse, some grouped, and lesions occurred also on the mucous membrane of the mouth and tongue, but not in groups of two or three vesicles as in varicella.

Many lesions were papulo-vesicular, a vesicle developing upon the apex or in the centre of a flat maculo-papule, the borders of the latter taking on a shiny or waxy raised border unlike anything seen in varicella. This central vesiculation rapidly flattens, desiccates, and subsequently desquamates. Some instances I put down as of varicella type, so closely did the lesions simulate chicken-pox. They developed about the twelfth day, and usually showed no coincident lesions in the mouth.

As sequelæ, as well as before local vesiculation had occurred, I found urticaria and erythema multiforme quite frequently present. Generalized scarlatiniform erythema was not very commonly observed. Erysipelas developed upon the arm after vaccination (sometimes as late as the fifth or sixth week) in a number of instances attributable to secondary or subsequent infection. Pseudo-erysipelas, already mentioned, an extending erythema of limited degree, was quite frequent.

Impetigo contagiosa was rather infrequent. I show a photograph of two instances of persistent impetigo at the site of the vaccination long after all trace of the vaccinia proper had disappeared.

Pemphigoid lesions were noted in several instances. Large bullæ were presant upon the feet, hands, back, chest wall, etc.; some with clear contents, others purulent.

Keloidal scars, even of mild degree, were rarely seen to follow even the deepest ulcers.

Verruca.—Warts are auto-inoculable, and hence hetero-inoculable. Of the sixty-five patients treated, several were of members of the same family. The history was frequently given of one (the largest) "seed wart" coming first and others developing afterward, and that a second child showed the growths subsequently to the one presenting the parent wart. This is the same history as is usual in molluscum contagiosum. The contagiousness is seemingly proven by the fact that once wholly removed, other new warts do not continue to develop. Interesting instances were those in which a little girl with abundant warts upon the hands and wrists showed a group of fifty lesions surrounding the right eye, with none upon the opposite side; a young man with forty upon one palm; a young girl with the hands covered (several of "seed" variety), and about twenty on the inside of the mouth (buccal membrane). Most efficacious preparations for local application were found to be: acetic acid, 1; sulphur, 2; glycerin, 3; or salicylic acid with acetic acid and cannabis indica in collodion. Trichloracetic acid was also used with good effect.

Among rare cases may be mentioned two of psorospermosis and one of rhinoscleroma.

612 East Sixtieth Street.

Fibroid Tumors.—I wish once more to express the opinion that the next advance in the treatment of fibroid tumors will be the general adoption of early operation and the more general substitution of myomectomy for hysterectomy, as being the most conservative treatment of these growths.—Charles P. Noble.

THE MEDICAL ASPECTS OF CAMP MANAGEMENT AT CHICKAMAUGA.[1]

By H. A. HAUBOLD, M.D.,

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Much can be said of Chickamauga Park, much has been said that is true, and much, very much more that is untrue. A little of what is true I shall try to say to-night.

It is quite impossible to exclude from a subject of this sort all references to its military side. Medical men, even those in the army, are notoriously ignorant of the military necessities of a campaign against the enemy, and it would seem well that this is so. The care and treatment of the sick and injured and advice to the commanding officers on sanitary questions are their allotted field. Mark the word "advice." The medical officer is in no way and at no time directly responsible for the sanitary condition of an encampment. He simply advises the commanding officer, and that individual is the responsible person.

I repeat, "And it is well that this is so." Medical officers have the singular and unwarranted desire to help and render easier the lot that has befallen the poor devils that come under their observation. It is also a peculiarity on the part of commanding officers to be devoid to a considerable extent of this desire, and, therefore, it is well for the surgeon to be ignorant of military necessities. It eases his conscience. So if I should make use of any harsh phrases, if what I say should reflect discredit upon the heads of any department in the army, it must be accredited to my own ignorance of military necessities. I am still an officer in the volunteer army. Somewhere in the rules and regulations governing this body it is made an offence, I believe, of some gravity, to offer criticism of your superior in bars, or leaves, or eagles, or stars, or what not. Still I entered the volunteer service preeminently as a medical man. With myself the occurrences that came under my observation have left impression only as regards the lessons I learned as such. It is these that I shall offer you, interspersed with some deviations, the perhaps inevitable accompaniment of the more or less emotional if not dramatic impulses that always escort everything pertaining to war.

Imagine, if you can, scant woodland, no underbrush, no shrubbery, some open fields, grassless, dust covered, sun baked; a mud-stained shallow creek, and its equally mud-stained shallower tributaries—and this is Chickamauga Park, the domicile of more than forty thousand men for several months. Camp Thomas, Chickamauga Park, Ga., is reached from Chattanooga, Tenn., over an intervening distance of about eleven miles, by means of a single-track, so-called rapid-transit railroad. Over this all troops, cavalry, artillery, and infantry, all rations, supplies, and ordnance were transported. The journey itself is picturesque enough. The trains take their way through a valley, on the one side of which the famous Lookout Mountain towers, from whose summit the Confederate commanders flashed signals into seven States during the war of the rebellion; and on the other lies Missionary Ridge, where the late General Grant had his headquarters at that time.

Still this does not compensate for the inadequacy of the railroad accommodations. It is the deficiency in this particular that was no doubt responsible for the much-talked-of delay in delivery of necessary supplies.

My regiment, the eighth infantry, New York volunteers, reached Chickamauga Park on May 24, 1898. What I am enabled to relate dates from that time. For reasons that will appear later, it is of importance to state that the park had been occupied by troops of the regular army for some time (several weeks) before the volunteers arrived.

As to the further description of the camp (I have already described its general appearance), Chickamauga Park is in the northern part of Georgia, five or six miles south of the Tennessee border line. The soil consists of clay chiefly. There is much surface rock. Indeed, for the greater part of the space that came under my observation, it was impossible to dig trenches more than three or four feet in depth for the receipt of fæces. This made the digging of new sinks necessary every few days, and, as the surface space allotted to each regiment was small, it ultimately became a serious question as to where they were to be dug. This question is always a difficult one to solve in an encampment that is older than two or three weeks. They should not be dug too near the tent ground; still many soldiers are afflicted with intestinal disorders that make frequent visits to the sinks necessary at night; and when the goal that the poor fellow is trying to reach when he has a violent pain in his abdomen is too far off he is apt to stop by the wayside. It is easy to see the menace to health under these conditions. Remedy—move the camp before it gets beyond three weeks old.

Again, the rocky nature of the substrata made absorption or percolation of the contents of the sinks into the earth impossible, and when the first violent rainstorm occurred the newly closed fæces basins were washed out by the water. No rain fell for weeks, and during this period of time the thin layers of earth superimposed upon the rock became dry and powdered, to such an extent, indeed, that tent pegs were made to hold with difficulty, and it was not uncommon to have tents fall as a result of their pulling out. Much of the surface of the park was what is called dry creek, *i.e.*, gullies in the rock. In the intervals between rain storms these were perfectly dry, but when the rain fell they became filled with rushing torrents of water, several feet in depth, and indeed in some situations were quite impassable. It is easy to see from this that the contents of the shallow sink trenches were washed out into the general waterflow and spread over large surfaces in the park. In a short time the water, clarified by sedimentation, collected for a time in the deeper portions of the creek bed, and lay there, a tempting-looking extract of fæces.

Of course it was impossible to keep the men from drinking of this; indeed, it was a temptation that few could resist. This is more readily understood when the appearance and character of the water supplied through the supply pipes are borne in mind.

This brings me at once to the consideration of the very important question of the water supplied the troops. I do not wish to be understood as making positive claim that the source of water supply was infected at the point where it was drawn. The engineering department of the army holds that Chickamauga Creek was tapped at a point nearer its source than where drainage from the camp could possibly enter, and that chemical and bacteriological tests were made, satisfying them that the water was good and not infected. This latter point may be dismissed with the statement that I have had opportunity to observe the testing of water quite frequently, and that I am as a result reluctant to attach importance to it. Still this is a matter of opinion.

But this is nevertheless true: that for the first few days my regiment was in camp the water supply did not reach our regimental camp; that water was drawn for drinking-purposes from Chickamauga Creek at points where infection was possible through contamination from drainage from the camp sinkholes of other regiments; that the water supplied later through

[1] Read at the October meeting of Lenox Medical and Surgical Society.

the pipes was of the color of mud and altogether repulsive to every one; and that during my stay men and horses bathed in the creek at various points both above and below where it was tapped.

Chickamauga Creek is the natural drain of the park. Everything soluble ultimately reached it. It empties into the Tennessee River some distance above the point at which the town of Chattanooga draws its water supply. (Incidentally, watch this place for typhoid fever next spring.) Again, the water was led through a six-inch pipe laid on the surface of the ground. It was here daily kissed by a broiling Georgia sun. Of course, it always had the temperature of the air. Contrast this warm, nauseous mud soup to the clear, cool extract of fæces I have referred to, and it is not difficult to see why the men in their unfortunate ignorance preferred the latter. It is true the men were warned against drinking anything but the regular water; it is also true that cast-iron rules were formulated, prohibiting them from bathing in the creek; but it is impossible to impress a thirsty or an overheated soldier with rules of hygiene.

This brings me to the consideration of the one and really only grave disease that menaced the lives and health of the troops, *i.e.*, typhoid fever. It is hardly necessary to state that the first cases were imported —whether by the regular troops who first occupied the camp or by the volunteers, it is difficult to say. I have no precise knowledge of the condition of the regular troops. The various theories held by some, that typhoid was caused by the fruits, pies, etc., vended by hucksters, or the result of the untrained volunteer sleeping on the ground, are sufficiently absurd to be dismissed with this mention. The source of infection is, I think, easily recognized in the water the men drank. I do not maintain that this necessarily applies to the general water supply. This would be too grave a statement to make positively, yet it is my opinion that it does. But the pools of rain water and the wells and springs that were discovered after the first great rainstorm certainly were infected. Infection was also carried by flies. Never has mortal man seen such vast numbers of this vermin as infested Chickamauga Park. Myriads of them infested the sinks and myriads infested the food. It is easy to see how readily these insects could carry infection under the circumstances. Later came the dust as an element of infection. As I said, the contents of the sinkholes was spread over the ground by the rainwater; then dried out under the benign influence of the sun; converted into dust under the feet of tramping men, horses' hoofs, mule carts, etc.; carried everywhere by the wind. So you see it is not difficult to understand why typhoid fever raged as it did.

If the deductions made in the sciences are true, typhoid fever is a preventable disease. To prevent first its occurrence, and later its spread, is a gigantic undertaking, if not an impossibility, in a camp whose existence extends over several months or even weeks. The conditions that preclude its occurrence are more or less ideal; they exist only in well-regulated towns or cities. They could never have been made to obtain in Chickamauga Park. This fact was recognized long before the epidemic had assumed any magnitude. Discussions regarding it were held by medical officers in the presence of commanding officers. In truth, this statement was made by the writer during the latter week in June in the presence of a general of division and several of his staff: "There are one, two, three, or more cases of typhoid fever in the hospital from every regiment in your division; while the total number of cases is not yet large, they mean a common and widespread source of infection, and there will be a large number of cases on record in a very short time." The medical history of the camp proved this soon enough. In an adjoining division the number of typhoid-fever cases at that time had reached a considerable number—I think seventy odd, and new cases were coming in daily. The troops were not moved out until September.

It may have been a military necessity to keep the troops where they were, but from a scientific standpoint the infected area should have been abandoned, since remedy of the evils was impracticable. One reason why this was not done that has been adduced can be answered by the medical officer—that of expense. Pensions far exceeding in amount the cost of moving the troops from Chickamauga Park will ultimately be paid for the remote sequelæ of typhoid fever.

The character of the epidemic was virulent. Some of the men died from the acuteness of the disease. Temperatures ran high—105°, 106°, and 107° F. Delirium was often maniacal, suggesting sudden invasion of the blood by large quantities of toxins. Beyond these, none of the symptoms deserves special mention. In a general way it may be said that the cases were rather more severe than we usually see in New York City. In this connection it should be borne in mind that most of the men were at a time of life when resistance to disease is greatest, *i.e.*, between eighteen and thirty years of age; that their physical condition was good at the time of their enlistment. This, I think, makes it fair to conclude that the epidemic was of a malignant character.

As to treatment, there is little to be said except in a negative way. It is to be borne in mind that medicinal treatment of typhoid fever is of little value. Even in large towns and cities it is difficult to procure the conditions necessary to the rational treatment of this disease, except in well-equipped hospitals. Naturally these could not possibly be placed at the disposal of the patients in a field hospital. None of the so-called abortive or curative methods was attempted in the wards of the hospital to which I was attached. The knowledge of the pathological history and morbid anatomy of the disease precludes indulgence in these wild absurdities. The treatment attempted was, in a general way, fluid diet, abstraction of heat, stimulation, and rest. Intestinal disinfection was attempted by the administration of insoluble disinfectants, on the theory of lessening tympanites only. No idea was entertained that the typhoid bacteria could be reached in the glandular structures of the submucosa of the gut. In cases in which constipation existed, calomel was employed in small doses frequently repeated, with the double intent of laxative and disinfectant. When hemorrhage existed, this latter method was of course not used. Refinements of treatment were not indulged in, and, indeed, necessities were frequently impracticable, for the reason that the materials and apparatus were not furnished. Tubbing was rendered impossible, because we had no tub; wet packing was used but did little service, for the good and sufficient reason that the water from the pipes was of about the temperature of the air. The nearest standpipe was several hundred yards from the hospital tents, and the water from it was dragged over the intervening distance in barrels. An effort was made to procure water from Crawfish Spring, distant about three and one-half miles; indeed, mule carts were employed in hauling it; but when it ultimately reached us it, too, had become quite warm and, though better than that from the pipe, it was still of too high a temperature. Ice was as rare as were diamonds. Two hundred pounds a day was allotted us; this was carted over hot, dusty roads, in slowly rumbling mule carts, and much of it dripped by the wayside. Later more was supplied from private sources, but never did we have sufficient in quantity to be of much service. Milk—the sheet anchor in the nourishment of cases of continued febrile diseases—

was supplied in cans and placed in a trench dug in the ground, which we used as a refrigerator. In the afternoon the ice gave out; the milk soured, and was rejected by both patients and stomachs.

The nursing, while not skilful, was rather better than one could expect under these trying circumstances. Some of the men had been trained nurses in New York and other large cities. All of them are only to be commended for their prodigious efforts. I am referring now to the much-abused hospital-corps man, not the delegate from private charities. Our boys were soldiers, drilled in the hot sun at "litter drill" and "the school of the soldier" for part of the day, lectured to in first aid to the injured, quizzed, sworn at, and bedded on the ground at night, when they weren't doing duty as night nurses. I did not see a single inhumane or culpable act performed by any member of the corps attached to the hospital of the first division, third army corps. I never saw one of them drunk; but I did see fatigue, pallor, gauntness, and self-sacrifice constantly. And this applies to all, from the senior sergeant to the detail at the mule corral. Never have I seen a single man hesitate to obey an order. Some of them were woefully lacking in training, but never in willingness. Often have I seen a tall, slim youth, standing wearily in line at retreat, straighten up when his name was called, detailing him for night work, at the end of a long, insufferably hot day; and later seen him go resolutely about his work in the dim light of a hospital tent.

These things made the care and treatment of our patients extremely difficult. While it is true that ideal treatment of typhoid fever in field hospitals is impossible, it is also true that some of the conditions were the result of lack of judgment in executive departments. Water, ice, and milk—these three things were obtainable, and we had neither of them in sufficient quantity nor of proper quality. Look once upon the spectacle of a patient, gaunt, emaciated, delirious, with sordes on the tongue, lips, and gums so thick that articulation is impossible, motioning inco-ordinately at his mouth with trembling, transparent hands, and then know that the ice was melted, the water warm and mud stained, and the milk sour, and you will agree that, after all, tremendous effort should have been made to effect a remedy in executive departments. I make no apology for this statement, nor do I offer any qualification. War and misery have gone hand-in-hand as long as history has existed. Nothing will ever part them. But they should not meet first in camps of mobilization.

Regarding pharmaceutical supplies, large quantities of more or less useful drugs were issued and distributed. The method of organization of the hospitals was good enough in theory, but gave rise to delays that might have been avoided. It would lead me too far to go into this extensively. The general impression among regimental surgeons was that the division hospital was not a desirable place to send their patients, and they were right. Still it was quite impossible for them to obtain all they wanted for each regiment, when the division hospital had nothing itself except in drugs, and these were issued as rapidly as possible.

The food furnished the troops was badly selected. Bacon, beef, potatoes, bread, hardtack, tomatoes, onions, beans, and coffee were the chief articles issued. No one questions the heat value of these articles of food, nor is there any doubt that they contain the three classes of substances necessary to maintain life. But there was not enough variety, and, as intestinal disturbances were exceedingly common, the diet offered was not very conducive to health. Of course, some of the food stuffs furnished were convertible into either cash or some other article of diet. But in the confusion of matters it was impossible to obtain either, so the saving clause in army regulations that makes rations convertible was of no service. There certainly was not enough fresh meat furnished, and the bread, while well prepared from a baker's standpoint, was too porous. On the whole, the food was not of a good quality.

There were, of course, many minor hardships and discomforts that were without doubt attributable to ignorance on the part of various officers, and in many cases in the men themselves. But this has to do with the system of organization, and is not properly discussed here.

Intestinal disturbances of various kinds existed very largely, and presented much variety as to severity. Most of them were simple diarrhœas, although there was some dysentery. In some instances they were attended with rise of temperature and other general symptoms of the absorption of toxins into the blood. Grave cases with bloody and mucous stools occurred, and were not readily amenable to treatment—due in part to the fact that milk and readily digested food, such as eggs, rice, etc., were not obtainable.

As regards venereal diseases, these did exist to a considerable extent; they are the invariable accompaniment of all military encampments. Still it is not true that they were more prevalent than one would have a right to expect. One writer, a surgeon on a general staff, tells us, in an article in the *Journal of the American Medical Association*, that eighty per cent. of the surgical cases at Chickamauga Park were venereal. When it is remembered that the troops were not under fire and that surgical cases were rare, the misleading character of his statement is sufficiently apparent.

One word as to climate. The air is dry; the temperature very high, often rising higher than 100° F.; still the nights were cool. Not a single case of insolation occurred during the time the troops camped in the park.

On July 8th I went to bed with typhoid fever; my experience stopped on this date. Some of my associates followed me at short intervals. I offer no eulogy upon the efforts of the medical man. It would be inconsistent with the history of things ever to expect favorable comment upon them, and surely under the circumstances it would be unwise to offer one myself.

ANTISEPSIS VERSUS ASEPSIS IN COUNTRY PRACTICE.[1]

By W. B. KONKLE, M.S., M.D.,
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Conditions determine appliances—determine their applicability and practicability. *Vice versa*, any given appliance presupposes the conditions essential to its employment. Hence, in the abstract, an appliance can approach perfection only proportionately as the related conditions represent the ideal. In practice, however, that is most perfect which most nearly harmonizes with and fulfils the requirements of the circumstances and indications present. The elegant patent-leather shoe might be considered the most finished product of art as to footwear; but the high-topped stoga boot clearly discounts it in a log camp. The latest style of harvester is a splendid machine in a smooth, even field; but it would look woefully out of place on a sideling new ground: in competition with it here the old cradle would majestically maintain its pre-eminence.

That in the abstract, and in practice as well where corresponding environments prevail, aseptic methods mark one of the highest attainments of the healing art,

[1] Read before the Lycoming County (Pa.) Medical Society, September 8, 1898.

is a proposition that no one should doubt—that no one could successfully dispute. But let us survey and scrutinize the conditions presupposed thereby and prerequisite thereto. I need not detail or describe these, for all can understand and appreciate them. The civilization of the dawn of the twentieth century exhibits no more lustrous, no more inspiring picture than that of the model operating-room, with its ingenious design, its elaborate yet accurately systematized paraphernalia, its admirably organized personnel, its superb discipline.

But let us reverse our gaze, and contemplate other scenes painted from life. A woman in her thirteenth labor at full term: a veritable veteran, with one of those magnificent pelvises upon whose merits dear, venerable Elerslie Wallace used to love to linger, and with one of those vulvas of awful dimensions and infinite dilatability, through whose august portals a twelve-pound baby comes sweeping like a canalboat out of a lock. A consummately easy case for the doctor—barring the conspicuous absence of nearly everything ordinarily supplied for use on such occasions, and barring also the battle with flies and contact with multiform filth of various degrees of antiquity. The next day the doctor finds, in a cup in which he had left some sugar-coated pills, a squad of bedbugs studying pharmacy—more bedbugs than pills. Recovery is prompt and uneventful, of course. But imagine the introduction of aseptic obstetrical practice in that forbidding atmosphere!

Again, the doctor is called ten or a dozen miles into the backwoods region to care for a man whose hand has been lacerated by a shingle machine. A neighbor must take charge of the ether when the operation begins; two or three other neighbors must assist; the one man present trained for such work must keep his eye on all, and simultaneously be doing all possible for a pair of hands to execute. The wound progresses very satisfactorily and the result is creditable. But fancy an attempt to construct the complicated and delicate mechanism of aseptic surgery out of such material and upon such a soil!

These are extreme situations, one will say. That is admitted. They are simply adduced for the more forcible presentation of the point asserted. Let it be remembered, however, that between this emphasized position and the limits of condition appropriate for the application of asepsis there is a wide intermediate territory, throughout the whole extent of which the method must prove disappointing. In this regard anything short of perfection is altogether imperfection.

Another will say that even under unfavorable circumstances favorable results follow this method. I would reply that under such circumstances favorable results as frequently follow no method at all. These apparently exceptional instances indicate only that injurious germs were not in the locality or that the tissues have been more than ordinarily resistant. Indeed, it seems that nature has in this way vouchsafed some compensation to the poor man separated from the best ministrations of our art.

Against the attempt to apply asepsis beyond the bounds of the conditions necessary to its success I would protest. To preserve a semblance without an essence is the merest cheat. Let there be no ape-like going through the motions simply with the idea that duty has been done by such adherence to unreal forms. Let asepsis take its place where it will be a fact and not a delusion.

This protest is made the more earnestly—derives its practical importance, indeed—from the consideration that an ineffectual attempt at asepsis may forestall a most beneficial application of antisepsis. Antisepsis may be of the highest value where asepsis would be impotent. If we may not exclude germs, the expediency of waging war against them still remains.

To antiseptic methods were due many of the successes of the old days of medicine. Our forefathers had learned, partially at least, to nonplus a foe, vaguely conjectured, perchance, but not then revealed. The balsams and essences of former generations were none the less useful because no rational comprehension of their *modus operandi* was entertained. Antisepsis is to-day a science; and the light of science always guides more clearly and accurately than the *ignis fatuus* of empiricism. In the trustworthy germicides at his command the physician wields a weapon of genuine efficiency, inestimably valuable by reason of the possibility of its application under all conditions. Appropriately to the last degree falls this weapon into the hands of the country doctor.

Progress of Medical Science.

Syphilis of the Stomach.—Professor Dieulafoy draws the following conclusions: (1) Syphilis of the stomach is not so rare as is generally supposed. (2) The syphilitic lesions of the stomach occur in various forms; for example, hemorrhagic erosions, ecchymoses of the mucous membrane, gummous infiltration of the submucosa, circumscribed gummata, ulcerating gummata and their resulting cicatrices. (3) Here, as in all cases of loss of substance of the stomach wall, the acid gastric contents probably finish what the initial ulcerative process began. (4) The symptoms of syphilitic ulceration of the stomach may simulate all those of simple ulcer—pain over the xiphoid cartilage and vertebral column, vomiting of food, hæmatemesis, melæna, irritability of the stomach, cachexia. (5) The syphilitic nature of the stomach affection cannot be diagnosticated from any of the previous symptoms. If symptoms of ulcus rotundum occur in a syphilitic patient, then we are justified in surmising that the stomach lesion itself is of a syphilitic nature. (6) We must never forget to seek for a previous syphilitic history in patients with ulcus rotundum or exulceratio simplex. (7) This being the case, the treatment suggests itself—mercurial preparations and the iodide of potassium. (8) The recognition of the syphilitic nature of certain ulcers of the stomach is all the more important, on account of the fact that we are enabled to cure a certain number of patients who otherwise might fall into the hands of the surgeon.—*Le Bulletin Médical*, April.

Immunity against the Bubonic Plague.—Dr. S. K. Beinarowitsch (*Arch. des Sciences Biolog.*, March) after numerous experiments with animals concludes as follows: (1) The antipest serum, if injected directly under the skin, produces but a passive and transient immunity against the plague; the duration of this immunity is, to a certain extent, directly proportionate to the amount of serum injected. (2) A serum dose equivalent to one-one-hundredth the weight of the animal produces immunity against a fatal inoculation of the plague bacillus for a period of two weeks; with a smaller dose the period of immunity is decidedly shorter. (3) An animal which on account of a serum injection has acquired a passive immunity against the plague bacillus will with an injection of virulent plague bacilli acquire a certain degree of active immunity. (4) The ability to acquire an active immunity and the duration of the same stand in inverse proportion to the amount of the serum injected before inoculation with the bacillus of the bubonic plague. (5) The attainment of an active immunity

on the part of the animal depends upon the appearance of a reaction after the inoculation of the pest bacillus.

Rubeola or German Measles.—Dr. Pulawski (*Gazeta lekarska*, 19–20, 1898) as a result of the study of two epidemics makes the following statements: The disease sets in abruptly without any previous prodromal symptoms. The period of incubation is about two weeks. During the entire course of the disease the temperature is normal or only slightly elevated. The eruption is similar to that of measles, with this exception, that it is somewhat smaller and lighter than the latter. The eruption appears first on the face and neck, then on the chest and back, and finally on the extremities. The eruption is accompanied by itching, and desquamation is entirely lacking or appears only on the face. In concluding, the author states that, contrary to the teachings of Henoch, he considers rubeola a distinct and separate disease, and summarizes as follows: "(1) The clinical picture of rubeola resembles that of measles, it is true; but still it has its own characteristics which are repeatedly seen. (2) Rubeola patients can cause the spread of this disease only, and not that of measles or scarlet fever. (3) Rubeola does not protect against the other acute exanthematic diseases, and *vice versa*. (4) Rubeola occurs not only in sporadic cases but also in epidemics."

The Amœbæ from a Parasitic and Culture Standpoint.—Dr. Robert Behla in a recent book on this subject makes the following statements: (1) In the oral cavity of human beings amœbæ, according to their pathological significance, whether they be a separate species or only reproductions of other organisms, have thus far not been demonstrated. (2) Up to the present time they have not been found in the nasal secretion of human beings. Experiments with animals are lacking. (3) Amœbæ are not mentioned among the parasites of the human ear. (4) The mucus of the human eye does not show amœbæ. (5) They are also absent in the expectoration of the respiratory apparatus. (6) The Italian investigators, Celli and Fiocca, have seen amœbæ in the gastric contents of human beings. On numerous occasions Behla found amœbæ in the stomach of recently slaughtered cows, and, in addition, infusoria which unquestionably came from the drinking of contaminated water. (7) More frequently the intestines of human beings contain amœbæ. The amœba coli Loesch, which has been substantiated by various investigators, deserves especial mention on account of the extraordinary interest to which it has given rise in reference to dysentery. (8) Amœbæ in the uro-genital apparatus of human beings. Baelz has demonstrated in the bloody urine of a tuberculous patient, twenty-three years of age, an amœba which resembles the amœba coli. Furthermore, Jürgens has demonstrated amœbæ in small mucous cysts of the male bladder, and Posner has also made mention of amœbæ in the urine and female uro-genital apparatus. (9) The amœbæ are also present in the vagina. (10) Fleyner has reported amœbæ in an abscess at the floor of the mouth. The case occurred in a man, sixty-two years of age, who at some previous date suffered with dysentery. (11) Nencki, Tieber, and Wyzni Kiewicz report the existence of amœbæ in the various organs —liver, spleen, kidney, etc.—of sick cattle. (12) Behla found amœbæ in the secretion of an extensive suppurating ulcer of the lower thigh.—*Memorabilien*, August.

Bromoform Poisoning.—Dr. Müller, in the *Münchener med. Wochenschrift*, September 20th, reports a case of a child, two years old, suffering from whooping-cough, who swallowed about four grains of bromoform during its mother's absence from the sick-room. A few minutes later the child appeared intoxicated, and following the administration of lukewarm water and tickling of the pharynx it vomited. Soon it fell into a deep slumber, broken by repeated convulsions, beginning with respiratory spasm and cyanosis of the face. A copious supply of milk was at once administered. Two hours afterward the child was in a state of collapse with scarcely perceptible breathing, cyanotic face, fluttering pulse, cold hands, contracted pupils with absence of reaction to light, and muscles paralyzed. Death occurred in about five hours following the ingestion of the dose, with respiratory and cardiac paralysis. The characteristic clinical picture is that of asphyxia, undoubtedly caused by the action of the blood poisoned with bromoform upon the respiratory centre. The post-mortem examination revealed the following conditions: The pupils equal and of medium size. The stomach contained some food particles which had a faint odor of bromoform. There were only a few hemorrhagic spots and slight congestion of the mucous membrane without loss of the lining epithelium. The duodenum and upper half of the jejunum had a deep odor of bromoform; the mucous membrane was injected; the solitary glands and Peyer's patches were intensely swollen; the upper part of the jejunum was already reddened. Farther along, the reddening became less marked, the outer coat was grayish, and the mucous membrane was pale. The liver was normal in size. The upper surface was bluish-red. There were a few hemorrhagic spots in the left lobe. Cross-section revealed a glistening bluish-red surface, from which there exuded a profuse, thin dark blood. The kidneys were large, brownish-red, glistening, and sanguineous. The thinness of the blood was a striking feature. Only in the right heart were there a few small clots. The left ventricle contained a small amount of thin dark blood. The epithelium of the epiglottis was reddened. There was a grayish-red mucus in the trachea. The injection of the mucous membrane was more marked lower down and most marked at the bifurcation of the trachea. The tongue was pale. There were a few hemorrhagic spots, about the size of a grain of mustard seed, on the left lower lobe of the lung under the pleura. The surface was dark bluish-red, the cross-section was cherry red. Upon pressure there exuded from the bronchi a copious whitish mucus. The mucous membrane of the bronchi was markedly injected. The veins of the dura contained very thin dark fluid blood. The vessels of the pia were sharply outlined, having been filled with blood of a similar character. They formed swellings as if they were artificially injected with wax. The brain substance also showed numerous hemorrhages and was wet and succulent. Chemical examination of the different portions of the body revealed the presence of bromoform in various quantities. From the stomach, intestines, and their contents there were obtained 1.165 gm. of bromoform. This also was present in the blood and various organs, although not in measurable quantities. When it is considered that of all these organs only small portions were taken and examined, it must be concluded that bromoform had doubtlessly accumulated in the body in large quantities. The most important points in the case were the thinness of the blood, the dark red color, and the unusually marked injection of the vessels of the brain and its meninges. Of less importance was the irritation of the mucous membrane of the small intestine. This being the only reported case of death from bromoform poisoning in which autopsy was made, we have given the post-mortem changes at some length.

Alcoholism in Children.—Dr. Combe, of Lausanne (*Annal. de Méd. et Chirurg. Infant.*), summarizes as follows: (1) A wetnurse who is accustomed to drinking

wine may continue the same to moderation during the period of nursing. (2) A wetnurse who has not been in the habit of indulging in alcoholics must not receive any during the entire course of the nursing period. (3) An alcoholic mother must not nurse her child. (4) Nervous children and those who are suffering from an organic nervous disease must refrain absolutely from alcoholic drinks. (5) Very young children must never receive any alcoholic drinks, except in cases of acute diseases in which alcohol is indicated. (6) Total abstinence should be insisted upon until at least the sixth year. From the sixth to the twelfth years children may occasionally drink a small quantity of very diluted wine. (7) Total abstinence is indicated in the case of older children who are wayward, lazy, and weak in memory. (8) Hereditary alcoholism favors idiocy, epilepsy, and insanity.

On the Treatment of Catarrhal Symptoms with Guaiacol Carbonate.—The good results obtained by Dr. Hoch with creosote in the treatment of catarrhal symptoms in children following measles and whooping-cough, suggested to Dr. Nied, of Vienna (*Allg. Wiener med. Zeitung*, No. 22, 1897), the use of guaiacol carbonate in catarrhal affections. He has treated twelve female patients, varying in age from twenty-three to seventy-five years, some suffering from acute bronchitis, others from influenza. Doses proportionate to the severity of the symptoms were ordered; in mild cases he gave 0.5 gm. of guaiacol carbonate on the first day, morning and evening, and on the second and succeeding days 1 gm. twice daily. In other cases he prescribed on the first and second days 1 gm. morning and night, and on the third and subsequent days 1.5 gm. In more severe cases he gave twice daily 1 gm. on the first day, 1.5 gm. on the second, and 2 gm. on the third and following days. A beneficial result was usually apparent on the second day, at the latest on the fourth day, and manifested itself in a return of the lost appetite and a marked loose expectoration. The mucus usually disappeared in from fourteen to twenty days.

Blood and Histological Examination in a Case of Malaria Pernicioso-Comatosa.—Dr. Nicolaus Jancso, of Klausenburg, reports (*Deutsches Archiv für klinische Medicin*, Bd. 60, Heft 1) a case of acute pernicious malarial fever. In the histological examination he found in all the organs black pigment particles, most abundant in the spleen, next in the bone marrow and in the liver. The spleen presented the appearance of acute inflammatory hypertrophy. The pigment particles were most numerous in the cells; the connective tissue contained but little pigment. In the bone marrow the fat cells appeared as though dispersed in the lymph canals. A large portion of the cellular tissue contained pigment, grouped especially about the nuclei of the cells. The liver was of a dark, brownish-black color, and held a large amount of pigment located chiefly in the capillary blood cells, in the endothelium lining the blood-vessels, and in the so-called cells of Kupffer. In all the other organs the quantity of pigment was proportionately small. In blood taken from the finger tip Jancso found only small parasites of the amœboid-movement variety and half-moon forms, without division; on the other hand in the spleen and bone marrow there were large numbers of parasites in the stage of division. The brain was anæmic, and but few parasites could be demonstrated in the blood contained in the capillaries of the gray substance. From this the author concludes that the coma of pernicious malaria is not always due to the plugging up of the cerebral capillaries with parasites or pigment, but is frequently a result of the toxic action of the chemical products liberated by the malaria plasmodium.

Enanthemata.—At the annual meeting of the American Pediatric Society, held in Cincinnati in the beginning of June, Dr. F. Forchheimer, of Cincinnati, read a paper on what he considered to be a characteristic enanthem of German measles. According to the extract published in *Pediatrics* the enanthem is a macular, distinctly rose-red eruption upon the velum of the palate and the uvula, extending to, but not over, the hard palate. The spots are arranged irregularly, not crescentically, are of the size of large pinheads, and are very little elevated above the level of the mucous membrane. He studied the eruption in twenty-two cases. In no case had he seen the exanthem when there was not present a suggestion of the enanthem. The enanthem is very short lived, fading away within the first twenty-four hours. It is the same eruption which is found upon the skin, characterized by the size of efflorescence, its arrangement, the absence of great infiltration, and, above all, by its color, a pure pinky-rose-red, almost exactly the same as the "roseola" of typhoid fever. During the process of involution there are sometimes left pigmented deposits, usually of a yellowish or yellowish-brown color, in the form either of spots or of streaks. The difference between this enanthem and those of scarlet fever and measles is as follows: in scarlet fever the enanthem appears from twelve to twenty-four hours before the eruption. It appears on the pillars of the fauces in the form of characteristic puncta, then rapidly spreads over the mouth in the form of a scarlet-red coalescing eruption, which ends in desquamation, producing the strawberry tongue. In measles the enanthem begins upon the soft palate, from thirty-six to forty-eight hours before the exanthem, in the form of purplish papules arranged crescentically. Some of the subsequent speakers said that their experience confirmed that of Dr. Forchheimer.—*Lancet Editorial.*

Clinical Studies with Spleen and Thyroid Extract.—Drs. Charles A. Bois and Neil T. Kerr (*British Medical Journal*, September 10th) sum up the results of their investigations of this matter by stating their convictions as follows: "(1) That the most general result of this treatment is physical improvement. (2) That its action on the mental state is undoubtedly evident in a fair proportion of cases, especially of adolescents, sometimes direct, at other times owing to improved physical conditions. (3) That it materially assists in rendering thyroid treatment efficacious, the patient, after a course of spleen treatment, being more susceptible to the action of thyroid. (4) That when it fails there may be a defect in the preparation of the extract. We have found that capsules of the liquid extract are best. The desiccated spleen, which is usually employed for tablets, must necessarily lose some of its active properties. (5) It is best given at least half an hour before meals. In conclusion, it is not necessary to say more than this: That if a collective investigation of the treatment were taken up and persevered with, spleen extract would prove itself well worthy of a place in the treatment of mental disease."

A Simple Method of Estimating the Quantity of Urea.—Dr. Buckner (*Münchener Zeitschr. für Biol.*, No. 2) suggests an easy method by which the proteid metabolism can be calculated with some degree of probability by comparatively simple operations. If it be granted that, as Buckner holds from many check experiments, when the salts in the urine are about normal in amount, especially the chlorides, the urea forms one-half of the total solids, unless some abnormal constituent is present in excess, the specific gravity will give the approximate percentage of solids. A qualitative test for chlorides with nitrate of silver will show whether they are increased or not, or if present

in a small amount, and from this the total amount of salts may be reckoned in proportion. As an example, a normal urine, 1,000 c.c. in the twenty-four hours, had a specific gravity of 1.0285; total solids (28.5 × 2.33) =6.64 per cent.; chlorides, precipitate normal; no abnormal constituents. The urea, therefore, was estimated at 3.32 gm. per cent. Liebig's method showed 3.41 gm. per cent.; Kjeidahl's process, 1.81 gm. of nitrogen, or equal to 3.89 gm. of urea per cent., which will give a figure very similar to the others if the nitrogen of the uric acid and other nitrogenous constituents be subtracted. In a case of diabetes passing 2,250 c.c. urine per diem, with a specific gravity of 1.038 and containing 4.8 per cent. of sugar, the total solids will be 199.1 gm. in the whole day's urine (38 × 2.33) × 2.25, the sugar, 108 gm. On subtracting the figure for the sugar from the total, 91.1 gm. remains, the half of which, 45.55 gm., corresponds to the amount of urea excreted. As 1 gm. of urea represents 2.9 gm. of albumin, or 13.7 gm. of flesh, the excess lost by the diabetic over the normal man amounts here to 170 gm. of flesh. The method appears to afford a means whereby a sufficiently accurate determination of proteid metabolism may be worked out from very simple every-day clinical manœuvres. Of course, allowance has to be made for the nature of the diet.

The Policy of Depopulating Cities Infected with Yellow Fever; if Undertaken, how Best to Accomplish it.—Dr. Felix Formento (*New Orleans Medical and Surgical Journal*, October) draws the following conclusions: (1) General depopulating of towns and cities infected with yellow fever, however desirable, is not practicable. (2) Voluntary exodus of individuals and families is to be encouraged at the first breaking out of the disease. (3) During an epidemic, depopulating should be carried out under special sanitary precautions. (4) Depopulating of houses in which first cases occur, by removal of the sick to properly constructed hospitals, and of the well to special camps of observation, and thorough disinfection of houses, he considers the most efficient measures for the stamping out of the disease at its birth. (5) Isolation of the sick and destruction or disinfection of discharges from bowels, and of all contaminated material, with disinfection of the premises, are the best means of limiting the disease. (6) All measures of repression of an arbitrary character are to be applied to a limited number of cases only. If they fail they should be discontinued, as they are an additional burden to the sufferings and hardships of the people.

Modern Treatment of Tuberculosis.—Dr. Charles Denison (*Journal of the American Medical Association*, September 24th), in summing up this paper, advances the following conclusions: (1) As the whole is greater than a part, the combined method is superior to any given branch of the treatment. The individualizing process, and the adaptation of all methods to the needs of a given case, is the preferable plan. (2) The seasonable change of residence to a well-selected high-altitude climate, with its dryness, sunshine, possibilities of outdoor life, and its stimulating qualities, gives the best possible resistance to the advance of consumption. (3) Exercise is most essential and necessary to promote both cell activity and the needed mechanical distention of the air-cells. (4) Local treatment and proper inhaling-methods bear important relation to exercise, cell stimulation, and the climatic effect of the high-altitude method. (5) A great and most valuable addition to our curative means comes through the skilful determination of the proportion of infection, in order to the establishment of the balance between bodily resistance and the disease. This balance is the key to the as yet preferable—the direct—method of specific treatment. (6) It is a mistake to overwhelm the body with frequent injections of undetermined animal serum, thereby producing either a severe reaction or a possible cumulative toxæmia.

Snakebites and their Treatment.—Dr. B. Merrill Ricketts (Cincinnati *Lancet-Clinic*, September 3d) draws the following conclusions: (1) The copper-head, the coral, and the rattlesnake are the only serpents in the United States which possess fangs, at the base of which is a sack containing a poisonous fluid. (2) The result of inoculation depends upon the dose, and the size of the human being or animal. (3) Most of the authentic cases of death by bite of these serpents have been among children. (4) No authentic record of death, as the result of the bite of any of these snakes, has been found in the adult man by the writer. (5) If death does not result within a few hours, it is not the venom but other agencies that produce it. (6) The bite of the cobra is not so deadly as is generally supposed. (7) Overstimulation from alcohol and other agencies is, he believes, oftener the cause of death than virus inoculation. (8) The effect upon the body is more severe if the virus is injected into blood-vessels. (9) There seems to be no subject which is surrounded by so much uncertainty and exaggeration.

Trichinosis.—Dr. T. R. Brown (*Journal of Experimental Medicine*, vol. iii., 1898) gives an account of investigations made by him on trichnosis, with special reference to the increase of the eosinophilic cells in blood and muscle, the origin of these cells, and their diagnostic importance. From these observations he concludes as follows: (1) That there is a marked decrease in the percentage of eosinophilic cells in the blood in trichinosis. (2) That this decrease may be used as a diagnostic sign in this disease. (3) That this disease in its sporadic form is more common than has hitherto been supposed, as shown by the discovery of the three cases which were described, within a comparatively short period, at the Johns Hopkins Hospital. (4) That a systematic examination of the blood should be undertaken in cases with indefinite intestinal, muscular, or articular symptoms, in the hope that in some at least of the hitherto doubtful cases a diagnosis may be reached.

Bacteriology of the Blood in Disease.—Drs. James and Tuttle ("Report of the Presbyterian Hospital"), after much investigating, adduce the following conclusions: (1) The attempt to cultivate bacteria from the blood of living persons is useless unless carried out in a painstaking way, and with thorough antiseptic precautions, and with blood drawn directly from a vein. (2) The number of diseases in which this procedure is useful is small. (3) In malignant endocarditis it is of great value; in other septic diseases, of moderate value; and in typhoid fever it may, on rare occasions, prove of some use. In other morbid conditions its usefulness has not yet been proved.

The Agglutinating or Sedimenting Properties of Serums and their Relation to Immunity.—Dr. Herbert E. Durham (*British Medical Journal*, September 3d) concludes his discussion on this topic as follows: "The actions of normal and heterologous serums (clumping and protective) may be left on one side as hardly germane to our subject. We have evidence that when agglutinins are present, inhibitory and protective properties are also to be found. Hitherto an agglutinin free from these other substances has not been obtained. Agglutinins act within the living body by causing clumping, as well as in the test tube. Destruction of agglutinins occurs in an actively immunized animal after infection with the homologous bacterium. There is no definite relationship between the limit dilution

at which clumping can be recognized and the limit dilution at which complete effect is produced upon a given amount of the bacteria. From the latter some clew as to the preventive efficiency of a serum may be obtained. Lastly, although in future experience the association of agglutinins with protective substances may be shown to be fortuitous, yet it will always have attached interest from the fact that the now well-established method of serum diagnosis in typhoid fever and other diseases owes its birth to this association. The knowledge that protective qualities are acquired by the blood of typhoid-fever patients led to the probability that the clumping property would also be developed. This resulted in Gruber's world-famous suggestion that this agglutinating property should be worked out in typhoid and cholera patients."

The Nature and Significance of Leucocytosis.—Dr. Robert Muir, in a discussion on this subject before the last annual meeting of the British Medical Association (*British Medical Journal*, September 3d), interpreting the phenomena, says: "(1) The local leucocytosis is a most important means of defence; (2) the proliferative changes in the bone marrow are the means by which the leucocytes concerned may be supplied in large numbers at any given place of need; (3) the leucocytosis in the blood is an indication at least that this supply is being maintained. We may also mention that the vascular arrangements in the marrow are such as, on the one hand, to permit a ready action upon its cells of chemotaxic substances circulating in the blood, and, on the other hand, to allow a free and rapid passage of the cells into the blood. It is to be noted that chemical substances must be the means by which a general leucocytosis is brought about, and therefore it is not surprising that it can be produced when there is no local inflammatory change. Whether in such a case the leucocytosis really acts as a means of defence by combining with toxins in the blood (for example, in the leucocytosis following injection of diphtheria toxin) must still be considered an open question. Another question worthy of study is whether, and if so to what extent, degenerating or broken-down tissues act as chemotaxic agents in the production of a general leucocytosis."

Diphtheria Treated with Antitoxin Serum in University Hospital during 1896 and 1897.—Drs. Sidney Martin and G. Bertram Hunt (*British Medical Journal*, September 3d) draw the following conclusions: "(1) The great reduction seen both in our total and tracheotomy mortality can be due only to the treatment with antitoxic serum, for the examination of the cases reveals no other factor capable of producing this result. (2) The full benefit of antitoxin was not obtained until fairly large doses (on an average between 7,000 and 8,000 normal units) were employed; the mortality then fell from 28 per cent. in the first antitoxin year to 17.7 and 17 per cent. in the next two years. Each case of diphtheria should have an initial dose of not less than 6,000 normal units. (3) Since antitoxin has but little effect on the mortality when given after the fourth day, it should be administered as soon as the patient is seen, without waiting for the bacteriological diagnosis, and the full dose should be given immediately in one injection, not in divided doses on successive days. (4) Not only does antitoxin reduce the mortality, but it also distinctly lessens the severity of the disease in patients who recover. This is best shown by the effect on the duration of the fever, which in our series lasted only four days in a very much larger proportion of antitoxin than of pre-antitoxin cases. (5) The effect of antitoxin is chiefly seen in its specific action on the diphtheritic membrane, as shown by the cessation of its spread and more rapid clearance, and also by the greatly lessened mortality of such cases, in which the chief danger is from extension of membrane, the mortality of tracheotomy cases especially being reduced from 65.5 to 26.4 per cent., a greater reduction than was seen in the other cases."

Acetonuria.—Von Jaksch distinguishes the following forms: (1) The febrile; (2) diabetic; (3) carcinoma which has not yet produced inanition; (4) inanition acetonuria; (5) psychoses; (6) auto-intoxication; (7) digestive disturbances, especially the gastro-enteritis of children; (8) chloroform narcosis.

"Railway Spine."—These are the cases that bring two types of expert witnesses, one side swearing that the man is seriously injured, the other side testifying that the symptoms are fraudulent and only assumed for the purpose of mulcting the railway company. The examination of such patients must be conducted with great care, and while it is necessary to be guarded against so-called "litigation symptoms," fairness and justice demand that all real symptoms should carry due weight. The following suggestions may be of value: (1) Do not rely upon a single symptom, but weigh all the symptoms. (2) Study the manner of the patient, and test his truthfulness or studied attempts to exaggerate his complaint. (3) Exclude all pains the existence of which cannot be confirmed by any physical evidence, and which rests mainly upon the unsupported statements of the patient (Dercum). (4) Admit all pains the signs of which are evoked without any previous warning or suggestion (Dercum). (5) Pay special attention to every symptom which is beyond the control of the patient, as temperature, deformity, persistent rigidity of muscles, vomiting, sweating, bloody urine, etc. For estimating the value of pain as a symptom, Dercum recommends a method of examination which is often of great value. Superficial tender spots are tested by injecting at one of the painful areas either cocaine, or, as suggested by Keen, simple cold water. If the pain is genuine, the injection relieves that particular spot, while the others remain tender.—Dr. J. W. MacDonald, "A Clinical Text-Book of Surgical Diagnosis and Treatment," page 509.

Treatment of Migraine.—Dr. Henry Hanford (*The Edinburgh Medical Journal*, September), in an article on migraine and the vasomotor theory, speaks of the treatment as follows: "It is well known that when with headache the extremities are cold, some relief is obtained by warming the hands and feet at the fire. In many cases the recumbent position is required in addition. In a large class of patients the attack may be cut short by many hours by going to bed, applying hot bottles to the extremities, and taking hot drink (as soon as the stomach will retain it)—some hot tea or milk. A glow soon pervades the surface, and the spasm is relaxed. Relief so obtained is not very liable to relapse. After a few hours the ordinary duties of life may be resumed, and, although sleep is the best completion of the cure, its place may sometimes be taken by a good dinner. I believe this treatment, when it can be carried out, to be far superior to any drug treatment, although it may be aided by a good dose (thirty to sixty grains) of bromide of potassium. It is a curious fact, and may be taken as the exception which proves the rule, that a few patients find that the recumbent position aggravates their pains, and often prefer to spend the night in an armchair rather than go to bed. And also, in the later stages, moving about sometimes seems to hasten the end of the attack more than remaining quiescent."

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ETHER NARCOSIS.

THE comparison of ether with chloroform as an anæsthetic continues to be a subject of interest, and, in Europe especially, contributions to the journals upon this subject are frequent and often the results of long series of observations and experiments. In this country the popularity and reputation of ether seem to be fixed, and chloroform is almost everywhere regarded with some suspicion, in spite of some of its very attractive qualities. The very generally recognized disadvantage which ether has is undoubtedly the increased secretion of mucus and saliva which occurs during its administration. In the *Archiv für klinische Chirurgie*, B. 57, 1898, Hölscher gives some conclusions upon the action of ether, which are based upon a series of experiments upon animals. His paper is long, and his conclusions are that the ether vapor has very little irritant effect upon the broncho-tracheal mucous membrane; that the tracheal râles during ether narcosis are caused by the aspiration of the secretions, salivary and mucous, from the mouth; that the affections of the air passages following ether narcosis are caused by this aspiration; and that the increase in the flow of saliva depends largely upon local irritation by the vapor, but that central influences also play a part in this process.

It is a good thing to bear in mind that the secretions from the mouth are responsible for the tracheal râles, for it puts the prevention of the condition within the range of easy possibility, and also imposes a distinct responsibility upon the anæsthetizer. Of course patients are very variable in their behavior during etherization in regard to the amount of secretion and the character of the respiration, and in some it would be practically impossible to prevent the flow of some of the saliva and mucus into the trachea. It is probable, however, that it is only when the secretions reach the bronchi and their large branches that there is any great danger of pulmonary involvement. When the secretions do reach the large bronchi or the bronchioles and cause a bronchitis or a broncho-pneumonia, the consequences are apt to be serious, especially in elderly or alcoholic patients.

Extreme care on the part of the anæsthetizer, both as to the amount of ether given and in keeping the mouth clean and the head and jaw in the correct position, is the only thing which can give us security from unpleasant experiences in a certain number of instances of the administration of this anæsthetic. The dangers in the use of chloroform depend upon inherent poisonous qualities in the drug, and can be guarded against only by watching with extreme care the amount given and its effect upon the circulatory apparatus. Even with the greatest care cases will occur in which, on account of some latent cardiac trouble or of personal idiosyncrasy, alarming or fatal symptoms will develop, with very little time for satisfactory treatment.

In the case of ether, the dangers depend largely upon causes which are mechanical and can be prevented by mechanical means, leaving out, of course, any such event as the overwhelming of the patient with the drug, which should never occur and can occur only from carelessness. If the whole bronchial mucous membrane were pouring out an excess of secretion during etherization, it would be a very difficult matter to give the drug successfully; but if the secretion comes almost entirely from the mouth, it must be an easy matter to control.

In operations with tracheotomy, the presence of the tube in the trachea is irritating and causes an extra secretion of mucus in the trachea; and if this secretion becomes muco-purulent and the inflammation extends downward, the consequences are self-evident. In ordinary etherization we have not this source of irritation, and whatever sepsis is introduced must come from the mouth.

A PLEA FOR REVISION OF SCIENTIFIC NOMENCLATURE.

MUCH dissatisfaction has long been felt at the inadequacy of the language of scientists correctly to express their meaning. Instead of using clear and comprehensive terms in the vernacular, Greek and Latin are resorted to, and in consequence long-winded hybrid words are concocted by the coiners, which tend only to confuse and perplex their audience. This fact has been greatly in evidence at the recent meeting of the British Association, so much so, indeed, that protests have been freely circulated in the press and an alteration in the present methods has been strongly advocated. The London *Times*, in an article commenting upon the matter, has this to say: "For the general encouragement of science, however, or, more properly speaking, for the encouragement of scientific methods of thought, the stimulus of public opinion is urgently required, and this stimulus the meetings of the association may do much to create. They would do more, we may venture to suggest, if the leaders of science would themselves become sufficiently literary to avoid offending the ears of scholars by a laborious, unintelligible, and unnecessary nomenclature. There was something to be said, no doubt, for the general use of Latin as the language of the learned common to men of all nations. There is nothing to be said for the modern jargon of illiterate Greek compounds used to express ideas which might be better and more correctly expressed in any modern tongue. No foreigner

would be assisted to comprehend a paper read before the association, mainly in English, because it contained such words as 'enantomorph,' "hyphomycetons,' 'peltation,' 'cleistogamy,' or a score of others which could be mentioned, the meaning in all these cases, as gathered from the presumed derivation, being more or less vague and general, while the application is in each case quite specific, precise, and usually such as the derivation will neither justify or permit. Men of science who are imperfectly acquainted with English, but who have retained from their school days some small smattering of Greek, make up such words as those above referred to, and then proceed to define the meaning which they attach to them and which other folks are expected to remember. The whole process is a mistake—and a serious one—which the leaders of scientific thought and inquiry would do well to set themselves to correct. The resulting vocabulary tends to bring science into disrepute with scholars, who are inclined to 'stare and gasp' at the verbal monstrosities submitted to their notice, and who may be excused for thinking that knowledge which can be expressed only in unintelligible verbiage is hardly worthy of their attention." We trust that the leaders of science will take to heart the wise if somewhat ponderous words of the *Times*, will cry "*Peccavi!*" and resolve to amend the errors of their ways.

CHRISTIAN SCIENTISTS AND FAITH HEALERS IN GREAT BRITAIN.

Judging from accounts received, it would appear that the Christian scientists and others of the same race are quite as numerous and as successful in gaining converts by their pernicious teachings in Great Britain as here. The fact is also made clear that in both countries the law is powerless to check the imposture; at least such is the case in England, where the Christian scientists, faith healers, and the rest of the brotherhood are legally entitled to undertake the treatment of patients, either personally or by correspondence, and to fleece their victims to the utmost extent; but with one reservation—a healer is liable to a charge of manslaughter, should a patient die while under treatment.

The exact legal position occupied by the quack fraternity was, according to London *Truth*, thus defined by an eminent authority in answer to a question as to why some of the professional organizations did not look out for a chance to prosecute some of the mind-healing sisterhood. The legal luminary begins his interpretation of the English law on the matter by affirming that donkeys and dogs are better protected from the machinations of quacks and frauds than is any human being, and then proceeds as follows: "Any outsider who calls his place a veterinary forge commits an offence against the veterinary act, which provides that no person who is not a member of the Royal College of Veterinary Surgeons can take or use a title or description which will lead any member of the public to believe that by going to his, the advertiser's, establishment such member of the public would procure skilled advice or assistance. And yet a quack may call himself doctor, or, if fortified with a worthless diploma, style himself M.D. with impunity. The reason is that, while under the veterinary or the dentists act the mere fact of using a title or description of the character referred to, whether such title relates to the individual or to his premises, is an offence in itself, under the medical acts a man cannot be held guilty of the offence of calling himself doctor or M.D. or surgeon, unless by so doing he wilfully and falsely pretends that he is a registered man. The courts have again and again held that whether or not a man so falsely pretends is a question of fact for the magistrate. The courts have also held that when a man has a foreign diploma giving him the title to call himself M.D., the educational value of which may be practically worthless, he cannot be held falsely to pretend that he is an M.D. Had the words 'wilfully and falsely' been omitted from the medical act, and the phraseology been the same as in the veterinary and dentists acts, conviction of an offender would be easy. . . . Until the medical acts forbid practice in every shape and form by unregistered persons, it would be hopeless to expect to secure a conviction under these acts. No man in his senses would suggest that these pseudo-Christian quacks are wilfully and falsely pretending to be registered practitioners. Even the fools who seek their aid do not believe this. At the same time there is a grave difficulty in the way of prosecuting for false pretences. The defence would call a number of dupes who would swear to a cure having been performed on themselves." Therefore, in Great Britain and in many parts of America the only way of checking the evil is by enforcing the law against the healer who may be implicated in a case which terminates fatally. This view of the matter should be earnestly impressed upon the relatives of the dupes who have fallen victims to their fatuous folly, as well as on any physician who may chance to be concerned in the affair. In every instance of a like nature the doctor should stoutly refuse a death certificate, regardless of the social standing of the deceased or whatever the desire of the relatives to avoid a public scandal.

It would also undoubtedly act as a deterrent to the increasing custom of seeking relief at the hands of these impostors, if the lay journals were, like London *Truth*, freely to ventilate the subject and endeavor so to educate the weak-minded members of the community that they might see and turn from the errors of their ways before it was too late.

American Academy of Railway Surgeons.—The following officers were elected for the ensuing year: *President*, Dr. W. W. Grant, Denver; *First Vice-President*, Dr. J. F. Pritchard, Manitowoc, Wis.; *Second Vice-President*, Dr. J. P. Lord, Omaha, Neb.; *Secretary*, Dr. T. B. Lacey, Council Bluffs, Iowa; *Treasurer*, Dr. C. B. Kibler, Corry, Pa.; *Editor*, Dr. Fred J. Hodges, Ashland, Wis. The next meeting will be held at Omaha, Neb., in October, 1899. The committee of arrangements is J. P. Lord chairman; T. B. Lacey, and Fred J. Hodges.

News of the Week.

Tetanus was the cause of considerable medical interest in the neighboring districts of Jersey during the past week. In one instance it proved fatal, in the case of a six-year-old Hackensack girl, within six hours of her injury; and in the case of a man in Passaic, in whom intracerebral injections of antitoxin were tried for the first time in this country, the beneficial effects were said to be almost instantaneous and very pronounced.

Wintergreen Poisoning.—A rare instance of poisoning from oil of gaultheria occurred during the past week in Bellevue Hospital, the first in the history of the institution, it is said. The drug was taken by the patient as a cure for drunkenness. The quantity consumed was not definitely made out, it being, according to the man's statement before he became unconscious, ten cents' worth. Some years ago there occurred in the wintergreen-distilling region of Pennsylvania a similar death, in which an insurance company raised the question of intent on the part of the insured. It was shown, however, that in the process of production a watery fluid was obtained which the workmen drank with impunity, but the oil was considered dangerous and the supposition was that a mistake had been made in the two liquids, making the suicide non-intentional.

Resolutions Adopted by the Public Health Association.—The following is the substance of several resolutions adopted at the recent meeting of the American Public Health Association.

Offered by Dr. George H. Rohé: "*Resolved*, That the association reaffirms its indorsement of the creation of a national department of public health."

Presented by Dr. A. L. Gihon: "*Resolved*, That a committee of seven be appointed by the chair to wait upon the President of the United States, with a view of obtaining a bacteriological commission to go to Havana to study the cause and prevention of yellow fever."

Offered by Dr. A. Walter Suiter: A resolution urging the complete discontinuance of the use of the long-tube nursing-bottle.

Offered by Dr. U. O. B. Wingate: A resolution recommending the appointment of a committee for the purpose of presenting a definition of the term "epidemic," for the guidance of health authorities in executing such laws as call for the declaration of the presence of an epidemic.

Offered by Dr. Henry B. Horlbeck: A resolution urging upon the United States government the necessity of establishing a leper colony, similar to such institutions as now exist in Canada and Mexico, where lepers can be segregated.

Small-Pox in Ohio.—There has been during the past summer an epidemic in a town near Toledo, Ohio, which the local physicians called chicken-pox. There have been more than two hundred cases of the disease with no deaths, but the persistence of the epidemic and the fact that sporadic cases of small-pox were constantly appearing at various places in the neighborhood finally aroused suspicion, and the attention of the State board of health was called to the disease. An investigation showed that the epidemic affection was really variola, and measures have now been taken to control it. The churches and schools have been closed, all persons ill with the disease are isolated, and general vaccination has been ordered, under pain of arrest.

Prof. A. Jacobi, M.D., LL.D.—At the recent commencement of Ann Arbor University, Ann Arbor, Mich., the degree of LL.D. was conferred on our distinguished townsman, Prof. Abram Jacobi. An honor most worthily bestowed.

Lives Lost in a Hurricane.—Reports of the damage caused on the Georgia coast by the hurricane which passed over that region in the first week of October show that one hundred and twenty lives were lost and property was destroyed to the value of over $1,000,000.

A Death from Sunstroke occurred in the first week of this month in Akron, Ohio.

The Yellow-Fever Situation in the South has materially improved during the past week, owing to the advent of frosty weather, and it is now confidently anticipated that the governor of Mississippi, the treasurer, and other State officials, and the supreme court judges will soon emerge from their hiding-places—such of them, at least, as have not died of fright—and resume their interrupted duties. Two new cases were discovered the first of the week at Meridian, but the cool weather has so quieted the fears of the people that the usual panic did not occur. Quarantine has been abolished in many of the towns in Mississippi, and the poor negro reconcentrados are allowed their freedom to seek food and shelter. There were twenty new cases of yellow fever in Louisiana and eight deaths on October 15th and 16th, and twenty-two cases and two deaths in Mississippi, a total to date from the two States of two thousand and five cases and one hundred and eleven deaths.

Obituary Note.—Dr. Nathan Smith Lincoln, of Washington, D. C., died in that city on October 14th. He was born at Gardner, Mass., on April 3, 1828, and was graduated in arts from Dartmouth College in the class of 1850. He studied medicine under his uncle and namesake, Dr. Nathan R. Smith, of Baltimore, and received his medical degree from the medical department of the University of Maryland in 1852. He began practice in Baltimore, but removed in 1854 to Washington, where he resided to the time of his death. From 1857 to 1874 he was connected with the Columbian University, occupying successively the chairs of chemistry, theory and practice of medicine, anatomy and physiology, and chemistry. During the civil war he was surgeon-in-chief of the hospitals established in Washington under the quartermaster's department. He was for a number of years attending surgeon to Providence Hospital and later became consulting surgeon to many of the hospitals in the capital. He was a

member of the American Medical Association, and also of the American Association for the Promotion of Science.

Leech against County Society—Action without Merit.—An action to recover $10,000 damages brought against the County Medical Society in 1895, and also against Mr. W. A. Purrington as its counsel and Clarence W. Meade, police justice, was finally disposed of on October 10th. The action grew out of the arrest on the society's complaint in 1893, of one Leech, upon the advice of counsel that the medical law, notwithstanding its change by the revision of that year, made practice of medicine without license and registration a misdemeanor. The plaintiff some time before trial desired to discontinue the action without costs. The County Society, which had with plaintiff's consent amended its answer, agreed to this. Mr. Purrington and Judge Meade, however, refused to let the plaintiff discontinue unless he paid costs. This they did upon the ground that such consent on their part would imply some possible merit in his action, or a possible admission by them that their acts as counsel and magistrate were unauthorized by law. The trial judge held that the complaint stated no cause of action, but allowed the plaintiff permission to move at special term for an amendment, on condition of paying the defendants Meade and Purrington costs amounting to $210, but directed that if this amendment were not applied for within twenty days, the court directed the complaint should stand dismissed, with full costs and extra allowances of five per cent. to each defendant. Thereafter the plaintiff again asked Messrs. Meade and Purrington to allow him to discontinue, and they consented to do so, upon condition that he pay additional costs in amount of $100, which he did, thus fully admitting their contention that his action was without merit.

The Associated Physicians of Long Island.—The second regular meeting of this society, the establishment of which was recently mentioned in these columns, was held at Patchogue on Saturday, October 8th, under the presidency of Dr. William Browning, of Brooklyn. The following was the programme of the scientific session: 1, "Laryngeal Diphtheria," by Dr. Pedro F. Francke, of Far Rockaway; 2, "The Use of Digitalis in Chronic Organic Cardiac Disease," by Dr. William B. Gibson, of Huntington; 3, "The Treatment of Fractures of the Spinal Column," by Dr. Algernon T. Bristow, of Brooklyn.

The Yale Medical School.—The vacancy caused by the retirement of Dr. Lusk, of the physiological department at the Yale Medical School, has been filled by the appointment of Dr. Moore, formerly instructor of physiology in the University College Hospital, London.

Fatal Accident in an Insane Asylum.—The boiler in a wing of the asylum for dangerous and criminal insane at Iona, Mich., exploded on October 10th, killing one man and badly injuring three others.

Diphtheria prevails to an unusual extent in the lower wards of Elizabeth, N. J. Several cases are reported daily, but many families in which the disease exists endeavor to conceal the cases, and the work of the health board in stamping out the threatened epidemic is greatly impeded.

The Filth of Havana.—Dr. W. F. Brunner, sanitary inspector of the Marine Hospital Service, has made his first report from Havana since the war began. He says that the city is even more filthy than it was before, if such a thing can be imagined. There is not a great deal of yellow fever, simply because there is but little material for the disease to feed upon, but pernicious malaria, dysentery, and typhoid fever are raging. The deaths for the week ending October 6th were five hundred and thirty-six, which is larger than for any single week during the past year. There are still some reconcentrados, whose deaths from starvation help to swell the roll of mortality in that wretched Spain-ridden city.

Professor Ogston, senior surgeon to the Aberdeen Royal Infirmary, has resigned after thirty years' connection with this institution, on account of the pressure of professional and other duties.

Spread of Typhoid Fever by Flies.—In view of the reports concerning the spread of typhoid fever in camps through the medium of flies, and of the experiments demonstrating the possibility of this, as set forth in a letter by Dr. M. A. Veeder in a recent issue of the MEDICAL RECORD, the board of health of the village of Lyons has adopted the following regulation: "All water-closets, vaults, or other receptacles liable to infection by typhoid or dysenteric material, shall be properly inclosed with tight walls and such doors, screens, and covers as may be necessary to make their contents inaccessible to flies."

Public Medical Relief.—The French legislature passed a law in 1893, providing that every citizen who is without resources shall be entitled to receive gratuitous medical assistance. Under this law, a list is drawn up, in every commune, of the persons entitled to this relief, the total number of such representing about 3.5 per cent. of the population. Of these, about one-fourth availed themselves of the privilege of free medical assistance during the past four years. The cost to the State for medical attendance, drugs, and nursing, was 13 francs (about $2.50) for each patient, and the total expense to the State about $1,000,000.

Wanted: An Absorber.—Separate post-graduate medical schools will be abolished, only when they are incorporated with a complete but separate plant, as an integral part of a university. This idea was set forth by the president of the New York Post-Graduate Medical School, in his inaugural address at Chickering Hall, in October, 1882. It is impossible to teach undergraduates and graduates together in any considerable number, and the same teachers cannot give the time necessary in addition to their own duties for post-graduate instruction. The two departments will always be required.

Dr. Charles H. Chetwood has been appointed visiting surgeon to the Bellevue Hospital.

The Sixth International Otological Congress will be held in London, on August 8, 9, 10, 11, and 12, 1899. President, Dr. Urban Pritchard, professor of otology at King's College, London. The meetings will, by permission, be held at the Examination Hall of the Royal College of Physicians and Surgeons, Victoria Embankment. The subject chosen for special discussion is "Indications for Opening the Mastoid in Chronic Suppurative Otitis Media." A committee has been formed, the treasurer being Mr. A. E. Cumberbatch, 80 Portland Place, London, W.; and the honorable secretary, Mr. Cresswell Baber, 46 Brunswick Square, Brighton. The last congress met in Florence, under the presidency of Dr. Grazzi.

Western Surgical and Gynæcological Association.—The eighth annual meeting of this association will be held at Omaha, December 28 and 29, 1898. Titles of many papers are already in the hands of the secretary, and the coming meeting promises to be most interesting. The local committee of arrangements at Omaha is actively preparing for the entertainment and comfort of those who attend. Titles of papers should be sent to the secretary, Dr. George H. Simmons, Lincoln, Neb., as soon as possible, but not later than November 20th, to insure a place on the programme. Dr. D. S. Fairchild, of Clinton, Iowa, is president of the association.

The Red Cross and the Army Medical Department.—The vice-chairman of the Red Cross relief committee recently wrote to the President, asking why the intervention of the Red Cross relief committee should be longer needed, and why the government does not see to it that its own sick are provided for? To this Surgeon-General Sternberg has replied that there is now no further necessity for the Red Cross to provide for the sick soldiers, as the government has made ample provision for them, and he thinks "those patriotic and liberal citizens who have contributed so freely to aid in the care of our sick soldiers may now leave the matter in the hands of the government without any apprehension as to the result." Dr. Sternberg said that at first the emergencies of the war made the assistance of relief associations most valuable, notwithstanding the fact that it is the intention of the government to provide liberally for the care of sick soldiers. Supplies cannot always be provided at the proper place and time to meet an emergency, and, moreover, at the outset of the war the arrangements made for providing light diet for the sick were inadequate under the conditions which prevailed in the camps of instruction and among troops engaged in active operations. For this reason the presence of Red Cross agents, with their abundant supplies of delicacies for the sick, was of inestimable value. But now surgeons are entitled to draw sixty cents a day for each sick man in commutation of the regular ration, and this money can be used for the purchase of a proper diet, for which it is far more than sufficient. Furthermore, it is not at all probable that troops will again be sent so far away from their base of supplies.

Society Reports.

NEW YORK STATE MEDICAL ASSOCIATION.

Fifteenth Annual Meeting, Held in New York City, October 18, 19 and 20, 1898.

DOUGLAS AYRES, M.D., OF MONTGOMERY COUNTY, PRESIDENT.

First Day—Tuesday, October 18th.

THE meeting was called to order by the president, DR. DOUGLAS AYRES, of Montgomery County, at 10 A.M., in the Mott Memorial Hall.

Report of the Committee of Arrangements.—This report was presented by DR. FREDERICK HOLME WIGGIN, chairman of the committee, and showed that forty-nine scientific contributions had been offered, coming from eighteen counties in the State and from four other States.

Report of the Council.—This report was presented by the secretary, DR. FERGUSON. It stated that the library now contains nine thousand nine hundred and ninety-nine volumes, and that the financial condition of the association is very satisfactory, despite last year's donation of $2,000 to the Rush monument fund.

Report of the Committee on the Abuse of Medical Charity.—DR. FREDERICK HOLME WIGGIN, the chairman of the committee, presented this report. The main features of this work have already been quite fully presented to the readers of the MEDICAL RECORD. The committee, consisting of Drs. F. H. Wiggin, Parker Syms, and S. B. Wylie McLeod, of New York County, E. D. Ferguson, of Rensselaer County, and A. A. Hubbell, of Erie County, labored in season and out of season before the governor, before the committees of the senate and assembly, and in private; and in connection with the committees from the other medical societies these gentlemen did yeoman service against this great social evil. The report showed the chief differences between the last and the former dispensary bill, and asserted that the experience of all connected with charity organization had abundantly proved the necessity of empowering an impartial constitutional body, such as the State board of health, to make rules and regulations for the goverment of all institutions doing the semipublic service of relieving the sick poor.

DR. WICKES WASHBURN, of New York, one of the workers in this field, said that the arguments presented before the legislative committees by the opposition had been so flimsy that the senators did not hesitate to say that, if those opposing the dispensary bill had no better arguments to offer, they would better have remained at home. Another significant remark of an officer high in the councils of the State Homœopathic Medical Society was that he did not dare read before the home society the so-called arguments against the dispensary movement, lest they should lead the members to turn and indorse the bill.

Address by the President.—DR. DOUGLAS AYRES, of Montgomery County, in this address touched upon the great progress that had been made in medicine and surgery from the time of the introduction of the fever thermometer down to the present. He said that the use of the thermometer in clinical medicine had been first formally and comprehensively treated in 1835 by Becquerel, but this subject had received its first great impulse from Wunderlich in 1851. After observations in one hundred thousand cases this great physician felt justified in claiming that he had demonstrated that certain diseases, and especially typhoid fever, obey certain fixed laws, as evidenced by the range of temperature. The birth of that new and

wonderful science—bacteriology—was made possible by the development of the microscope. As long ago as the seventeenth century powerful magnifiers were wielded in a masterful way by such observers as Malpighius, Lieberkühn, and Van Leuwenhoek. In 1863 Pasteur had established the fact that certain diseases are due to micro-organisms, and after Koch's discovery of the bacillus of anthrax in 1875 Pasteur produced the identical disease by inoculcating animals with pure cultures of this bacillus. In 1882 Koch made the discovery of the specific cause of tuberculosis. The speaker then touched upon the discovery of the diphtheria bacillus by Loeffler, the Widal reaction of typhoid fever, and the wonderful triumphs of antiseptic and aseptic surgery growing out of the studies in microscopy and bacteriology. In view of these facts the speaker thought one was justified in saying that uncertainty in medicine was fast giving place to demonstration, and that the medicine of to-day is rich in those truths which go to make up the perfect science.

Conservative Surgery in Crushing-Injuries.—Dr. J. G. Hunt, of Oneida County, read a paper on this subject, based on a large factory experience of twenty-five years. He said that it was much more to a surgeon's credit to have saved one apparently hopelessly damaged limb than to have most skilfully performed a hundred amputations. In these days of antiseptic and aseptic surgery there seemed to be hardly any limit to the practice of conservative surgery in crushing-injuries. The paper contained a tabulated account of 887 injuries of this class, which may be summarized as follows: 566 were fingers, with 112 amputations; 38 were thumbs, with 14 amputations; 14 forearms, with 1 amputation; 42 arms, with 14 amputations; 14 shoulders, and no amputation; 30 injuries to the head and 5 trephinations; 24 injuries of the legs, with 12 amputations; 20 injuries of the feet, with 6 amputations; 42 injuries of the toes, with 10 amputations; 4 injuries to the spine and 5 injuries to the pelvis.

The Teaching of Physiology and Hygiene in the Public Schools.—Dr. Frank Overton, of Suffolk County, read this paper. He said that although for the past fifteen years New York and most other States had had a law compelling the study of physiology in our public schools, the instruction in this subject was more than a generation behind the times, and was anything but practical. It should be understood that physiology is a combination of mechanics and chemistry applied to the living body. If the subject was taught by a few demonstrations on small animals, etherized and treated tenderly, the children would not only obtain a far better idea of the true bearing of physiology on one's daily life, but it would give an effective quietus to the present antivivisection furor. Unfortunately, the evident intent of the compulsory law was to give a necessarily one-sided view of physiology, by dealing chiefly with the subject of the effects of alcohol on the human system.

Dr. Delancey Rochester, of Erie County, said that the teaching of physiology in the schools could be profitably extended to a consideration of the means of preventing epidemics of infectious diseases and the dangers of indiscriminate cohabitation. By reference to the lessons of botany, much could be taught the scholars about the relation of the sexes without bordering on the prurient, and the need for imparting such knowledge is only too well understood by physicians, who constantly hear one of the common diseases of women flippantly spoken of as "only a clap."

Dr. E. E. Holt, of Portland, Me., remarked that as physicians very frequently ignored the common teachings of physiology, as regards the care of the eyes and the direction in which the light should strike the book one is reading, it was obvious that such truths should be inculcated into the young and receptive minds of the pupils at our schools.

A New Method of Amputation at the Knee-Joint, Applicable to Cases of Senile Gangrene of the Foot.—Dr. Stephen Smith, of New York, described a method which he had successfully employed in a case of senile gangrene. The patient was a laborer, seventy-eight years of age, and of intemperate habits. For a month previous to coming under observation he had had gangrene of the great toe of the right foot. He was extremely emaciated and feeble. His arteries were everywhere calcified, and the pulsations of the heart were feeble and intermittent. The urine had a low specific gravity and contained a little albumin, but was free from sugar. The toe was black and dry, and there were some dusky spots on the dorsum of the foot and on the ankle. The capillary circulation was very imperfect. In this enfeebled state the only treatment possible was relief of pain and improvement of nutrition by proper attention to diet. For the first indication the man was given a pill of opium and soap, and, for the second, peptonized milk in large quantity and two ounces of whiskey every six hours. The local treatment consisted in the employment of antiseptic irrigations and moist antiseptic dressings. His general health improved decidedly under this treatment, but the gangrene steadily extended. He now desired more radical treatment. Amputation above the knee-joint for senile gangrene, the speaker said, had long been advocated and practised by such eminent surgeons as Valentine Mott and Jonathan Hutchinson. Recently Heidenhain and Kruger in Europe, and Powers, of Denver, had advocated this high operation. They allege, as a reason, that it is impossible to determine at what point the obstruction exists, and hence one is much more likely to secure healthy and well-nourished flaps by operating as high as the knee, or even through the thigh. Dr. Smith said that the structures about the knee are more largely supplied with blood than any of the tissues of the leg, and hence if an amputation could be performed in such a manner as to save all of the eight arterial branches in this region, it was evident that the flaps would be abundantly nourished. Bearing these anatomical facts in mind, Dr. Smith planned and performed the following operation: A straight incision was made from two inches above the upper border of the patella downward over the centre of that bone to the tuberosity of the tibia. From the lower extremity of this incision two curved incisions were made, having their convexities downward. One was made in the direction of the external border, and the other in the direction of the internal border of the limb. These two incisions were then joined posteriorly by a straight incision across the upper border of the calf. Next, the flaps were dissected up from the tibia and fibula, the patella was removed, and the knee-joint was disarticulated. It is important that the lateral incisions going from the lower extremity of the perpendicular incision should curve well downward, so as to conserve the desired blood supply. The patient was well stimulated for some hours before the operation, and required but little ether during the amputation. After it had been completed, his pulse was 96 and respirations 22. Primary union of the flaps took place. On removal of pressure from the artery in the groin, it was noticed that the flaps at once assumed a pink color, showing that the capillary circulation was fully and immediately secured. In due time the patient was supplied with an artificial limb, which enabled him to walk without a limp, using only a cane.

Dr. J. W. S. Gouley, of New York, said that the method just described was certainly an admirable one, yet he could not help thinking that the case was a most fortunate one, in that these arteries had all been

pervious. In his own experience he recalled having amputated under similar conditions and being surprised at the lack of hemorrhage. This was ascribed at the time to the very thorough application of the tourniquet, but a few days later the flaps sloughed and the patient died within a week. On dissecting the stump, not only was the popliteal artery found to be plugged, but the clot extended up to the upper third of the femoral artery. These cases of senile gangrene were very apt to present just such a condition. There were, of course, exceptions, as, for instance, the case just reported in the paper. The Esmarch bandage was surely contraindicated in cases of senile gangrene.

Dr. Smith remarked that, as the arteries in his case would not safely bear any considerable pressure, it was thought improper to apply the Esmarch bandage, and hence the artery had been controlled by placing a pad over it and making pressure on this with the finger.

Dr. M. C. O'Brien, of New York, cited a case in which he had performed amputation for gangrene. The operation had been done by him in 1882 on a man seventy-four years of age, and, following the custom of the Charity Hospital at that time, he had used the Esmarch bandage. The patient was found dead in bed twelve days after the operation. On post-mortem examination, it was found that from the point at which the Esmarch bandage had been applied to the extremity of the popliteal artery was one continuous clot, and also that all the other arteries contained plugs extending up from one inch to three inches. Only at the extremities of the flap, on the under side, had there been any effort at repair. Had the patient lived longer, gangrene would undoubtedly have recurred. The death of this patient, he thought, was very largely due to the use of the Esmarch bandage.

Subnormal Temperature.—Dr. Leroy J. Brooks, of Chenango County, read a paper on this topic. A distinction, he said, should be made between heat and fever, and the fact should not be lost sight of that a temperature that might be normal in health might be subnormal in disease. With the exception of temperature changes due to variations in the nerve centres, fever is due to specific infection. It was probable that the same toxins would produce opposite results in varying conditions of the system. In uræmia, for example, there is an elevation of temperature, but when decomposition takes place with the production of ammonæmia, the temperature becomes subnormal. A number of cases of carcinoma of the stomach and liver had been reported in which the temperature had been persistently subnormal, doubtless the result of infection and sepsis. The depressed temperature of cholera was doubtless the result of specific poisoning, the excessive drain, and the rapid and destructive nephritis and tissue changes. In some very malignant cases of diphtheria the temperature remains subnormal; and the same might be said of a type of pneumonia that had been quite prevalent during the past few years, in which death marked the patient as his own from the first. Cases of excessive venery had been placed on record, which had been associated with prolonged subnormal temperature and depression of the nervous system. Periodical alcoholics presented a subnormal temperature for several days preceding the outbreak, which was at once a sign of the lack of normal balance in the system and an indication for prompt treatment. Dr. Brooks cited several cases that had come under his own observation, in which a persistent subnormal temperature had been one of the earliest manifestations of an approaching nervous prostration as a result of prolonged strain. His conclusions were as follows: (1) Subnormal temperature is by no means uncommon; (2) it is a frequent prodrome of disease and an important indication for abortive treatment; (3) continued subnormal temperature is disastrous to the nerve centres; (4) subnormal temperature in diseases usually characterized by a high temperature is a grave symptom; and (5) it may result from primary disease or injury to the nerve centres, or from autotoxæmia.

Dr. Delancey Rochester laid stress on a deficient capillary circulation as a factor in these cases of subnormal temperature, and expressed the belief that, in the way of treatment, more could be accomplished by proper exercises and massage than by the administration of stimulants (such as strychnine) to the myocardium. There is usually a lack of perspiration or else a cold perspiration.

Dr. Overton remarked that he had observed a subnormal temperature and a condition commonly described by the older physicians as "biliousness" in many persons convalescing from acute diseases.

Dental Pathology in its Relationship to General Health.—Dr. Dwight L. Hubbard, of New York, read a paper with this title, having selected the subject, as he said, with the special object in view of directing the attention of the medical profession to a neglected field—a matter which once more proved the truth of the old saw, "What is everybody's business is nobody's business." He showed in a general way how many diseased conditions of the eye, nose, and throat are directly dependent upon abnormal states of the mouth, or rather of the teeth, and that pyorrhœa alveolaris, which physicians are prone to ascribe to reflex disturbances of the general system, is very commonly the result of caries of the enamel, acidity of the secretions, or syphilitic or other constitutional infections.

Dr. Rochester referred to two cases of most obstinate headache which had been finally cured through the good services of a competent dentist.

State Examinations of Milk for Tuberculosis.—Dr. Florence O. Donohue, of Onondaga County, presented this communication. He said that the opinion that tuberculosis was infectious was not a notion of yesterday, but had existed in more or less definite form for centuries. Most contagious diseases had a very definite period of incubation, but not so with tuberculosis, which might not make itself manifest for weeks, months, or even years after the introduction of the germs into the system. These germs entered the body either through the mucous membrane of the respiratory tract or that of the intestine. They might give rise to local tubercle, or pass on to the nearest lymphatic gland, developing a condition formerly described as "scrofula." It was always known that scrofula was the precursor of consumption, but the exact relation between the two was unknown. The human being found in the acid gastric juice a potent source of protection against this disease, for the tubercle bacillus throve in an alkaline medium, but was destroyed by acid fluids. The bovine race stood at the head of the list of animals which were susceptible to tuberculosis. The goat was not very susceptible, and the horse was rarely affected by it. For man, it was the tuberculous cow that was most to be dreaded, as cow's milk was consumed by invalids and infants whose gastric digestion was so disturbed as often to allow of the safe passage of the bacilli into the intestine. In milk from the tuberculous udder of the cow the bacilli were always found, and they had also been repeatedly found in the milk of cows whose udders were free from the disease. The statistics collected by the New York State board of health showed that for eight years previously every eighth death had been caused by tuberculosis. Tuberculosis cut off over twelve thousand inhabitants in the State of New York annually, no other disease approaching it as a cause of mortality in the human family. The State board of health was of the opinion that to tuberculous milk could be traced the tuberculosis of infants. There was at the outset of their labors

no legal precedent authorizing inspection of the cows throughout the State, but a large-hearted governor was instrumental in the passage of a bill with an appropriation of $5,000, to enable the first step to be taken. The "tuberculosis act" became a law in May, 1892, and authorized the board to inspect cattle within the boundaries of the State, and to cause those found to be afflicted with the disease to be killed. It had been estimated that about forty million dollars' worth of milk and its product were consumed every year in New York State, and, according to the census of 1892, there were nearly two million milch cows in the State. It had been abundantly proven that tuberculosis might be carried into the human system by tuberculous meat. A tuberculous cow might give tuberculous milk, and would do so if her udder was affected, and if she did not do so in a given case it was only a question of time when she would become a source of infection. The work of inspecting the herds was begun in Westchester County in 1892, and, at first, in the detection of the disease, the physical signs were alone relied upon. Later on, as a result largely of the experiments and observations of Prof. James Law, the tuberculin test was introduced, the board having convinced itself of the value of this test and of the innocuousness of the method. In the course of a year and a half twenty-two thousand cattle were inspected, and seven hundred ordered to be destroyed. Most of this work was done in the Hudson River district. This interference with the dairy business, and the pecuniary loss so entailed, caused the matter to be made the subject of a senatorial investigation. After careful consideration the committee decided that this important work of conserving the public health was not a matter to be taken up one season and dropped the next. The result was the establishment of a permanent tuberculosis commission on May 31, 1894, with all the powers of the State board of health. The small appropriation placed at its disposal only enabled the commission to establish the prevalence of bovine tuberculosis and its contagiousness. In most cases the disease could be traced from herd to herd. It was not found that any particular breed of cattle was immune. While New York took the initiative in this matter, it was not to-day by any means in advance of the other States. Sanitary science had long warned the public against the dangers of tuberculous milk, but ignorance, prejudice, and greed long held certain communities in what might truly be called a death grip. It was the duty of the medical profession constantly to preach the doctrine of the preventability of tuberculosis. The general belief was that infection most commonly took place by inhalation of the germs, as it was well known that the disease might be conveyed by dust. As milk was practically the only diet of artificially fed infants, this fact, together with the distribution of the tuberculous lesions in childhood, was sufficient to arouse the suspicion that tuberculous milk was the source of infection in such children. Tuberculosis in the cow was, as a rule, a chronic disease, and animals afflicted with it might yield a fair milk for a considerable time. The law was still in force in New York State, and the commissioners were still drawing their salaries, but for the past two years the work had been at a standstill.

Dr. Hiram A. Pooler, of New York, said that he had examined the milk of cows fed on brewer's feed and glucose grains, and had been able to establish a distinct difference between the milk from them and that from those fed on more healthful food. He had also observed that tuberculosis was more prevalent in districts in which this bad food was given to the cattle. In 1883 he had appeared before a legislative committee, and had presented the same arguments as had been brought forward by the reader of the paper. As a result a law had been passed that no unwholesome food should be given to cattle, and this law was still on the statute books, but it had led to endless argument and litigation because of the greater cheapness of the unwholesome food. Yet thousands of infants were to-day dying from disease conveyed to them through their foster mother, the cow.

Dr. H. O. Marcy, of Boston, said that one could hardly overestimate the good done by arousing public sentiment on this question. He had been deeply interested in the experiments recently made in Cattaraugus County, N. Y., on the refrigeration of milk. By agitating the milk while it is being frozen, and subjecting it to this process of ice crystallization for six or eight hours, it had been found possible on a commercial scale to eliminate almost entirely the pathogenic bacteria, and all but seven or eight per cent. of the water. This gave a product which was a good deal thicker than cream, and which had admirable keeping-qualities. The speaker said that he was disposed to share the view of some of the more enthusiastic advocates of this new method of treating milk, *i.e.*, that in the future it would be possible to eliminate even this small percentage of water, so that the milk might be distributed as a solid product like butter.

Dr. H. D. Didama remarked that if all the tuberculous cows in the State were destroyed, and all the others were kept under suitable supervision, there would be no occasion for refrigerating the milk.

Dr. A. T. Van Vranken asked if a relation had been established between bovine tuberculosis in certain localities and human tuberculosis in the same localities. This, it seemed to him, was an important link in the chain of evidence.

Dr. S. A. Knopf, of New York, said that he had given considerable attention to tuberculosis, and had formerly been of the opinion that in the majority of instances the tubercle bacilli entered the system through the respiratory passages; now, however, he was a convert to the view that the channel of infection was in the digestive tract. The frequency of tuberculosis in infants was explained by the fact that milk was almost their exclusive diet, and their general health was often feeble. The germs, having gained an entrance, found in the lungs of these feeble children the place of least resistance, and consequently they multiplied there.

Dr. Donohue said that the inspectors had found bovine tuberculosis to be exceedingly prevalent in the Hudson River district and eastern part of the State, while there was little or none in the western part. There was no doubt in his mind that much of the milk coming to New York City was infected with tuberculosis. The tracing of the disease directly to human beings must remain impracticable, but it was not at all necessary, as the so-called missing link was supplied by the analogy observed in experiments among animals.

The Cases of Pulmonary Tuberculosis that Cannot Go Away from Home.—Dr. Delancey Rochester, of Buffalo, read this paper. He said that it should ever be borne in mind that in the treatment of pulmonary tuberculosis the physician was called upon to treat individual cases. A most essential part of the treatment was to have the patient in the open air and sun as far as possible. The avenues of secretion should all be kept open, as the normal excretory function of the lung was seriously interfered with. Dr. Charles G. Stockton had first suggested to him the employment of induced sweating as a means of controlling the profuse night-sweats of phthisis. A full hot-water bath should be taken once or twice a week, and a tepid or cool sponge bath every morning, followed by vigorous rubbing. Very few general rules could be laid down regarding the diet of consumptives. Rare beef, eggs, baked potato, boiled rice, and boiled young beets were especially desirable articles of diet; milk should be taken freely, but not at the same meal

as meat; cocoa and chocolate were nutritious; coffee and weak tea might be allowed in moderation. If there was hectic fever or the physical signs indicated marked involvement of both lungs, exercise should be avoided or taken with extreme moderation. Too much exercise acted deleteriously, because of the deficient oxygenating area. When there was only a slight local bronchitis or a slight pulmonary infiltration, exercises were useful. The local treatment consisted in the local application of medicinal agents. Sprays and inhalations were our only means. Sprays rarely reached beyond the vocal bands or the first rings of the trachea, and the same was true of medicaments dissolved in the fixed oils; but inhalations of the essential oils reached much further. Of these, oil of peppermint was one of the best, and it was conveniently employed in the form of the essence. A cheap and efficient inhaler might be improvised from a cigar holder packed tightly with absorbent cotton. It was intended for constant use. Five or ten drops of the following mixture should be placed in the inhaler at a time, and should be renewed every two or three hours: Menthol, one part; spirits of chloroform, guaiacol, terebene, eucalyptol, and thymol, of each two parts. Guaiacol could be made into a perfect emulsion with milk of magnesia, and balsam of copaiba, which often acted beneficially, could be easily administered in an emulsion made with mucilage of acacia and syrup of tolu. For the emulsification of the guaiacol and the cigar-holder inhaler, Dr. Rochester said he was indebted to Dr. W. H. Woodbury. The copaiba could be conveniently prescribed in the following formula:

℞ Bals. copaibæ	6
Mucil. acaciæ	50
Morph. sulph.	0.10
Ol. menth. pip.	0.10
Ol. amygdalæ amar.	0.20
Syr. tolut	44

Four cubic centimetres to be taken every four hours.

A number of physicians had reported favorable results from the use of tuberculin and antituberculous serum early in the disease, but he had not been able personally to confirm these. He had, however, had some excellent results from the hypodermic use of nuclein. In the administration of creosote, care should be taken to have a pure article, to give it always after food, to increase the dose gradually, to watch the urine, and to be on the lookout for gastric disturbance. When it became necessary to reduce the dose, it should be done gradually; sudden stopping of a large dose often produced unpleasant effects. By proper attention to details, he had been able to give two cubic centimetres of creosote three times daily for three months at a time. When cod-liver oil did not produce gastric disturbance, it was still our sheet-anchor. An emulsion freshly made by a competent pharmacist was much to be preferred and would generally be well borne. In the treatment of the cough, if it was due to pleurisy, the chest should be stripped. When there was bronchial irritation, the cough was best treated by inhalations or by the administration of hydrocyanic acid and chloroform water. Stimulating expectorants rarely have any place in phthisis, and opium should be withheld, except in the last stages of the disease. Hæmoptysis was best treated by rest in bed and the hypodermic use of morphine or atropine. The use of antipyretics was to be deprecated. The sweats were best combated by general treatment, but among medicinal agents atropine had proved in his hands superior to all others. When there was excessive vomiting, drachm doses of oxalate of cerium were beneficial.

Dr. Knopf said that, while the climatic treatment was excellent, it was beyond the reach of the majority of tuberculous patients, who commonly lived near the great centres of population. He firmly believed that every State should have special sanatoria with accommodations for poor phthisical individuals, and that this was a worthy cause in which to enlist the services and influence of the members of the association. The plan had proved very successful in Germany. As to the matter of expense, it should be noted that, while the daily per capita cost in the general hospitals of New York City was $1.16, it was only $1 in the excellent special sanatorium of Dr. Trudeau, in the Adirondacks. In these special sanatoria, moreover, twenty-eight per cent. might be cured—by which was meant that the person was restored to a condition in which he was enabled to return to his occupation. In our general hospitals almost no tuberculous patients recovered, so that the money spent on phthisical patients in these institutions was virtually thrown away. He would treat the cough of phthisis very largely by discipline, as it was, for the most part, unnecessary and very injurious. In order to avoid undue shock in the use of baths, it was his custom to begin with a dry massage, then use use frictions with alcohol; next, alcohol and water; and, finally, to use douches. While sunlight was exceedingly beneficial to these individuals, they should not be exposed to it indiscriminately—indeed, the head should usually be well protected from the direct rays of the sun. When there was pleurisy, nothing acted so well as the old-fashioned dry-cups.

Dr. John M. Farrington, of Broome County, asked for information regarding the best treatment of very severe pulmonary hemorrhage. In one such case, when each act of coughing brought up a fresh gush of blood, he had given chloroform until the patient was insensible, and had then kept her under the influence of morphine for hours. In this particular case, on several occasions this plan of treatment had yielded very gratifying results.

Dr. Knopf said that a most excellent and tried method was the immediate temporary ligation of the four extremities. He had repeatedly seen it check severe hemorrhages very quickly.

Dr. Rochester, in closing, said that he would be almost afraid to administer chloroform in profuse pulmonary hemorrhage, but he would not hesitate to give one-fourth to one-half of a grain of morphine, and repeat it, if necessary, until the respirations had been brought down to 12 or even 8. The common error was to give too small a dose of morphine in such cases.

Genital Neuralgia and the Genito-Reflex Pains.—Dr. F. P. Hammond, of New York, treated this subject from the standpoint of the clinician, quoting freely from his clinical records to illustrate the many different types of nerve irritation met with. He said that there were eight genital crises in women, viz.: (1) The establishment of menstruation; (2) the menstrual period; (3) marriage; (4) pregnancy; (5) abortion; (6) parturition; (7) the puerperium; and (8) the menopause. It was small wonder, then, that women were so frequently the victims of genital neuralgias. In the treatment of perimetritis and adhesions he found pelvic massage extremely useful; it was, in fact, a series of nerve stretchings. Strychnine was often given to hysterical subjects, but it seemed to be a direct irritant to the nerves in these cases. Here he would give the preference to caffeine-sodium salicylate.

Memoranda.—Dr. H. D. Didama, of Syracuse, in a paper with this brief and rather vague title, described, in his humorous way, some of his clinical experiences, and made deductions therefrom.

Indolent Ulcers of the Leg.—Speaking of this very common condition, he advised painting with tincture of iodine, and filling up to a level with the surrounding skin with subnitrate of bismuth. The limb was next almost encircled by a series of strips of adhesive plaster, and over this absorbent cotton and an elastic

flannel bandage were applied. The bandage should reach from the ankle to the knee, and the dressing should be renewed daily after washing of the parts with soap and water. Under this treatment it would be found that granulations would soon spring up, and that the laboring man need not desist from his work. After the ulcer had healed, it might be of advantage for the patient to wear rubber-webbing bandages—not the black-rubber bandage.

Urethral Caruncle.—He advised injecting through a very fine hypodermic needle a four-per-cent. solution of cocaine into the growth. This would secure anæsthesia, not only of the sensitive neoplasm, but also of the surrounding parts, and then, with delicate scissors, the caruncle and a thin layer of the adjacent mucous membrane could be painlessly removed.

Epistaxis.—This, he said, could be frequently arrested, even when quite severe, by the administration of one grain or more of opium. He had used this treatment for the past thirty years, and it had proved successful even in cases in which astringent injections and plugging of the nares had not succeeded.

Bronchiectasis.—When the patient suffered from severe attacks of coughing several times daily, and expectorated or vomited up large quantities of fetid pus, he stated that improvement quickly followed if the patient would, from time to time, assume the recumbent position and allow the head to hang down over the side of the bed. In this position the pocket containing the fetid accumulation was inverted and its contents were discharged without much effort.

A Case of Fistulous Opening between the Ilium and Bladder.—Dr. H. O. Marcy, of Boston, reported an interesting case of this kind upon which he had operated. He also exhibited a vesical calculus and nine hundred and seventy-two gall stones which he had quite recently removed by operation.

Large Abdominal Tumors.—Dr. F. H. Wiggin, of New York, exhibited two large abdominal tumors which he had recently successfully removed by laparotomy.

Tuberculosis of the Middle Ear.—Dr. Seymour Oppenheimer, of New York, presented this paper. He stated that aural tuberculosis might occur at any age, but was most commonly met with in children between the ages of two and twelve years. Tubercle bacilli had been found in the purulent discharge from the middle ear in four out of twenty-five individuals, all of whom had finally succumbed to tuberculosis. In all but three of the cases in which tubercle bacilli were found there were marked evidences of tuberculosis elsewhere. A study of a large number of statistics showed that in 2.4 per cent. of tuberculous individuals the ear was involved. The first indication was the sudden appearance of pus in the external auditory canal, without previous evidence of disease there. The character of the affection was established by the discovery of the tubercle bacilli in the pus, or by the physical signs of tuberculosis in other parts of the body. The affection was characterized by an inflammation of low grade, with caries of the intratympanic bones. The perforation in the membrana tympani was circular, and its edges were thick. One distinctive feature was the bluish-white appearance of the membrane. More or less characteristic was the presence of two distinct perforations in the drum. An additional sign, which was of value when present, was enlargement of the peri-articular glands. The early diagnosis of tuberculosis of the tympanum was of great importance, as the early use of appropriate measures afforded a chance of getting rid of the local disease. The prognosis as regards hearing was unfavorable, and when the bone became involved the life of the individual was threatened. Chloride of zinc and lactic acid were probably the best local applications. The usual constitutional remedies for tuberculosis were important here.

Lantern-Slide Exhibition Relating to Prostatic Diseases.—Dr. Samuel Alexander, of New York, gave an address on this subject, and illustrated by numerous photographs the pathological anatomy of enlargement of the prostate. He said that there were probably few subjects about which there was such a diversity of opinion, and about which so little was actually known. This was because up to the present time all investigations had been imperfect, and had not taken a sufficiently broad view of the subject. It was important to decide what was the ultimate cause of the prostatic enlargement, the character of this enlargement, and the cause of the retention of the urine. Personally, he believed that in the vast majority of cases the growth was glandular, and that the obstruction to the outflow of urine was in the first instance mechanical, and afterward was the consequence of the vesical muscle being inserted into the prostate itself.

Anthropological Rambles in the Island of Java.—Dr. H. Ernst Schmid, of White Plains, gave an entertaining lecture on this topic, which was freely illustrated by lantern views.

Second Day—Wednesday, October 19th.

The president announced the appointment of the following committees:

Committee on Abuse of Medical Charity.—Dr. Wickes Washburn, of New York, chairman; Dr. E. D. Ferguson, of Troy; Dr. N. J. Hepburn, of New York; Dr. Delancey Rochester, of Buffalo; and Dr. Parker Syms, of New York.

Committee on Legislation.—Dr. E. Eliot Harris, of New York, chairman; Dr. L. J. Brooks, of Norwich; and Dr. E. D. Ferguson, of Troy.

Reception of Delegates.—Upward of twenty delegates, representing the State societies of Connecticut, New Jersey, Pennsylvania, Massachusetts, Maine, and Vermont, were in attendance and were formally received by the association.

Dr. Oliver T. Osborn, of New Haven, on behalf of the Connecticut Society, called attention to the action taken by that society in opposition to the now well-known senate bill, the object of which is to put a stop to vivisection in the District of Columbia.

On motion of Dr. E. D. Ferguson, the New York State Medical Association indorsed this action of the sister society.

Acute Frontal Sinusitis.—Dr. Henry L. Swain, of New Haven, read this paper. He stated that this affection had been more common since the prevalence of the grippe, and, as repeated attacks seemed to lower the powers of resistance, it was probable that it would be still more frequently encountered in the future. In some cases, especially those becoming subacute, the ocular symptoms were very prominent. The more stormy and violent attacks, as a rule, clear up much more rapidly than those characterized by less urgent symptoms. The reason for the occurrence of infection of the sinuses in one case, and of only an acute coryza in another, was probably to be found in the fact that in cases of the former class there was usually present some lesion, the effect of which was to narrow the outlet of the sinus. The secretion having once become damned up in the sinus, pressure resulted; and this, in turn, caused congestion, tumefaction, and hypertrophy. The retention of the secretion in the sinus offered favorable conditions for the lodgement and multiplication of micro-organisms. The secretion was actually more profuse at one time than at another, and the greater intensity of the pain of frontal sinusitis in the morning was probably explained by this fact. The prognosis, under appropriate treatment, was good, although not infrequently recovery took place without any treatment. Our effort should be to reduce the

trend of blood to the head, and to promote cleanliness by hot irrigations with saline solution and hot applications over the nose. If the nostrils were much obstructed, relief would be afforded by spraying with a solution of Seiter's tablets. Cocaine might be used by the physician for reducing the tumefaction, but should not be placed in the hands of the patient. It was safe, however, to permit him to use a solution of suprarenal extract; and a combination of cocaine and suprarenal extract, when used by the physician, afforded a speedy and effectual means of diminishing the obstruction. The object of the paper was to encourage the use of local treatment in this malady.

Dr. Rochester remarked that he had succeeded in reducing the tumefaction by combining a four-per-cent. solution of cocaine with a two or three per cent. solution of suprarenal extract.

True and False Medical and Other Charities.—Dr. Wickes Washburn, of New York, read this paper. He said that only now were we beginning to appreciate the fact that mendicancy was a disease. Mrs. Josephine Shaw Lowell, a life-long worker in charity, said that there were two fundamental axioms which every charity organization society established in the last twenty-nine years had taught and practised, viz.: (1) In order to help any person who was in chronic distress, one must find out the cause; and (2) having found the cause, one could not hope to cure a disease except by patient, intelligent, personal work. The initial cause of much of the pauperization of the present day, the speaker said, could be traced to the dispensaries and to the medical profession. He had obtained, through the United Hebrew Charities, the record of the following instructive case: A woman, named Esther, had been under treatment at four different dispensaries for "women's diseases," at six dispensaries for "internal medicine," in two for "nervous disease," in four for "nose and throat disease"—and all within a period of eighteen months. The recent efforts to secure legislation for the control of the dispensary evil had been met by opposition from sources which would have been hardly suspected, and the statement, on good authority, that $100,000 had been wrongfully taken from the treasury of the city of New York during the past year by three institutions, lent additional significance to this fact. The case of "Esther" conclusively proved the necessity for co-operation, if one would effectually apply the remedy for this social evil. Last year, by an unfortunate misunderstanding, the State Homœopathic Medical Society was arrayed against those who sought relief from the legislature; but this had been adjusted, and the prospect was that the entire medical profession of the State would make a united effort during the coming winter for the much-needed legislative restriction of the dispensary abuse. A dispensary could not now become incorporated without approval of the State board of charities, but, it having once become incorporated, this board practically had no control.

Dr. William Finder, of Troy, ascribed most of the present dispensary abuse to the medical profession, primarily and largely to the baneful custom of treating the clergy without remuneration.

Dr. Leroy J. Brooks, of Norwich, placed the blame for the existence of this evil upon the attitude of the larger cities, and especially New York.

Dr. A. Palmer Dudley, of New York, objected to this statement, and asserted that it was not the medical profession of New York City that was to blame, but rather the whilom students of the postgraduate schools, who, after returning home, sent patients to these institutions for free treatment.

Some Thoughts on the Rational Treatment of Disease.—Dr. Chauncy P. Biggs, of Ithaca, read this paper. He said that as the regular profession did not proclaim any adherence to exclusive dogmas, each physician was at liberty to use any remedy or method of treatment coming within the bounds of reason. Unfortunately, physicians often believed in and used remedies empirically without any good reason for the faith that is in them. If the efforts of the physician were directed toward assisting nature, the best results might be expected.

Medicine without Drugs.—Dr. Solomon Solis Cohen, of Philadelphia, delivered an address on this topic. He took the position, to use Bigelow's words, that "the function of the physician is to conduct his patient safely through the storm of disease into the haven of recovery." Habit and environment exerted a powerful influence on the human organism, both in health and disease. Just as mental emotion might at times give rise to disease, so the physician might occasionally use it to advantage in a therapeutic way in a few carefully selected cases. The speaker then directed attention to the influence of high altitudes in increasing the hæmoglobin and the number of red blood corpuscles. Regarding organo-therapy, the speaker said that such treatment truly supplemented the natural recuperative efforts of the organisms. He had found the suprarenal extract the most reliable remedy for raising the blood pressure, thyroid extract very useful in restoring the functional activity of the skin and kidneys, and thymus extract a valuable means of improving general nutrition.

Drugs versus Cardiac Insufficiency.—Dr. Oliver T. Osborn, of New Haven, read this paper. He advocated in urgent cardiac failure the hypodermic use of morphine and atropine with a small dose of nitroglycerin. When digitalis was indicated, $\frac{1}{10}$ to $\frac{1}{50}$ gr. of digitalin should be given subcutaneously, and the patient should be kept in the recumbent posture until the effect had passed off. After compensation had been restored, it was well to give the fluid extract of cactus, in doses of ten to twenty-five drops; its action was very much like, but superior to, that of strophanthus.

Treatment of Fractured Patella by Open Operation.—Dr. Charles Phelps, of New York, read this paper. He stated that at the present time the majority of surgeons favored some form of operative treatment. Of ninety surgeons recently addressed by Dr. Charles Powers, of Denver, nineteen did not express an opinion because of lack of experience; nine said they would operate in all cases in which there were no distinct contraindications; forty-one would operate under specified conditions; twenty-one would not operate in any case. His own experience with the operative treatment comprised one hundred and seventeen cases, and of this number it was exceptional not to find the capsular fibres intruded between the fragments. In none of his cases had there been reason to believe that the apparent osseous union was not real. The power of complete flexion was invariably restored after suture, and convalescence was much more rapid than under non-operative treatment.

Report of Nominating Committee.—The nominating committee made the following report regarding the officers for the ensuing year: *President*, Dr. Joseph D. Bryant, of New York; *Vice-Presidents*, first district, Dr. J. G. Hunt, of Utica; second district, Dr. D. C. Moriarta, of Saratoga Springs; third district, Dr. F. W. Ross, of Elmira; fourth district, Dr. W. M. Bemus, of Jamestown; *Secretary*, Dr. M. C. O'Brien, of New York; *Treasurer*, Dr. E. D. Ferguson, of Troy; *Members of Council*, Dr. John P. Sharer, of Little Falls; Dr. Charles H. Glidden, of Little Falls; Dr. C. E. Fritts, of Hudson; Dr. L. J. Brooks, of Norwich; Dr. Delancey Rochester, of Buffalo; Dr. C. Ellery Denison, of New York; Dr. Frederick Holme Wiggin, of New York.

(To be Continued.)

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Stated Meeting, October 10, 1898.

W. W. Van Arsdale, M.D., Chairman.

A Case of Primary Infection of the Tongue by Mycosis Leptothriciæ.—Dr. James P. Tuttle, in presenting this case, said that leptothrix growth was supposed to be on the surface, and always present in the mouth, particularly in the tonsils and on the faucial region. Its development in the body of the tongue, however, seemed to be unique. The patient, a young man who had long been under his observation, consulted another physician, during Dr. Tuttle's temporary absence, for a sore on his tongue. This was about a year ago, and the physician in question diagnosticated it as specific disease, and treated it accordingly. He also introduced a hypodermic needle into one of the nodules which were present. On coming under the speaker's observation last February, the patient's general health was broken down, and there were extensive ulceration and nodulation on the tongue. At present, there was only one nodule remaining, on the tip of the tongue. There were previously about ten nodules. It being thought that the case was possibly one of actinomycosis, a microscopical examination was made by Dr. Heitzmann on June 10th. The report on this examination stated that the specimen consisted of greatly hypertrophied stratified epithelium, and greatly hypertrophied papillæ, showing that the growth was beneath the epithelium. Below the latter was seen myxomatous connective tissue, with numerous inflammatory corpuscles. Running throughout the specimen were numerous large and thick leptothrix threads. The blood-vessels were present in small numbers only. Dr. Tuttle said that after excision of the nodules healing was exceedingly slow. Incision and cauterization with nitric acid were also tried, but with no better result. Subsequently it was found that simple incision and cauterization with nitrate of silver accomplished far better results. This was contrary to the opinion of most observers who have treated cases of this kind. The nodules were very painful at times. No other portions of the buccal cavity were infected.

Dr. Lincoln said that he had seen the base of the tongue almost covered with the growth, but the tissue was not so hard as in the case just presented. Fraenkel had claimed that the growth penetrated through the submucous tissue, but, so far as he knew, there was only one such case on record.

Demonstration of Intestinal Anastomosis and Invagination by Means of a New Forceps.—Dr. Ernest La Place, of Philadelphia, presented an instrument that he had invented, and which was intended as a substitute for the Murphy button. The desirability of a substitute for the ingenious device of Murphy was evident from the danger of intestinal obstruction attendant upon its use. The great desideratum was to make intestinal suture easy and safe even in the hands of those of moderate experience. Dr. La Place said that the instrument consisted of a double hæmostatic forceps, each jaw of which was made in the form of an elliptical ring. This ring furnished the desired support for the suture. Having served this purpose, the rings were removed, and this was the distinctive feature of the method. The instrument was made in five different sizes, but for almost all purposes size No. 4 would answer admirably. In the performance of gastro-enterostomy with this instrument, the parts to be approximated were placed side by side, and an incision was made in both the stomach and gut sufficiently large to allow the introduction of the instrument. The forceps being closed and caught, very accurate approximation was secured, and the suturing was rendered very simple and almost mechanical. After suturing, the blades of the instrument were withdrawn separately, like the blades of an obstetric forceps, and one or two sutures then sufficed to close the openings through which the blades had been withdrawn. In an end-to-end anastomosis it was important that the mesenteric borders should be accurately approximated; consequently it was well to insert two stitches before the introduction of the forceps. If the gut did not fit the size of forceps at hand, it would be found more convenient to use four instead of two preliminary stitches. Where it was desired to invaginate the ends, Dr. La Place used a forceps having long and slender "alligator" jaws. The gut was seized and clamped in the jaws of this instrument, and then, the gut having been invaginated, the suture was inserted into it. The slender instrument was then withdrawn and an additional suture or two completed the invagination.

Dr. W. B. Coley said that he had become interested in the method when Dr. La Place demonstrated it on a dog last summer. There would always be a number of surgeons who would find it desirable to use some such mechanical device.

Mechanical Devices will Eventually be Abandoned.—Dr. J. P. Tuttle said that he was of the opinion that as experience in intestinal surgery increased all mechanical devices would be abandoned, and that sufficient support could be obtained by proper tension on the sutures. The dangerous part of the Murphy button was the spring which guarded against leakage during the first few days. Personally he never trusted the Murphy button alone, and Dr. Murphy had told him that when he had time he reinforced it with a Lembert suture. He had under observation five patients, in all of whom Murphy buttons had failed to be discharged, and it seemed to him that the danger of intestinal obstruction in these cases had been greatly exaggerated. One patient had been kept under strict surveillance for four months, and certainly during that time the button had not been passed.

Dr. C. N. Dowd said that he felt that the instrument had a place in intestinal surgery, for anything which facilitated the suturing of the intestine was useful, and in this particular instance the instrument had the additional advantage of making the approximation rapidly and firmly, and not leaving any mechanical device behind.

Dr. McGrau, of Detroit, said that it seemed to him better, if possible, to do away with all mechanical appliances. He had used the Murphy button because of the constant pressure which it exerted, and which guarded against leakage. In some cases, particularly those in which it was desired to make a lateral anastomosis, as in gangrenous hernia, he thought the surgeons might in time go back to a method of elastic suture. This method he had devised and advocated some years ago, and was again employing. In cases in which there was a fistula, and there was no occasion for an immediate passage, such a method seemed to him to present certain advantages.

Dr. H. Lilienthal said that any instrument which made intestinal suture easier was to be commended, and this particular instrument seemed well adapted for the purpose for which it was intended. He was of the opinion that it made a cleaner suture than even the Murphy button, because it did away with the necessity for handling the gut. Suturing in gastro-enterostomy was always difficult, and hence the Murphy button had been hailed with delight. The device exhibited this evening certainly made a quick suture, and left no foreign body to drop into the stomach. The speaker said that he had had considerable experience with the Murphy button, particularly in the large

intestine, and whenever he had been sure that the mucous membrane was inside he had omitted the Lembert suture, and had felt no anxiety on that account. In the use of the instrument of Dr. La Place for an end-to-end ileo-colostomy, a purse-string suture would be needed to pucker up the gut and make it fit the instrument, or else the invaginator should be used.

The Murphy Button Dangerous.—Dr. Coley said that he believed there was a distinct disadvantage in the button, because of its liability to remain behind. The only time he had used it in gastro-enterostomy the button had fallen into the stomach and had been removed later on by another surgeon. The instrument under discussion seemed to him to have its chief sphere of usefulness in gastro-enterostomy. The constant spring pressure of the Murphy button might prove in itself to be a source of danger by causing rapid necrosis of the tissues pressed upon.

Dr. La Place said that his reason for devising the instrument was that he believed that all intestinal suturing was better done when a circular support was used. Dr. Murphy had told him that he had always thought his button would be useful in cases in which rapid operating was imperative, but he believed that when more deliberation was proper it was preferable to perform intestinal suture. He had used his new forceps on the human subject in only two cases—both gastro-enterostomies—and they had proved entirely successful.

Resection of the Liver.—Dr. H. Lilienthal presented a specimen of resected liver, which had been removed by him from a man, forty-four years of age. The patient had been admitted to the medical side of the Mount Sinai Hospital early last August. He had had a certain amount of diarrhœa, was very cachectic, and appeared to be about sixty years of age. There was a hard and not very sensitive tumor above the umbilicus, which was very movable. The surgeons were undecided as to the nature of the tumor, but on abdominal section it proved to be the edge of the left lobe of the liver containing a growth. The abdomen was carefully explored with an entirely negative result. A double temporary ligature of catgut was put around the portion of liver to be resected. Then, while strong traction was made, a tentative cut was made in the liver, and, to his surprise, he found that the vessels were drawn out so that they could be easily ligated as the resection proceeded. This was done, and a large piece of the liver resected without any hemorrhage. A large piece of sterilized rubber tissue was placed on the intestines and a piece of gauze against the raw surface of the liver. These were removed in a few days. The patient's general condition improved markedly, and he returned to his home. Dr. Lilienthal said that he had just heard, however, that the diarrhœa had returned. The pathologist of the hospital reported that the tumor resembled a perithelioma—a tumor such as was found in the suprarenal bodies. The pathologist stated that almost microscopical tumors of the suprarenal body of this nature might cause large metastatic tumors of the liver.

Old Spa in London.—London at one time contained many mineral wells and spas, but all have been drained away into the sewers and have disappeared, with the exception of the Streatham Spa, which still exists on a dairy farm in a village to the east of Streatham High Road. This little known Spa has been in existence for over two hundred years and in the eighteenth century was a fashionable resort. For many years afterward the water was supplied to the London hospitals. A trade is still done in the water, which, as the chemical analysis shows, contains valuable medicinal qualities, but no effort is made to make the spa well known. —*London.*

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, October 4, 1898.

Frederick Peterson, M.D., President.

Double Athetosis from Infantile Cerebral Palsy.—Dr. L. Stieglitz presented a boy, sixteen years of age, the youngest of several children. All the others had been well at birth, but he had been born asphyxiated, although the labor was normal. He did not walk until five years old. At the age of seven years he had scarlatina. The speaker said that after that time the peculiar movements which the boy now exhibited became worse. Soon after birth it was noticed that he moved his arms, legs, and head in an unusual way. After a few years the movements remained at a standstill until the attack of scarlatina. On voluntary motion, the movements were aggravated. His face showed a constant succession of grimaces. The peculiar movements affected the trunk, as well as the upper and lower extremities. The tongue and the eyeballs were free from these movements. The deep reflexes of the arms were lively, as were also the knee jerks, but not more so than in many healthy children. His mental development was very good, but his physical development was rather deficient. Close study of the movements had led the speaker to the opinion that the case was one of double athetosis, due to infantile cerebral palsy, the result of a lesion occurring at the time the child was born asphyxiated. These cases rarely showed any defective mental development. In cases of athetosis the lesion was probably usually in the lenticular nucleus or in the corpus striatum, and it was not surprising that there was no epilepsy or disturbance of the mental development.

Dr. B. Sachs said that, as he recalled similar cases he had seen, he was forced to the conclusion that the one just presented was a most excellent illustration of the combination of the choreiform and the athetoid movements. The probability that they were not cortical was, of course, very great. That there was a direct relation between the typical spastic cases of infantile cerebral palsy and the choreic and choreiform athetoid cases, he verily believed. In a number of cases he had found that peripheral restraint on these unruly members, kept up for months, had had a remarkably good effect.

Dr. Edward D. Fisher said that he now had under observation a boy of the same age, who presented almost exactly the same symptoms, except that they were not quite so severe. It seemed to him that the lesion was very apt to be subcortical. The absence of epileptic conditions did not mean necessarily that the lesion was not a cortical one. The lesion was certainly not an extensive one in the motor tract.

Dr. Joseph Collins said that he agreed entirely in the diagnosis made by Dr. Stieglitz, and he was glad to see such a typical illustration of this group of cases. He did not favor the name "athetosis," nor would he apply it to this case. Taking the case in its entirety, he would look upon it as an example of the choreic form of infantile cerebral palsy. He was inclined to think that the involvement was primarily of the corpus striatum and quite as much so of the optic thalamus, and he based this opinion on the study of the patient's motions, coupled with his spastic gait. The question of the existence of epilepsy in such a case did not seem to him of much importance, for the opinion was growing yearly that idiopathic epilepsy was a cortical disease. He had tried peripheral restraint for months at a time in a case of his own, without observing the slightest benefit, even temporarily.

Dr. Peterson thought the case was undoubtedly one of post-paralytic morbid motion, and he agreed with Dr. Collins that athetosis was not a proper name.

The position was athetoid, but the movement was rather a paramyoclonus. The term "athetosis" should be applied to a slow, vermicular movement.

Dr. C. A. Herter remarked that he thought the term was applied to much more rapid movements, and it did not seem to him that there was a proper pathological basis for such a distinction as that made by the last speaker.

Dr. Collins thought the term "athetosis" should be limited to rhythmical movements, and "choreic" to non-purposive, dancing movements.

Dr. Stieglitz, in closing the discussion, said that in cases of infantile cerebral palsy all the different varieties of movements mentioned were often combined, so that perhaps it would be better to select a name which would cover all of them. When the boy was less excited, the movements were usually less rapid and more vermicular in character. Under ordinary conditions he did not present a spastic facies. The restraint treatment had been advocated by Dr. Hammond when he had first described these cases.

Disseminated Insular Sclerosis.—Dr. Joseph Collins presented a case and spoke as follows:

"The patient who is before you has the symptoms of two rather obscure diseases of the nervous system, and I bring him here that you may assist me in determining the one from which he suffers. He is forty-one years old, married, and by occupation a silk weaver. His personal history is that he has been a user of stimulants and tobacco, the latter rather intemperately. Physically he has led a very active life, and in many directions, particularly fencing and boxing, he has been an amateur athlete. The only point of interest in his family history is, according to his own statement, that a brother younger than he by two years complains of the same trouble in walking that he does. When this patient was thirty-three years old he had a sore on the penis, for which he was treated by Dr. George H. Fox. The latter assured him that this sore was of the nature of a chancroid, and gave him only local treatment. Aside from bubo, which complicated it, this terminated uneventfully in a few weeks, during which time he was treated in private practice by Dr. Fox. Aside from an attack of the grippe, which he had in 1892, he has been quite well. His present illness dates back nearly three years, the initial symptom having been, he thinks, dizziness which was sufficiently great to interfere with his locomotion. Apparently this vertigo was not continuous, because, he says, when it would come he would have to hold something to prevent him from falling. About this time he must have had some trouble with his sight, for it appears that he went to the New York Eye and Ear Infirmary, where he was told that he had locomotor ataxia. The symptoms that next appeared after the dizziness seem to have been what he describes as piercing pains in the calves and the sensation of heavy weights in the thighs. So far as I am able to infer, this constitutes the major part of the patient's complaint until the beginning of the present summer, although it should be said that he has been sexually impotent for two years. The fact that he has been unable to work has, according to his own statement, preyed very much upon his mind and made his symptoms worse. About six months ago his bowels and bladder became functionally derelict, and sometimes the one or the other would discharge its contents without his being aware of it. At this time likewise his speech and handwriting became affected, both in very much the same way as they are now. That is, the enunciation is measured and scanning, the intonation rather high and uniform, while the handwriting is very irregular and ataxic. The patient avers that at about the same time he became uncommonly emotional. He would burst into tears at one time, and at another would grin or smile senselessly. The patient also underwent a psychical as well as physical alteration. He says that he became very forgetful, that he was unable to read understandingly, even the newspapers. This state persists in a very much slighter degree today. For instance, it is quite impossible to elicit the symptoms of his disease except by asking him leading questions, and he forgets easily. At present he is able to concentrate the attention sufficiently to read a newspaper or magazine understandingly.

"His complaint at the present time is of difficulty in locomotion and impaired dextrality. The abnormalities of articulation and the slight psychical aberrations do not concern him sufficiently to lead him to complain of them. The functions of the bladder and bowels are now moderately normal, although occasionally there is some incontinence, especially of urine. He does not complain of pain or of a tight-band sensation about the waist, and the feeling as if there were heavy weights in the thighs has disappeared.

"Examination shows a man of medium height and good muscular development, whose body is the seat of a marked deformity due to a cervico-dorsal scoliosis, which he believes to have been caused by carrying heavy loads in the right hand or on the right shoulder during boyhood. As to the plausibility of such an explanation, each one must determine individually. Both feet show the deformity which is known as pes cavus, 'pied bot' of the French writers. The plantar surface of each foot is very much hollowed beneath the arch, while all the toes are forcibly extended save the first phalanx, which tends to claw the floor. When the patient stands, titubation of the whole body is the most striking phenomenon, and this persists, though to a lesser degree, when he sits. The gait is ataxic and reeling; unlike the ordinary taboid patient, he does not watch his feet while walking. He is rather more inclined to fix some point at or near his objective, and keep his vision on it until he reaches it. Station is extremely uncertain when the feet are approximated, and when he closes the eyes under such circumstances he is pretty sure to fall. The superficial or cutaneous reflexes are present. The tendon jerks of the lower extremity are all absent, while of the upper extremity they are all present. The right palpebral fissure is somewhat larger than the left, and to explain this the patient says that it followed an attack of sore eyes. The pupils are of medium size, slightly asymmetrical, and do not respond to light. When the backgrounds of the eyes are viewed with the ophthalmoscope, the left optic discs appear rather pale—a state of pink atrophy. The right optic nerve is normal. Tactile and thermal sensibilities seem to be normal. There is well-marked analgesia over both legs. The patient has been examined four times only with great care, but the analgesia seemed to be present on each occasion, although varying somewhat in intensity. There is no perversion of sensibility in any other part of the body. Color sense is normal, and the visual fields are unchanged. Senses of smell, taste, and hearing are intact. The trouble with speech and writing has been already sufficiently referred to above.

"Now the question arises: Has this patient Friedreich's disease or has he multiple sclerosis? Perhaps, indeed, this question is not sufficiently comprehensive. Some may be inclined to ask, and legitimately, I think: Can disease of the cerebellum be eliminated on the one hand, and genuine tabes on the other? Personally I am inclined to the opinion that the case is one of disseminated insular sclerosis, although perhaps the evidence pointing to such a diagnosis is not so direct or so convincing as some might wish. If a brief analysis of the symptoms be made, it will at once be seen that there exists a certain number of condi-

tions which are usually considered inimical to the diagnosis of Friedreich's disease. These are, first, the patient's age; second, the sensory disturbances; third, the perversion of function of the uro-genital sphere; and, fourth, loss of the pupillary light reflex and paleness of the temporal side of the optic nerves. On the other hand, all of these, and the other symptoms and physical accompaniments which the patient presents, including the deformities of the trunk and feet, can be explained by the existence of islets of sclerosis in the posterior columns, in the oblongata, and possibly in the cerebellum. If my diagnosis be the correct one, you will agree with me, I think, that the case is one of the most atypical thus far reported."

Dr. Sachs said he was of the opinion that the case was probably a somewhat atypical example of multiple sclerosis. There was, after all, not so much difference between this case of multiple sclerosis and the cases of combined sclerosis that one sees, for he had observed cases of combined sclerosis which at one stage had presented all the symptoms of a spastic paralysis, and subsequently the appearance of typical cases of tabes.

Dr. Fisher said he would agree with the diagnosis of disseminated sclerosis, basing it largely on the mental condition and the character of the speech, particularly the former.

Remarks on the Kidneys in Cases of Cerebral Hemorrhage and Cerebral Softening.—Dr. Christian A. Herter read a paper with this title, in which he gave some of the results of his observations in four hundred and sixty-four autopsies on adults at the Presbyterian Hospital. There were twenty-three cases of cerebral hemorrhage, eleven of cerebral softening, and one of softening and hemorrhage. The three cases of hemorrhage in patients with large kidneys showed the lesions of chronic diffuse nephritis. Six of the patients with small kidneys were males, while all those with large kidneys were females. Of the patients with large kidneys, four had cerebral softening, two thrombosis, and two embolism. The great majority of the medium kidneys were granular. In the cases of cerebral softening the kidneys presented a granular surface and freely stripping capsules. According to this series of observations, cerebral hemorrhage was most frequent among persons with small granular kidneys, and least frequent in those having large kidneys. None of the cases of hemorrhage had smooth kidneys; on the other hand, the majority of the cases of cerebral softening were associated with smooth kidneys and freely stripping capsules. The speaker said that in these cases, when there was a high arterial tension and the urine was of low specific gravity and contained very little albumin and few if any casts, it might be inferred that the kidneys were small and granular, and this condition, in cerebral cases, pointed strongly to hemorrhage.

Dr. Mary Putnam Jacobi said that she had recently seen a case which bore on the relation of uræmia and hemorrhage. The patient was a woman of about forty-five, who had been previously in excellent health. She awoke one morning to find that her vision was extremely dim. The next day she complained of double vision, and a paresis of the abducens appeared, and increased until the muscle became completely paralyzed. The urine on several examinations was found entirely free from albumin, and granular casts were found without the use of the centrifuge. The urine contained a large quantity of urea. The dimness of vision was probably uræmic and the paresis of the abducens due to a very minute hemorrhage in the sixth nerve.

Dr. Herter said it seemed to him probable that in Dr. Jacobi's case the symptoms were due to hemorrhage rather than to œdema, although the latter should always be borne in mind. It was a common thing to find considerable urea during the uræmic state. This was probably to be explained by a gradual accumulation of the urea in the blood, owing to the defective action of the kidneys, and this accounted for the fact that these patients often passed a normal quantity of urea in the urine at the time that the symptoms of acute uræmia were present.

Traumatic Hæmatomyelia, with Reports of Cases, with and without Autopsy.—Drs. Pearce Bailey and P. R. Bolton presented a paper on this subject, from which extracts were read by Dr. Bailey. Speaking of that class of cases in which the hæmatomyelia was consequent upon injury to the spinal column, the authors said that in a large proportion the general destruction of nerve tissue was so severe that hemorrhage could have had but little influence. The blood was poured out first and most profusely into the gray matter, and this central limitation was often very sharply defined. The columnar extension of the blood was usually in the gray matter of the anterior or posterior horns, and the column extended farther upward than downward. Occasionally it might extend into the white matter just behind the middle commissure. These hemorrhages were most commonly found at autopsy between the fifth cervical and the third dorsal segments. The lower dorsal or lumbar cases either did not come to autopsy or did so only after so long a time that it was difficult to draw definite conclusions regarding the pathological findings. The evolution of the lesion in spinal hemorrhage was somewhat obscure. The natural tendency was to absorption of the blood, so that cavity formation was an early consequence of hæmatomyelia. In primary hæmatomyelia, bleeding into the substance of the cord constituted the primary lesion. There were two forms, viz.: (1) the localized; and (2) the disseminated. A force sufficient to rupture the blood-vessels of the spinal cord must affect the nerve elements; hence when bleeding was prominent it was reasonable to expect to find lesions of the nerve cells. In the majority of cases, however, the hemorrhage was the most important factor. The focal form of primary hæmatomyelia was always found in the lower cervical or upper dorsal region. Most of the cases resulted from falls. One form of injury which was especially fertile in producing this lesion was a sudden bending of the neck, such as occurred in the falling of heavy weights on the neck, diving in shallow water, etc. The symptoms differed from those of crushing of the cord, in which the white and gray matters were both implicated. The paralysis was at first flaccid everywhere, and the reflexes were generally either diminished or lost. An injury to any part of the spinal cord above the upper lumbar region, severe enough to cause paraplegia, would usually inhibit or abolish the knee jerk for a time. This was eventually followed by an exaggeration. In the muscles of the lower extremities the paralysis usually changed within three weeks from the flaccid to the spastic type. Immediately after the accident, the paralysis of motion was usually widespread and severe. Sensibility to touch was little, or not at all, modified in primary focal hæmatomyelia; there was, however, analgesia or thermo-anæsthesia, or both. In the cases reported the power to distinguish between heat and cold was lost, while sensibility to pain was unaffected. Compared to the prognosis of secondary cases of injury, the outlook in primary focal hæmatomyelia was favorable. Primary disseminated hæmatomyelia occurred after severe general traumatism. In these cases capillary hemorrhages were found throughout the cerebro-spinal axis. Microscopic examination showed small masses of red blood cells, lying, for the most part, in the gray matter, but also in the white matter. They were not accompanied by other evidence of destruction, and were not artefacts.

Dr. Sachs said there seemed to be every reason to suppose that in many cases which were classified as of secondary origin there must have been effusion, not only into the cord, but around the cord. On this account the question arose as to whether many of the symptoms might not be due to compression of the root fibres. He had seen dissociation of sensation as one of the earliest symptoms of Pott's disease and Pott's paralysis. It need not, therefore, be a symptom of destruction of the gray matter. He recalled a series of cases that were not traumatic in origin, were rather slow of onset, and occurred in adults, and yet presented all the typical symptoms described under the head of hæmatomyelia. The question arose as to whether in the non-traumatic cases the peculiar arrangement of the blood-vessels in the spinal cord might not account for some of the cases in his series. A case now under observation was instructive for the reason that the lower extremities alone were affected, and there was an association of the spastic symptoms with a dissociation of sensation.

Dr. Onuff said that he had seen the case just referred to by the last speaker. The patient stated that soon after a tiresome bicycle ride he noticed that he could not urinate easily. The next morning there was a tingling sensation in the legs, but it was not until five days that a partial paraplegia appeared. At this time incontinence of fæces was also noticed. There was atrophy of the leg, affecting chiefly the adductors of the right thigh. The sensation of pain was exaggerated, so that there was a marked drawing up of the limb when it was pricked. The difficulty of urination was followed by incontinence. The atrophy in the thigh would seem to indicate a higher lesion, while, on the other hand, the initial bladder and rectal symptoms would point to a lower lesion.

Dr. Fraenkel said that he thought the abolition of the reflexes in such cases as those described in the paper was of much diagnostic importance. Enough cases had been reported to show that even in the face of the absence of the reflexes it was possible for a communication to exist between the upper and lower portions of the cord. He regretted that the condition of the deep sensibility had not been recorded in the cases quoted.

Dr. Bailey remarked that in one case in which the reflexes were absent the muscular sensation had returned.

The Red Cross Society and the Nile Campaign.—The *Mayflower*, a stern-paddle steamer one hundred and forty feet long, has been chartered by the National Society for Aid to Sick and Wounded in War (the British Red Cross Society) to convey sick and wounded soldiers from the Soudan between Assouan and Cairo. She carries two medical officers and eight men of the royal army medical corps lent by the government, and two nurses sent out by the society. Reconstructed from a pleasure vessel into a hospital ship, to hold fifty-two sick and wounded and on an emergency seventy-two patients, she is fitted out with the most modern medical and surgical appliances and medical comforts of every description. The sick and wounded will thus enjoy the luxury of being conveyed by river, and will be saved the heat-choking dust and the severe discomforts of the railway journey of about six hundred miles between Assouan and Cairo, which a high authority has described as the worst part of the transit between Khartoum and Cairo. The ship was inspected by the general officer commanding, and she started on September 6th on her first voyage of mercy, leaving Assouan for Cairo on September 15th, with twenty-eight wounded and twenty-four sick.

Correspondence.

OUR LONDON LETTER.

(From our Regular Correspondent.)

SANITARY CONGRESS—SIR J. FAYRER, K.C.S.I., ON VACCINATION—RELATION OF PROFESSION TO THE STATE—TENEMENT DWELLINGS—FOOD PRESERVATIVES—THE BIRTH-RATE—POLLUTION OF STREAMS—INEBRIATE HOMES—TYPHOID—DEATHS—OPENING OF THE SESSION—VIRCHOW'S LECTURE—DINNER TO VIRCHOW—INTRODUCTORY LECTURES—ERRORS IN DIAGNOSIS—THE PRINCE'S SURGEONS HONORED.

London, September 30, 1898.

The seventeenth congress of the Sanitary Institute opened at Birmingham on Tuesday, and the proceedings occupy the week. Some eight hundred members attended. The presidential address of Sir Joseph Fayrer has attracted attention outside the circles interested in sanitation and medicine, as it was anticipated that he would deal with the subject of vaccination in view of the recent act. Sir Joseph is held in honor not only by the profession, but by the public, his long and distinguished services having often brought his name forward in the most favorable manner. He spoke of the immense value of preventive medicine and sanitary measures, and pointed out how well the public health is cared for in the present day compared with the past. Nevertheless, he added the warning that diligence could never be relaxed. Sudden invasions of cholera and other epidemics were a sufficient proof of that. The reduction in the prevalence of small-pox he found was greater than had been attained in any other disease, and those theories which ignored the effects of vaccination as a preventive must necessarily be rejected until a better explanation of the cause of the diminished incidence and mortality could be offered. Since the passing of the first vaccination act in 1841, the death rate had fallen from five hundred and seventy-six to twenty per million in 1891–95. All the evidence that is forthcoming, he said, shows there is no doubt of the value of vaccination. As to the methods of securing that every one should submit to it, that is for the State to determine. That the acts passed up to the present time are inadequate is shown by the large numbers who are unvaccinated. It was to be remembered, he added, that the Royal College of Physicians had recently repeated their unaltered conviction that the only known preventive of small-pox is vaccination; and that conclusion is endorsed by the whole medical profession.

The question of relations of the profession to the State was brought before the congress by Dr. McVail, who said he had been mainly moved to take up this topic by recent criticisms and incidents. Thus it had been said that medical men were sulking because their collective views as to legislation had been pushed aside. Not so. Medical men advise the State regarding the prevention of disease and the preservation and improvement of the public health. As to vaccination, the object is and should be to vaccinate—not to punish, not to fine, not to display temper. Medical men have done their duty, and there must leave the matter. The responsibility is with the legislators. Isolation hospitals for the treatment of small-pox cases should be recommended to be established in every district.

The subject of tenement dwellings was brought before the congress by Dr. Sykes, who remarked that in St. Luke's, a poor and crowded London district, twenty-one per cent. of the population were living in one room; while in Lewisham (a suburb), only five per cent. were so living. The weight of skilled advice is decidedly against permitting one-room tenements to

form part of any improvement scheme, though it is also against retaining the present rule-of-thumb calculation as to the amount of air a bedroom must contain. On the other hand, open-air staircases are strongly recommended for collective dwellings, as infection among children has so often been traced to the use of a common staircase in such buildings.

Yesterday Dr. Alfred Hill, M.O.H. for Birmingham, presided over the section of sanitary science and preventive medicine, and in his address dealt with the question of food preservatives, which, he held, has hitherto received less attention than it deserves. He would prohibit the use of all chemical preservatives, as they enable foods to be sold as fresh which are stale and have often undergone changes making them harmful or even poisonous. Whatever the minor differences of physiological experimenters, they admit that, though small doses may exert no perceptible influence on the health, we cannot say the same of large doses. He moved that the council of the institute be recommended to represent to the proper authorities that scientific investigations be forthwith set on foot on this matter and that a court of reference be established. This motion was seconded by Mr. Vincent Jackson, and carried.

Dr. Dawson Williams then gave an address on "The Decline in the Birth Rate." He said that at the census in 1891 it was found that the increase of the population of England and Wales only amounted to a little over 3,000,000, which was less by 750,000 than had been estimated. The births were 290,000 below expectation, while emigration was 412,000 above. The death rate was lower, so that the natural increase ought to have been larger. Both urban and rural populations had increased, but not in the ratio estimated. The increase had been much less in the latter than the former. There were more children born in towns than in the country in proportion to population, but the urban infant mortality was so much higher that the town excess did not maintain a corresponding excess in proportion to the total population.

Dr. Sims Woodhead presided in the section of physics, chemistry, and biology. In his address he reviewed some of the most important advances in sanitary science in recent years, and pointed out the importance of what had gone before our own time and on which we have builded. Had there been no Jenner, he said there could have been no Pasteur, no Lister, no Koch. We should have been in a sorry way had it not been for our predecessors.

Mr. Christopher Childs contributed an interesting paper on the "Prevention of Pollution of our Streams and Rivers"—an evil which the act of 1876 has failed to remove. He urged the regular and constant inspection and supervision of all parts of the water supply from source to distribution. He was astonished that this was not included in the proposals made last session. Chemical and bacteriological examinations could be of great service, for they could give indication of pollution that inspection failed to detect. But if relied upon alone, they gave a sense of false security; for they could detect pollution only after it had taken place. It was of the greatest importance that inspection should be enforced, and early legislation should include this as the most urgent requirement.

The report of the government inspection of retreats for inebriates for 1897–98 looks rather out of date, as last session the act for compulsory detention of drunkards was passed. The report dwells upon the need for compulsion, and so far is forestalled by the legislature. Among the voluntary institutions that at Rickmansworth is the chief, and 475 cases have been treated there. Of these patients, 241 were between thirty and forty years old, and 249 were married. Over 400 were well educated, 112 were gentlemen of no occupation, and 363 belonged to the professional and mercantile classes. The after-history of 400 has been traced, and 161 are reported as "doing well," but 176 "not improved." The periods for which these patients agreed to enter were three, six, and twelve months. The shorter periods are not to be recommended. Indeed, the opinion of those who have watched the various homes seems to be that twelve months should be the minimum.

Typhoid has broken out in some villages near Plymouth. In one there are twenty-three cases, in another fourteen, and others are becoming infected. They are all in the district from which Plymouth draws much of its supply of dairy produce. Defective drainage, or rather want of drainage, is supposed to be the cause, with the consequent pollution of the wells and streams from which the inhabitants draw their water. Five years ago the district council was informed of the insanitary state of the area, but nothing seems to have been done. The M.O.H. describes the water as "grossly polluted," and it is said to have a disgusting smell. Accumulations of offensive matter abound round the villages.

Typhoid was prevalent at Rowley Regis in Staffordshire in the first half of the year—the M. O. H. reporting ninety-eight cases. Defective drainage and ashpits with pollution of water were found. No less than twenty-two wells, supplying sixty-two houses, have been condemned as supplying water unfit for domestic purposes: but I have not heard that the government local board has moved in the matter.

In the London school board's industrial school at Brentwood fifty-six boys out of one hundred suffered from heat stroke in the late hot weather, and there were two deaths. The medical officer considers the ventilation and overcrowding of the building to blame. There were also three cases of typhoid and one of diphtheria. A report has been sent to the board.

The Belfast outbreak persists. There were fewer cases in the last week, indeed, but the outlook is discouraging. The general death rate has gone up to 30.6, and the mortality from zymotic diseases to 12.2.

Dr. G. Hart, of Bolton, died on Tuesday, apparently from the effects of an insect bite or sting near the eye. Cellulitis, septicæmia, and pneumonia developed. His medical neighbors did all they could, and streptococcic serum was tried, but he succumbed. He was only thirty-eight.

Dr. William Clarke, when acting as a *locum tenens*, died on the 15th from the effects of strychnine accidentally included in a tonic draught he took as a "pick-me-up."

Surg.-Maj. J. McDermott committed suicide with prussic acid "while temporarily insane," as the jury found.

LONDON, October 7, 1898.

The winter session was opened in due course, and we are now settling down to work at our several schools after attending and discussing the merits of our introductory lectures or other ceremonies. The most remarkable of these, as I mentioned must be the case, was that of Charing Cross Hospital, Professor Virchow having undertaken to deliver the address there in memory of the late Professor Huxley. Lord Lister presided on this occasion, and a crowded audience received the lecturer with the greatest enthusiasm. Huxley was once a pupil at Charing Cross, and this school has established the "Huxley lecture"—the present being the second of the series and serving for "the introductory."

Professor Virchow opened his address by an expression of his admiration for the illustrious man commemorated and a compliment to English biologists. He went on to say that an initial difficulty had been

caused by the tendency to set the search after the unity of life in the forefront of biologists' inquiries, whence arose the discarded doctrine of vital force. No progress, he said, could be made until the idea of highly organized living things as units had been set aside, and it was recognized that they were organisms, each constituent part of which had its special life. Analysis of animals and plants alike brings us to the cells—the factors of existence. The discovery of the development of complete beings from the ova of animals and the germ cells of plants bridged the gap between isolated living cells and complete organisms, and enabled the study of the former to elucidate the life of the latter. In a medical school, where teaching is concerned almost entirely with human beings, this sentence should be writ large: "The organism is not an individual, but a social mechanism." To these he added as corollaries: (*a*) that every living organism, like every organ and tissue, contains cells; (*b*) that the cells are composed of organic chemical substances, which are not themselves alive.

The notion of free cell formation, which really implied spontaneous generation, when driven out of the domain of zoölogy, found a temporary refuge in that of pathology. Virchow said he was himself taught the discontinuity of pathological growths—a view which would lead back to the origin of living from non-living matter—and then he related how enlightenment came to him in this matter. When clinical assistant in the eye department of the Berlin Hospital, he was impressed by the fact that keratitis and corneal wounds healed without plastic exudation. This led him to study inflammation in other non-vascular structures, such as articular cartilage and the intima of the larger vessels, and in none was plastic exudation found, but in all changes of tissue cells. Turning then to vascular organs, he proved that the presence of cells in inflammatory exudates was not the result of exudation, but of multiplication of pre-existing cells. He next extended this to the growth in thickness of long bones. Eventually the biological doctrine of *omnis cellula e cellula* was extended to pathological processes; every new formation presupposes a matrix or tissue from which its cells arise and the stamp of which they bear.

Herein is the key to the mystery of heredity. The cells are the factors of inherited properties, being the sources of the germs of new tissues. But as to the hereditariness of any given disease, the most elaborate doctrines may at once break down before the discovery of the real cause, as happened in regard to leprosy, favus, and scabies.

In heterotopia fragments of tissues or organs are found in positions not normal to them—it is a kind of transplantation. The misplaced tissues do not develop new properties, but merely continue their normal powers of growth. But to attribute all tumor formation to this cause would carry the idea beyond its scientific limits.

Turning to parasitism, the illustrious lecturer remarked that the old notion, that disease in general was a parasite, pushed to a logical conclusion, implied that each independent part of an organism might act as a parasite toward the others. The true conception of a parasite implies harmfulness to the host. The larger have been longest known, but the minutest produce the principal infectious diseases. But here three points must be considered: (1) The necessity for distinguishing between the cause and the nature of these diseases, the latter being determined by the reaction of the tissues and organs to the microbes. (2) The relation between the smaller parasites and the diseases they excite. This may be summed up by the term infection; but to assume that all infections are due to bacteria would be to go beyond our present knowledge and would probably retard further progress. (3) The mode of action. It is only the larger parasites whose chief effect is devouring parts of their hosts; the smaller act mainly by secreting virulent poisons.

The cellular pathology further entails the principle of destroying or removing the focus of disease. Again, the cells, like bacteria, secrete juices which influence the rest of the organism. Hence arises the therapeutic use of extracts of organs.

In conclusion, Professor Virchow mentioned the qualifications of a physician and a naturalist, and wished success to the school he addressed.

On Wednesday Professor Virchow was entertained at a dinner given in his honor, at which some two hundred and fifty enthusiastic admirers and disciples were present. Lord Lister presided, and, after the usual toasts had been honored, proposed that of the evening, "Our honored and beloved master, Professor Virchow." His lordship said many of those present had had the advantage of the professor's personal instruction, and all were his disciples. Only a few in the company could remember the effect produced when the professor established his fertile doctrine, and no part of the great discourse they heard on Monday had a deeper interest than that in which the lecturer noticed in too few words the observations which led him into the true path of cellular pathology. In this science Virchow reigned supreme, and probably no living man was better versed in the history of medicine. He was also an acknowledged authority on anthropology and a distinguished antiquary. From early life he had been interested in politics, and his voice was always heard in defence of liberty, truth, and righteousness. Rare as it is for a man to excel in so many departments, it was rarer still and seemed almost miraculous that any one should retain his intellectual and physical powers as Virchow had done. The whole medical profession joined in wishing that his wonderful powers, activity, and usefulness may long be preserved.

Professor Virchow, on rising to acknowledge the toast, was received with enthusiastic cheering. He spoke in English, with the same exactitude as in his lecture, and of course with the same slight German accent. He said he felt no stranger among them. Long before he had the privilege of friendly relations with many of the best sons of England, he had admired the country and people who amid political storms had preserved and developed the principles of civil and religious liberty—a glorious example for all mankind. He then praised Huxley for his work in anthropology and ethnology, so great in the eyes of German savants as to immortalize his name among them, and they will not cease to follow in his footsteps. May this, he said, further consolidate the union of German and British science. He proposed, in conclusion, the medical corporations of Great Britain and Ireland—a toast responded to by Sir S. Wilkes, Sir W. MacCormack, and Professor Chiene.

The other introductories were by no means devoid of general interest, although none of them could pretend to compete with Virchow's. Some were of special value to their particular audiences, and all had points worth considering, did your space permit. There was again an interchange between some schools. Thus Professor Foster went to Birmingham and discoursed on the nature and function of a university—a very timely topic, now the Midland City is proposing to establish one for itself. Dr. Saundby went to Cardiff and spoke on the allied subject of modern universities. Dr. Cullingworth went to Leeds, of which he is a native, and urged on his audience the great importance of personal character in the medical profession. Here in London the lecturers also chose subjects for the most part which appeal to the practitioner

as well as the student. At St. George's Mr. Turner showed the value of medical work to the community and denounced its inadequate pecuniary rewards. At University College Mr. Spokes, the dental surgeon, broached similar views in an address on the present status of the profession. At St. Mary's Dr. Caley struck what some call a higher note in dilating on prevention in medicine and urging the need for a forward movement, and showing that the community ought to appreciate this need. At the Middlesex Dr. Voelcker, while not ignoring the outside world, gave more direct advice to the freshmen—good advice, too, in which he warned them to be careful of their conversation in lay circles, avoiding all random talk which might cause them to be accused of callousness or behavior unworthy of a gentleman. This they owed in loyalty to their hospital and the high aims of their chosen profession. At the Women's Medical School Dr. Walter Carr took for his subject "Fashion in Medicine"—very appropriate to his audience, say some.

The other schools dispensed with the lecture, but not with the festival dinners—details of which would be of little interest to you, although most of those present express satisfaction with their entertainment.

From time to time some error in diagnosis affords the newspapers an opportunity for a sensational paragraph. They seem to expect infallibility from doctors, but from others the plea of human fallibility is readily accepted. A little time ago mistakes at two of our hospitals afforded the text of much declamation. The errors were regrettable, and it is well that the officers of these institutions should feel their responsibilities. This week a case has occurred which is unusual, from the fact that two doctors made the same mistake of thinking a man who had fallen from a tramcar was only drunk, whereas he had sustained a fracture of the skull. At the inquest he was proved to have been perfectly sober, and the history of the accident should surely have suggested the possibility of serious head injury.

The notification act is responsible for many errors, as it requires a positive diagnosis of the kind of infectious disease at a stage when the most careful man cannot be sure. A doctor lately certified a case as scarlet fever. The medical officer of health declared it was influenza. It was referred to the district council, which holds the purse strings. It refused the fee, and left the doctor to settle the dispute with the medical officer of health.

The Queen has given distinctions in the Royal Victorian Order to the surgeons who have been attending the Prince of Wales: Sir W. MacCormack and Sir F. Laking, to be knights commander; Mr. Fripp and Fleet-Surgeon Delmege, to be members of the fourth class.

TYPHOID FEVER AND FLIES.

To the Editor of the Medical Record.

Sir: In your issue of October 8th, "A. H. S.," on page 537, delivers himself of his amazement at the stupidity of old army men (surgeons) in regard to the use of lime. Let me reply by first saying that the United States government does not issue chloride of lime in large quantities, or in wooden casks, in which it soon loses its chlorine; second, that when a solution of chloride of lime is put into a sink five feet wide, twelve feet long, and from eight to twelve feet deep, which four hundred men are using every day and night, much is required, and chlorine escapes rapidly, and the flies are not kept away all the time from the sink or its neighborhood with any ordinary quantity. The government furnished a great deal of lime in barrels, and it was in use. The sink problem and the country-privy problem are the same. I would respectfully ask "A. H. S." to refer to my remarks on this subject in the issue for October 8th of the *Journal of the American Medical Association*.

R. S. Sutton, M.D.

516 Market Street, Pittsburg, Pa.,
October 10, 1898.

THE MIDWIFE OR THE WOMAN DOCTOR.

To the Editor of the Medical Record.

Sir: The article in the Medical Record of October 1st, entitled "Some Remarks on the Midwifery Question," has been read, marked, and inwardly digested, with much interest and not a little quiet chuckling and amusement, by some of those to whom the author refers as "none other than the woman doctor or what polite usage calls the lady physician."

In spite of the author's repeated statements that the female physician is neither wanted nor tolerated by the great mass of women, and that the medical profession at large is not only not opposed to her, but (worst rub of all) mildly indifferent to her and to her success or lack of it, he cannot, in fact he does not, attempt to hide his great fear that there is a place where the ubiquitous woman doctor can fill a long-felt need, and that is at the bedside of her parturient sister. Not only among the lowly and ignorant, but in the higher classes of society to-day the feeling is strong and growing yet stronger that this sphere of work belongs pre-eminently to women—not to the often ignorant, unskilful, dirty midwife, whose sole claim to ability lies in the fact that she has seen half a dozen or more confinements; but to her cleanly, thoughtful, well-educated, and possibly really skilful sister, the woman doctor.

Curiously enough, as I wrote the above, a Swede, a cable conductor, came in to engage me to attend his wife, who had a difficult time with her last labor. I quote his words. "She has always had a midwife before, but the midwives here are not as at home in Sweden. They have not studied and they are dirty. Of course I could have my own club physician, but you know how it is, doctor—they want a woman at such times."

The author's openly expressed fear, that should the midwife come to be no more the woman doctor would take her place, is certainly not without foundation. Indeed, the care which the city has taken to protect its poor, by paying a proper fee to such institutions as will guarantee to send a reputable physician to attend poor women in their confinements, has already done much to oust the midwife. Rarely, indeed, does it happen that a woman once attended by a lady, who is also a physician, returns to her midwife or to a male physician. Women, even the most ignorant, are quick to recognize the woman doctor's superiority to a midwife and even to a man.

No, the woman doctor is not quite so quick to take fright as is her inexperienced "stepsister," and when she is alarmed she does, indeed, send for a sister-practitioner; and, strange to say, kindly nature helps these twain as freely and as impartially as she would the stronger sex, and all the hitherto unenlightened neighborhood stand and wonder, and, "wondering, say, can such things be?" Two women, or even one, doing versions, applying instruments, repairing perineums, and all as deftly, as neatly, as skilfully as could a man—a man doctor! And all the female constituency of that district forthwith register a vow that "next time" (if there be a next) they will have a woman doctor, in place of young Dr. Hurryall, who was in such haste that he wouldn't give their pains time (and beside left such a mess), or old Dr. Slowcome, who made them suffer two days and three nights because he

had had fifteen hundred cases and had never had occasion to use instruments.

Yet is the worst to come. Who knows the baby better than the doctor who brought it into the world? Who can best minister to that baby's special form of colic or diarrhœa or what not, if not the doctor who "knows her constitution"? The husband may indeed put in a plea for his own doctor, but agrees with his good wife that the baby is hers, not his, and he leaves it to her; so we become that baby's doctor. And when the mother begins to feel the results of some previous labor, who so likely to help her as her lady doctor? And when, some day, John, her goodman, worries her to death with his cough, for which he refuses to consult a doctor, it is barely within the limits of possibility that the lady doctor may be asked to leave something for John, and lo! John is healed and half converted.

"Of course," says our author, "we shall be found on the side of right and justice;" but if right and justice be on the side of the woman doctor, who, even as he, has given the best years of her life to preparing for her work, we must make an exception—we must first look after her poor, downtrodden, "stepsister," the midwife, whose lack of training, of ordinary skill, and even of cleanliness puts patients into our hands and money into our pockets. Let us be just, but, first of all, let us be just to ourselves. "The neighboring doctor and the midwife have a perfect understanding." True! The woman doctor and the midwife have nothing in common.

"By thus suppressing the midwife, we open wide the gate to our professional sisters, and flood the whole country with female doctors." Pardon! However gladly women in the past might have been to have these gates thrown open wide by chivalrously inclined gentlemen, the women of the present hold the key and can open for themselves. That key is knowledge, and knowledge is power.

I cannot trace the mental connection, but something in the article led me to look up again Edward Sill's satire on our narrow little human lives. You will remember that of the "five mites of monads who dwelt in a round drop"—

> "One was a barren-minded monad, called
> A Positivist; and he knew positively."

And again of the five—

> "The last was a strong-minded monadess,
> Who dashed amid the infusoria,
> Danced high and low, and wildly spun and dove,
> 'Till the dizzy others held their breath to see.
>
> "But while they led their wondrous little lives
> Æonian moments had gone wheeling by;
> The burning drop had shrunk with fearful speed:
> A glistening film—'twas gone; the leaf was dry."

ELIZABETH JARRETT, M.D.

159 WEST FORTY-EIGHTH STREET.

Crepitant Râles are caused by agitation of fluid in the air cells or in the finest extremities of the bronchial tubes; or, to adopt a view now held by many, by the forcing open during inspiration of the air cells agglutinated together by exuded lymph.—DACOSTA.

There are several views as to the production of these sounds; that they are due to the bubbling of air through a liquid in the pulmonary vesicles and terminal bronchioles; that at the end of expiration, a viscid secretion glues the walls of the vesicles together, and their separation on inspiration gives rise to the crackling noise; and that they are produced in the pleura independently of the pulmonary parenchyma.—LOOMIS.

Whether this is a fine pleural crepitus or is produced in the air cells and finer bronchi is an open question.—OSLER.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending October 15, 1898:

	Cases.	Deaths.
Tuberculosis	177	133
Typhoid fever	117	25
Scarlet fever	65	4
Measles	42	0
Diphtheria	118	18
Cerebro-spinal meningitis	0	6
Laryngeal diphtheria (croup)	8	2
Chicken-pox	13	0

Etiology of Epilepsy.—The general causes assigned for epilepsy are much the same as those for idiocy. That the malady is frequently transmitted by heredity is clearly proved by Dr. Féré. He observes that when the marriages of epileptics have an average fecundity, scarcely one-fifth of the children are healthy. Epilepsy seems to be propagated more directly than are other neuropathic diseases. This is what is called similar heredity. Eccheverria found that out of a total of five hundred and seventy-two epileptics, thirty-nine per cent. had an hereditary taint received directly from the parents. In many cases epilepsy appears in the collateral lines, and sometimes passes over the son or daughter to affect the grandchild. Sometimes, on the other hand, the neurosis takes another form, such as idiocy, insanity, hysteria, hemicrania; or the epilepsy is combined with these affections. Perhaps as many as one-fourth of all idiots are epileptics, or have fits now and then. Drunkenness in the parents is found to be a common cause. Eccheverria found it in seventeen per cent. of his cases, but Wildermuth in less than two per cent. Excess in alcohol may originate epilepsy or bring it back after the disease seems to be cured. The craving for intoxicants may itself be an inherited disease, apt to propagate its like or some other form of neuropathy. Epilepsy is occasionally caused by injuries to the head or by cerebral tumors. Brown-Séquard has proved by experiment that guinea-pigs may be rendered epileptic by lesions of the sciatic nerve or of the spinal cord, and that this epileptic proclivity was transmitted to their descendants, and Luciani has observed the hereditary transmission of epilepsy in animals in which the disease was provoked by irritative lesions of the brain.—IRELAND, "Mental Affections of Children."

Sunstroke.—The State board of health of Pennsylvania has issued for distribution a long circular on "Precautions Against Sunstroke," in which it sets forth the cause, symptoms, and treatment (emergency), and the necessary precautions against sunstroke.

Diabetic Foods.—Some years ago Dr. Charles Harrington, of the Harvard school, analyzed all the so-called diabetic foods to be purchased. They were advertised to be practically free from starch. The examination showed that they contained from twenty-one up to seventy-one per cent. of starch, and that it would be far safer to use ordinary bread.

A New Safety Match.—A match which contains no trace of yellow phosphorus and in no way affects the health of the workers, yet is capable of being ignited by friction on any ordinary surface. The *Daily Chronicle*, London, of a recent date, was the first to report the good news of this important discovery. The inventors are two Germans, Mr. S. A. Kohlmann-Ro-

senthal and Dr. S. J. von Romoch. These chemists and experts have been strenuously working for the past three years, partly in Berlin but more continuously in London. The doctor, indeed, has almost lived in his laboratory, and every known explosive has been tested in search for the right thing. Success has been achieved in England, and the match is being brought out there. The assayers of the Bank of England and the mint have given a certificate, testifying that the matches will ignite freely by friction and contain no trace of yellow phosphorus. The invention which promises to abolish the deadly necrosis so prevalent in match factories is said to be likely to bring economical advantages.

Drunkenness in the Navy.—With reference to certain statements recently made in a temperance journal called *The Voice*, I have questioned a number of army officers as to the use and abuse of alcohol in the service and they, without exception, affirm the "good habits" of officers and men. The Rev. Mr. Robinson, the chaplain of this ship (United States hospital ship *Relief*) tells me that in twenty-two years of service he can recall but one case of an officer being intoxicated on duty, and says it is a pleasure to be able to attest the self-restraint exhibited by our officers in all such matters both on and off duty.—*Special Correspondent, London Lancet.*

In Ireland they put up signal boards for the benefit of cyclists, "This hill is dangerous," at the bottom of the hill.

Sterility.—Dr. Vedder, of Christiania, Sweden, reports the results of examination of three hundred and ten married women who had never been pregnant though married at least one year. In fifty of these cases he was able to examine the husband also. He draws the conclusion that in seventy per cent. of these cases the husband is to blame for the sterility, either through impotence or through infecting his wife with gonorrhœa.—*Norsk Magazin for Lägevidenskaben.*

Health Reports.—The following statistics concerning yellow fever and small-pox have been received in the office of the supervising surgeon-general of the Marine Hospital service during the week ending October 15, 1898:

YELLOW FEVER—UNITED STATES.

		Cases.	Deaths.
Louisiana,	Alexandria, October 6th	(Reported).	
	Amite City, October 13th	(Reported).	
	Baton Rouge, To October 6th	22	2
	Bowie, October 6th	1	
	Delogny, October 1st	1	
	Franklin, October 6th	14	
	Franklin, To October 6th	376	7
	Franklin, October 7th	34	
	Franklin, October 8th	19	1
	Franklin, October 9th	20	
	Franklin, October 10th	28	
	Franklin, October 11th	29	
	Franklin, October 12th	19	
	Franklin, October 13th	26	
	Harvey's Canal, To October 6th	14	3
	Houma, To October 8th	8	1
	Jefferson Parish, To September 20th	5	
	Lake Charles, October 10th	(Reported).	
	Lobdell, October 12th	(Reported).	
	New Orleans, To October 1st	33	
	New Orleans, To October 8th	62	
	Plaquemine, October 1st	1	1
	Plaquemine, To October 8th	3	
	St. James Parish, October 2d	1	
	Wilson, To October 1st	50	1
	Wilson, To October 8th	247	4
Mississippi,	Bay St. Louis, October 11th	9	
	Canton, October 10th	4	
	Clinton, To October 8th	2	
	Crystal Springs, October 11th	3	
	Edwards, vicinity, To October 6th	6	
	Edwards, vicinity, October 7th	1	
	Fayette, October 6th	1	
	Fayette, October 7th	2	
	Fayette, October 8th	2	
	Harriston, October 6th	4	
	Harriston, October 6th	42	4
	Harriston, October 7th	2	
	Harriston, October 8th	1	
	Harriston, October 9th	9	
	Harriston, October 10th	14	
	Harriston, October 11th	13	2
	Harriston, October 12th	11	
	Harriston, October 13th	16	
	Hattiesburg, October 8th	2	1
	Hattiesburg, October 9th	10	
	Hattiesburg, October 10th to 13th	6	
	Hermanville, To October 6th	2	
	Hermanville, October 11th	1	
	Jackson, October 6th	6	
	Jackson, To October 6th	41	2
	Jackson, October 7th	6	
	Jackson, October 8th	10	
	Jackson, October 9th	6	
	Jackson, October 10th	3	
	Jackson, October 11th	11	
	Jackson, October 12th	11	
	Jackson, October 13th	14	1
	Natchez, October 7th	2	
	Natchez, October 13th	6	
	Orwood, To October 6th	79	4
	Orwood, October 10th	6	1
	Oxford, To October 6th	52	6
	Oxford, October 7th	..	1
	Oxford, October 8th	2	1
	Oxford, October 9th	1	1
	Oxford, October 10th	1	
	Oxford, To October 8th	470	36
	Oxford, October 11th	10	
	Oxford, October 12th	3	1
	Oxford, October 13th	..	1
	Poplarville, October 9th	2	
	Poplarville, October 11th	7	
	Port Gibson, October 6th	1	1
	Ridgeland, October 8th	3	
	Ridgeland, October 10th	1	
	Ridgeland, October 11th	1	
	Starkville, October 6th	3	
	Starkville, October 7th	1	
	Starkville, October 8th	1	
	Starkville, October 13th	1	
	Taylors, October 6th	4	
	Taylors, To October 6th	100	11
	Taylors, October 7th	3	1
	Taylors, October 8th	1	
	Taylors, October 12th	..	1
	Waterford, To October 6th	2	
	Water Valley, To October 6th	10	
	Waveland, October 10th	8	
	Waveland, October 11th	9	
	Waveland, October 12th	2	
	Waveland, October 13th	2	
	Woodville, To October 6th	1	

YELLOW FEVER—FOREIGN.

Cuba, Gibara, September 1st to 15th		4	
Mexico, Tampico, September 24th to October 2d		..	11
	Vera Cruz, September 22d to 29th	..	10

SMALL-POX—UNITED STATES.

Ohio,	Cincinnati, October 8th	3	
	Dayton, October 8th	1	
	Sandusky, October 8th	1	
	St. Mary's, October 8th	2	
	Uniopolis, October 8th	1	
	New Paris, October 8th	1	
	Oberlin, October 8th	1	
	Wapokonata, October 8th	20	
Pennsylvania, Chester County, near Spring City, October 7th		7	
Pennsylvania, Bradford County, October 7th		1	

SMALL-POX—FOREIGN.

Brazil, Bahia, August 27th to September 3d		23	3
	Bahia, September 3d to 10th	28	4
	Bahia, September 10th to 17th	29	5
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Gibraltar, September 10th to 18th		1	
Russia, Odessa, September 17th to 24th		2	1
	Warsaw, September 10th to 17th	..	7

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

A LABORATORY GUIDE IN URINALYSIS AND TOXICOLOGY. By Dr. R. A. Witthaus. Fourth Edition. 8vo, 111 pages. William Wood and Company, New York.

MANUAL OF CHEMISTRY. By Dr. W. Simon. Sixth Edition. 8vo, 536 pages. Illustrated. Lea Brothers & Co., Philadelphia.

PRACTICAL DIAGNOSIS. Third Edition. By Dr. H. A. Hale. 8vo, 624 pages. Illustrated. Lea Brothers & Co., Philadelphia.

PRINCIPLES AND PRACTICE OF HYDROTHERAPY. By Dr. Simon Baruch. 8vo, 435 pages. Illustrated. William Wood and Company, New York.

REFRACTION OF THE EYE. By G. Hartridge, F.R.C.S. Ninth Edition. 8vo, 267 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia. Price, $1.50.

DISEASES OF THE BREAST. By A. M. Sheild, M.B. 8vo, 509 pages. Illustrated. The Macmillan Company, New York. $5.00.

TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS. Vol. XIII. 8vo, 482 pages. Illustrated.

Medical Record

A Weekly Journal of Medicine and Surgery

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Original Articles.

SOME OBSERVATIONS ON THE CHEMICAL REACTION OF HUMAN URINE.

BY HEINRICH STERN, PH.D., M.D.,

NEW YORK.

Acidimetry and Alkalimetry of the Urine.—Clinical medicine does not sufficiently take into account the degree of urinary acidity or alkalinity. Physicians and chemists, in the vast majority of instances, merely ascertain the chemical reaction of the urine without attempting to estimate or determine the same. This habitual omission I ascribe to two reasons:

(*a*) The lack of a recognized general standard, the empirical unit of acidity or alkalinity.

(*b*) The incomplete knowledge as to the significance of the variations of urinary acidity or alkalinity.

Oxalic acid has been made use of as a standard of comparison for urinary acidity. Generally the acidity of the twenty-four hours' urine has been thus calculated. This acidimetric procedure, though, not only is impracticable to some extent, but does not seem to serve any specific clinical purposes. An acidity of the twenty-four hours' urine equivalent to, say, 1.5 gm. of oxalic acid, does not tell me anything. What I wish to ascertain are the more minute variations in the chemical reaction of the urine at each time it is voided. To accomplish a more rational study of urinary acidity, this should not be expressed to be equivalent to so many grams of oxalic acid, but to so many degrees of an empirical scale. Then the chemical reaction of urine becomes at once the subject of a more general consideration. Furthermore, we should have a standard and scale for the determination of urinary alkalinity.

I keenly felt the want of such standards when I first engaged in experimental work upon the chemical reaction of urine. I found it impossible to accomplish anything of practical value without the assistance of empirical units of acidity and alkalinity and the respective scales.

To facilitate acidimetry I employ a decinormal solution of potassium hydrate. The $\frac{n}{10}$ KHO solution is a most convenient agent to effect a more exact neutralization of normal urine; I prefer it to the NaHO solution of equal strength, on account of its lesser foaming. A $\frac{n}{10}$ solution of one of these alkalies, in a given volume, comes nearer to neutralizing an equal volume of normal urine than any other standard solution.

The neutralization of 1 c.c. of urine by 1 c.c. $\frac{n}{10}$ KHO sol. is my acidimetric unit. I always employ 10 c.c. of urine when determining its degree of acidity. If this amount is neutralized by 10 c.c. of the $\frac{n}{10}$ KHO sol., then the degree of acidity is 1. If the urine (10 c.c.) loses its acid reaction after the addition of 5.2 c.c. of the alkali solution, its degree of acidity amounted to 0.52; if 1 c.c. of the latter agent is sufficient to neutralize it, its acidity was 0.1; and if 12.3 c.c. of the KHO sol. is necessary to effect the urine's neutralization, its acidity amounted to 1.23 degree.

For urinary alkalimetry I employ a decinormal solution of oxalic acid. The same may be said of the $\frac{n}{10}$ $C_2H_2O_4$ sol. as of the $\frac{n}{10}$ KHO sol.—it is a standard reagent of convenient strength. If 10 c.c. of alkaline urine becomes neutralized after 10 c.c. of $\frac{n}{10}$ $C_2H_2O_4$ has been added, its degree of alkalinity was 1. If 2.8 c.c. of the acid solution brings about the neutralization of the 10 c.c. of urine, its degree of alkalinity was 0.28. If 0.2 c.c. renders 10 c.c. of the urine neutral, its alkalinity amounted to 0.02 degree.

Preparation of Normal and Decinormal Potassium-Hydrate Volumetric Solution.—

KOH = 55.99.

$\frac{n}{1}$ sol. = 55.99 gm. in 1 litre.

$\frac{n}{10}$ sol. = 5.599 gm. in 1 litre.

Potassium hydrate, 75 gm., is dissolved in enough water, at or near 15° C., to make about 1,050 c.c., and a burette is filled with part of this solution.

Into a flask capable of containing 100 c.c., 0.63 gm. of pure oxalic acid is placed, which is dissolved with about 10 c.c. of water. After two or three drops of phenolphthalein test solution for indicating-purposes have been added, the potassium-hydrate solution is allowed to flow from a burette slowly into a flask, which should be gently but constantly shaken. This agitation should be continued until the red color does not disappear any longer and distributes itself uniformly through the fluid, causing a light pinkish discoloration. Observe the volume of KHO solution utilized, and dilute the remaining part of the solution so that exactly 10 c.c. of the dilution is necessary to effect neutralization of 0.63 gm. of $C_2H_2O_4$. After diluting, the KHO solution should be subjected to another trial in the aforesaid manner, whereby 10 c.c. of the dilution should cause exact neutralization of 0.63 gm. of $C_2H_2O_4$.

The decinormal potassium-hydrate solution is prepared by adding to 10 c.c. of normal potassium-hydrate solution enough distilled water to make 100 c.c.

Only small amounts of these potassium-hydrate solutions should be made at a time, and they ought to be kept in bottles tightly closed with pure rubber stoppers. Such solutions, even if exposed only in the smallest possible manner, will readily absorb carbon dioxide contained in the surrounding atmosphere, and may thus cause errors when applied together with phenolphthalein or litmus solutions.

Ten cubic centimetres of $\frac{n}{10}$ potassium-hydrate V.S. is the equivalent of 0.063 gm. of oxalic acid. According to the older mode of expressing the degree of urinary acidity as equivalent to a certain amount of $C_2H_2O_4$, 10 c.c. of a urine requiring 5 c.c. $\frac{n}{10}$ KHO V.S. corresponds to 0.0315 gm. For a twenty-four hours' urine of 1,200 c.c., 10 c.c. of which is neutralized by 5 c.c. $\frac{n}{10}$ KHO V.S., the acidity, compared to $C_2H_2O_4$, would be $0.0315 \times 120 = 3.78$ gm.

Preparation of Decinormal Oxalic-Acid Volumetric Solution.—

$C_2H_2O_4 + 2H_2O = 125.7$.

6.285 gm.[1] in 1 litre.

Pure oxalic acid, 6.285 gm. (rounded off, 6.3 gm.), is

[1] May be rounded off to 6.3 gm. for all practical purposes.

dissolved in enough water to make exactly 1,000 c.c., at or near 15° C. One cubic centimetre of $\frac{n}{10}$ oxalic-acid V.S. is the equivalent of 0.005599 gm. of potassium hydrate.

Indicators for Urinary Acidimetry and Alkalimetry.—I have tried cochineal, methyl-orange (tropæolin D, Poirrier's orange, helianthin), litmus, and phenolphthalein test solutions.

Tincture of cochineal turns yellow with acids and purple with alkalies. The dihydric phosphates react with it like acids, the two other phosphates like alkali hydrates.

Methyl orange test solution is colored red by acids, yellow by alkali hydrates. Monohydric and normal phosphates turn it also yellow; dihydric phosphates change it to brownish-yellow. This solution is a delicate indicator, but not suited for use with a fluid in which organic acids are contained.

Litmus will indicate acidity when brought in contact with dihydric phosphate, and alkalinity when it reacts with the other phosphates.

Phenolphthalein test solution turns to a Bordeaux red in the presence of alkali hydrates or carbonates; in acid fluids it remains colorless. Monohydric phosphates change it to pale red. Dihydric phosphates show no coloration, and the change from colorless through pinkish and afterward deep red is more gradual. In alkaline fluids a deep red color will appear from the beginning.

The degree of delicacy of these indicators is not the same; the results obtained are therefore not alike. These are approximate only, more or less, on account of the phosphate reaction. Exact and more definite results can be obtained if the phosphoric acid contained in the monohydric and dihydric phosphates is first determined.

The Writer's Method for the Determination of Urinary Acidity and Alkalinity.—Apparatus necessary: One burette of 50 c.c. capacity for the $\frac{n}{10}$ KHO V.S.; another burette of 25 c.c. capacity for the $\frac{n}{10}$ $C_2H_2O_4$ V.S., both mounted on a burette stand. Half a dozen beaker or smooth whiskey glasses, each holding about 75 c.c.; one 5 c.c. pipette graduated to 0.1 c.c.

Mode of Procedure.—Measure off exactly 10 c.c. of the previously boiled urine by means of the graduated pipette, and put it into a beaker or whiskey glass. Examine with litmus paper as to its reaction. Then add two or three drops of the phenolphthalein solution, and note carefully if the two indicators show the same reaction. If this be acid, as it is in the great majority of cases, place the container underneath the burette holding the KHO solution, read off the amount of it contained in the burette, and run it slowly into the urine. The phenolphthalein will at once turn deep red, but the discoloration disappears when the urine is agitated. Continue to titrate the urine mixture with the $\frac{n}{10}$ KHO V.S., constantly shaking and proceeding slowly with occasional interruptions to effect the disappearance of the red coloration. Soon, however, the red color ceases to disappear, and the moment the color of the mixture of urine, phenolphthalein, and potassium hydrate shows a permanent and uniform pale pink the end of the reaction is indicated. If more of the KHO is added to the mixture, then the latter becomes decidedly alkaline. The uniform pale pink indicates exact neutralization to a greater or lesser degree; this may be proven to some extent by litmus paper, though the latter, in point of delicacy, differs somewhat from phenolphthalein, and the readings taken by means of one of the indicators always differ from those in which the other was utilized. Finally, note how many cubic centimetres of $\frac{n}{10}$ KHO V.S. were necessary to effect neutralization, and calculate the acidity as per standard unit.

If the urine be alkaline, according to the litmus test, and the phenolphthalein indicates the same reaction, place the container under the burette holding the $\frac{n}{10}$ $C_2H_2O_4$ V.S., noting the number of cubic centimetres of the latter, and titrate the urine mixture slowly (in a similar manner as with the alkali solution) until the reddish coloration of the mixture has completely disappeared. Read off the amount of the acid solution utilized in producing neutralization, and calculate the alkalinity according to the standard unit.

Further to facilitate urinary acidimetry and alkalimetry and a rational study of the cases under observation, the writer has designed a chart with a scale based upon the standard units previously defined. This chart, when properly used, will give a graphic description of the urine's degree of acidity and alkalinity; it will record the variations in the acidity and alkalinity in a manner similar to that in which the rise and fall of the temperature are illustrated on the fever charts. Apart from the columns devoted to the date and hour, the quantity of urine voided, the medicines and nourishment taken, which occupy only a small portion of the chart, the greater part of the latter is divided into two equal sections—the one on the left, the ruling of which is printed entirely in red for recording the acidity; the other on the right, ruled in blue throughout, to show the alkalinity. In the centre, at the junction of the red and blue ruling, lies the zero point, indicating the chemic neutrality of the urine. Toward the right from the zero line ascend the degrees of alkalinity; to the left, those of acidity. The ruling in both sections is so arranged that even the one-hundredth part of the standard unit (0.01 degree) can be conveniently recorded. Each tenth of the unit (0.1, 0.2, etc., degree) is marked by a bolder line, while both units are made more distinct by double lines. Each chart can record twenty-nine examinations.

My observations on urinary acidity and alkalinity have been recorded, to the greater part, on these charts; a graphic illustration of some of the observations will be found in the following, but it must be remembered that the chart in print appears in only one color and in greatly reduced size.

On Some of the Causes and Variations of the Urinary Reaction. — The reaction of the normal twenty-four hours' urine, under the prevailing influences of environment and under a mixed diet, is always acid. The greater part of this acidity is due to the dihydric phosphates, NaH_2PO_4 and KH_2PO_4, which has been already demonstrated by Liebig.[1] The amount of acid sodium phosphate occurring in a urine is the greater, the less the phosphoric acid has been saturated by the base sodium. Phosphoric acid, besides forming dihydric phosphates, may occur in an acid urine in different other combinations, principally as monohydric phosphate, Na_2HPO_4, giving an alkaline reaction. If the dibasic and monobasic phosphates are present in a certain and definite proportion to each other, the reaction of the urine will be amphoteric—*i.e.*, red litmus paper is colored blue, and blue litmus colored red at the same time. Normal urine is never indifferent toward litmus; it will always react with it, indicating either acidity or alkalinity, or both when under the condition just mentioned.

A relatively small proportion of urinary acidity is due to the presence of acid urates. Uric acid, which when excreted normally hardly ever exceeds 0.75 gm. per diem, is a dibasic acid giving rise to the formation of neutral and acid salts. Although generally regarded as contributing to the conversion of some of the neutral into acid phosphates, the small amount normally produced, the neutral salts it furnishes at the side of acid urates, and its weak degree of acidity, do not let

[1] Liebig's Annalen, Bd. i., S. 173–184.

it appear as an important factor in the causation of urinary acidity.

The assumption that the acidity of the urine may be in part due to the presence of free carbonic, uric, and hippuric acids is apparently an erroneous one. Ingested acids, as well as those originating in the system, combine with bases to form salts. In case the elements and radicals should not occur in sufficient quantity to form salts, the acids—provided they were not introduced in lethal quantities—would become fixed by carbamid, which is always produced amply in the healthy organism.

Even if one or the other acid exists in a free state and in minute quantities in the urine, it would not materially affect the latter's acidity. Carbon dioxide, the weakest of all acids, is undoubtedly present as a gas at the moment and for some time after normal urine is voided; but I doubt very much that it is previously liberated in the system. It is my opinion that all the carbonic acid excreted with the urine originally occurs therein, loosely combined with a chemic body. The unstable compound becomes detached when the urine in the bladder is agitated; an agitation of the urine, sufficient to cause the liberation of this carbonic acid, is the very act of micturition. A portion of the carbonic acid continues to remain in its loose combination after the urine has been passed. The combined carbonic acid, however, will also soon be liberated and will escape completely when the urine is subjected to boiling. We may assume that the gaseous carbonic acid hardly contributes to the acidity of the urine.

The same may be said of lactic and acetic acids, whose very presence in normal freshly voided urine seems dubious. Hippuric acid, which is daily excreted to the amount of 0.35 gm., half as much as of uric acid, never occurs in human urine in the free state and only in combination with one of the alkalies, principally as hippurate of sodium, $NaC_9H_8NO_3$.

Uric acid is nearly insoluble in water, as 14,000–15,000 parts of water at 20° C., and 1,800–1,900 parts of it at 100° C., are necessary to effect this acid's solution. For this reason the urine's acidity is hardly ever increased by free uric acid, though the latter may be found uncombined—under certain conditions—as a crystalline precipitate soon after the urine is voided. This, however, does not indicate that it was kept in solution while the urine was still in the organism; it may have become detached from one or the other of its looser combinations.

As no precipitate is formed by sodium hyposulphite, indicating the presence of any free acid, we may conclude that all the acidity of normal freshly voided urine is practically derived from its acid salts. Aside from the dihydric phosphates, the other acid salts are of only secondary importance as factors in the production of urinary acidity, both as to quantity and as to the degree of acidity.

With the exception of some of the acid urates, whose uric acid is of probable plasmolytic nucleinar origin, the occurrence in the urine of other acid salts appears to be merely accidental—accidental in the sense that they are seemingly not the equivalents of any plasmolytic processes. The greatly reduced quantity of acid urates excreted during fasting represents quite exactly that amount of uric acid which is the consequence of plasmolysis. A portion of the acid urates derives its uric acid from proteolysis. Their occurrence, as well as that of other acid salts, though unfailingly and normally present in the urine of man, is still an accidental one, depending upon the amount and quality of the ingesta and the digestive processes in general.

Acid sodium phosphate, the principal dihydric urinary phosphate, seems to derive its phosphoric acid, to the greater extent at least, by plasmolysis. The phosphoric acid, combined to form a dihydric phosphate, appears to be a product of cell disintegration, occurring independently of the phosphoric acid yielded as such or in the form of phosphates by the food ingesta.

The monobasic phosphate may be considered as the derivation of the dibasic alkaline phosphate, Na_2HPO_4, of the blood. Whether or to what extent the uric acid of plasmolytic origin is effecting this conversion cannot be definitely stated, though it is possible that it combines with part of the sodium of the dibasic phosphate to form a sodium urate, leaving a monobasic, that is, the dihydric phosphate. One or the other acid salt not mentioned here may slightly contribute toward urinary acidity; for all practical purposes, though, the amount of phosphoric acid as eliminated by the acid sodium phosphate may well serve as a general indicator of the urine's total acidity.

If it is desired to ascertain the degree of acidity of a urine, it should be examined soon after it is passed, as it may occasionally attain some additional acidity upon standing. This so-called acid fermentation, to which Liebig and Scherer have already drawn attention, soon takes place at a moderate temperature, producing only a temporary increase in urinary acidity, which continues for about two or three days. Liebig isolated thus from the decomposing urine acetic and benzoic acids, while Scherer demonstrated the occurrence of lactic acid. The urinary mucus has been considered an active agent in effecting acid fermentation—an assumption to which I cannot agree, however. Disintegration of the urates and throwing down of acid urates and uric-acid crystals often take place during this type and stage of urinary decomposition.

The acids separated during acid fermentation of the urine are undoubtedly yielded by certain substances present—as for instance, alcohol, sodium hippurate, and sugar. While I have not been able to identify acetic acid during the acid fermentation of urine, I have succeeded in demonstrating the presence of benzoic acid in two or three, and that of lactic acid in a greater number of instances. I am of the opinion that many fermentative processes occur without the interference of a special ferment, and that they are the result of very simple chemic alterations of a complex substance.

Hippuric acid or a hippurate in solution, for instance, in the presence of sodic phosphate at a suitable temperature, will yield benzoic acid after the lapse of a certain time. I have repeatedly observed in the urine of diabetics a lactic-acid fermentation, generally occurring about sixty or seventy-two hours after micturition. Glucose, in the presence of decomposing albuminous bodies and alkaline carbonates, may be readily converted into lactic acid, as the first stage of a further fermentation:

$$C_6H_{12}O_6 = 2C_3H_6O_3.$$

The degree of urinary acidity varies at different periods during the twenty-four hours, and the reaction under physiologic conditions may even become temporarily alkaline. The appended Tables I. and II. will illustrate the rise and fall of urinary acidity. Table I. gives the mean reaction of eight hundred and seventy examinations of the urine of healthy males, while Table II. demonstrates the fluctuations in the reaction according to six hundred and six examined specimens of urine of healthy women. This table shows a distinct alkaline reaction at about six o'clock in the evening, while Table I. records a greatly diminished degree of acidity for the same period of the day.

The lesser degree of acidity and the temporary alkalescence of normal urine apparently stand in some relationship to the digestion of food, but this is not its sole causative factor. There will occur, independently of the ingestion of certain foodstuffs, a decrease of the urinary acidity during certain periods of the

twenty-four hours, and the reaction may even become alkaline occasionally.

Table III. illustrates the mean reaction of the urine of five healthy fasting males for the twenty-four hours, the observations being all made on one and the same day, the Jewish Day of Atonement. In one specimen of the urine examined I found an actual alkaline reaction, while the mean degree of acidity for some time during the afternoon had distinctly decreased.

The direct influence of certain foodstuffs in effecting a lesser degree of acidity of the urine or the latter's alkalescence depends in part on some of their constituents, which are excreted by the urine in the form of alkaline carbonates. When these occur in excess—that is, in greater quantities than necessary to saturate the acids present—the urinary reaction will be but slightly acid and more often distinctly alkaline.

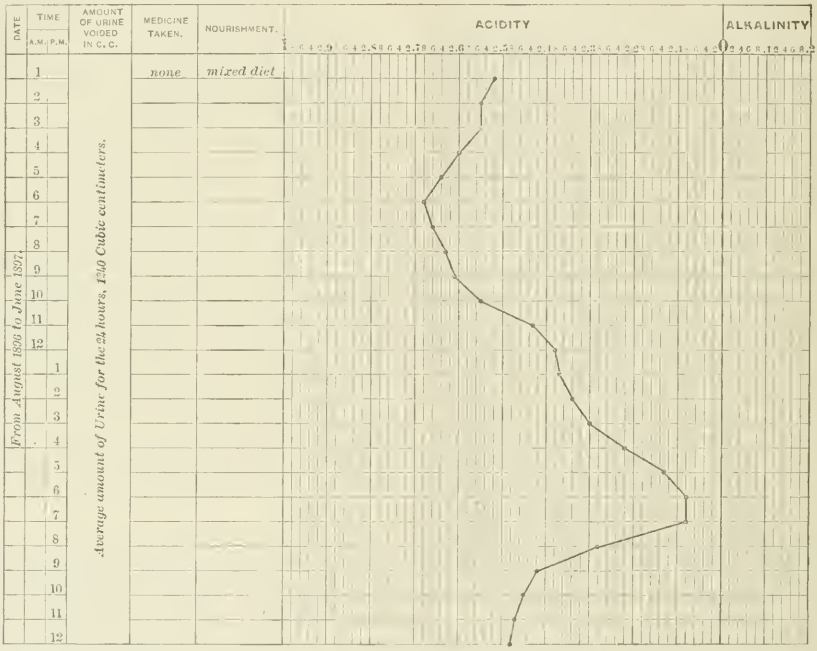


TABLE I.—Showing the Alterations in the Chemic Reaction of Normal Urine for the Twenty-Four Hours. Based upon 870 examinations of the urine of healthy males.

It is generally believed that this variation in the reaction takes place by the medium of the blood, and that the alkalescence of the latter is also increased.

If the alkalinity of the blood increases at all under these circumstances, it cannot be to such an extent as the increased excretion of alkaline salts by the urine would indicate. Moreover, the relative rapidity with which the salts of the organic acids—as the acetates, tartrates, malates, etc.—are converted into carbonates, in which form they appear in the urine, excludes in my opinion the direct participation of the blood.

In other words, if the urine is a filtrate of the blood it cannot contain a constituent in larger quantities than the former, and certainly not at a time when resorption has hardly begun. We must conclude, therefore, that the lesser acidity of normal urine or its alkalescence occurs independently of the condition of the blood, and that the urine derives its additional alkaline carbonates in another form or aggregate and in a more direct manner.

I have stated before that the alterations in the reaction of normal urine are not exclusively due to the ingestion of certain nutritive substances. The foodstuffs even act as accidental modifiers only; they influence the acidity according to their composition, their digestibility, their quantity, etc. Other accidental causes affecting more or less the degree of urinary acidity may set in during the twenty-four hours, but, fearing it would lead me too far, I have to refrain from detailing all these accidental and possible factors.

The accidental modifiers, in my opinion, only participate in the production of a lesser acidity or in that of the physiologic alkalinity of the urine; they do not effect it. These conditions will occur whether the accidental factors are contributing to it or not; some time during the twenty-four hours, most frequently in the afternoon, independently of the ingesta and other accidental causes, the urine becomes less acid and even alkaline. This phenomenon—for it is virtually but one—seems to be indicative of certain systemic processes, and it is met with in a more or less pronounced form in every human urine, in normal as well as in pathologic specimens. I am not prepared to offer any explanation at this day as to the nature of the underlying vital processes.

Table III., giving the mean reaction of the urine of healthy fasting males for twenty-four hours, though based on but five observations, will sufficiently demonstrate that a decrease in the acidity may occur independently of ingested substances. I have not carried on observations in fasting people beyond the twenty-four hours, and cannot state therefore whether the temporary decline in the urinary acidity is equally pronounced if the fasting is continued for some days longer; if the deprivation of liquid and solid ingesta is kept up for a longer period, the acidity will increase again and may even become excessive; this, however, is of pathologic significance.

Table IV. shows the urinary reaction of two pregnant women for twenty-four hours under a similar

mixed diet as was taken prior to conception. The tracing will at once illustrate the lessened acidity and the increased alkalinity so frequently met with during gestation. The variations in their persistent recurrence cannot be explained by the ingested foodstuffs, as the latter hardly differed in quality and quantity from the nourishment partaken of before pregnancy had occurred. A part of the lessened acidity or of the alkalinity may have been occasionally caused by the ingestion of certain foods, as of diluted organic acids in the form of fruit, etc., of which pregnant women are at times extremely fond.

I have alluded to the lessened urinary acidity of pregnancy, as I think it stands in causative relationship to certain vital processes taking place during the time of gestation. Though the urinary secretion in this state presents, as a unit, a lowered degree of acidity, it exhibits during the twenty-four hours modifications similar to those of the urine of non-pregnant women; that is, notwithstanding its general lack of acid principles, the urine of pregnancy still further loses temporarily some of its acidity at one or more periods during the twenty-four hours. The urine during the period of gestation is more deficient in carbamid and salts and more abundant in water than is generally that of non-pregnant women. Urine rich in water turns more readily alkaline than the urine of a higher specific gravity with an abundance of salts; consequently the urine of pregnancy will readily subject itself to the alkaline fermentation. The lesser acidity of the urine of pregnant women and its often occurring alkalinity might be ascribed to the facts last referred to. The manifold processes which we group together as alkaline fermentation invariably bring about the urine's decomposition; thus alkaline fermentation can take place only in decomposing or decomposed urine, and it is practically synonymous with a well-defined stage of the latter's decomposition. One of the chief processes of the alkaline fermentation is the splitting up of some of the carbamid into ammonium carbonate, thus:

$$CO(NH_2)_2 + 2H_2O = (NH_4)_2CO_3.$$

A part of the ammonium carbonate enters into the formation of urate of ammonium, $C_5H_3(NH_4)_2N_4O_3$, part of it into that of ammonio-magnesium phosphate, $MgNH_4PO_4 + 6H_2O$. This ammoniacal decomposition will in the course of time occur in every healthy urine upon standing; it is of pathologic significance if it takes place within the organism or immediately after the urine is voided.

The low degree of acidity and the alkalinity of the urine of pregnancy, however, are not caused by any auto-fermentative processes, and are not dependent upon the presence of volatile alkali. The peculiar character of the urine of this condition is due to salts of the fixed alkali, and reflects certain vital processes and not merely some auto-fermentative alterations.

True, the composition of the urine of pregnant women favors rapid ammoniacal fermentation, which may even take place before it is voided; still the urine of this condition possesses a "permanent" alkalescence, which is due to its non-volatile alkaline salts.[1]

The inherent characteristic of healthy urine—its lesser acidity or its eventual alkalescence during one or more periods in the twenty-four hours: I mean that condition which occurs independently of accidental causes—is to be met with, more or less pronounced, during all the different periods of life. Accidental causes will still further decrease the declined acidity, and their influence might vary according to the age and the constitution of an individual. It is in most

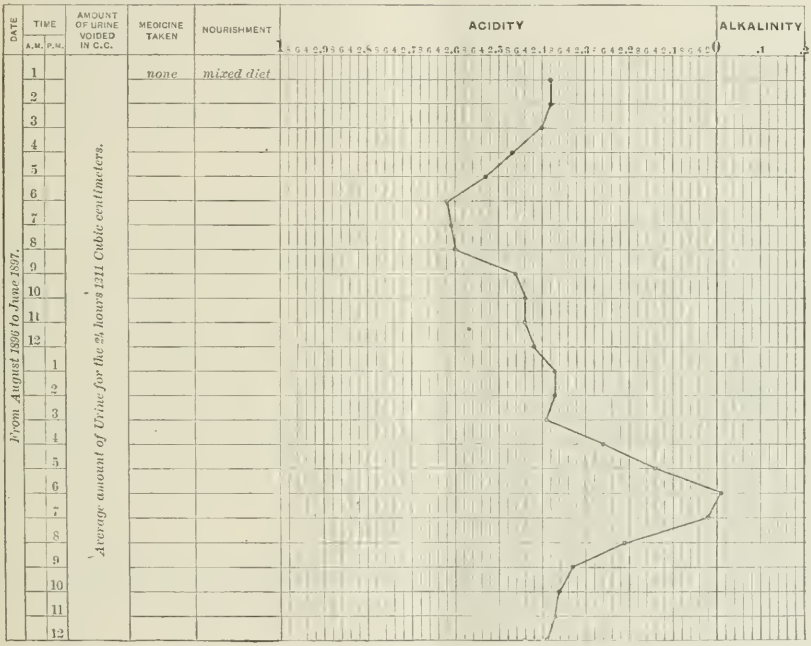


TABLE II.—Demonstrating the Alterations in the Chemic Reaction of Normal Urine for the Twenty-Four Hours. Based upon 606 examinations of the urine of healthy women.

[1] The alkaline reaction of the urine in general depends mainly upon the products consequent to the disintegration of carbamid, or upon the carbonates of the alkalies. If the latter are present in sufficient quantity they will soon effect a decomposition of the urea. Hence the urine should be subjected to an immediate examination to obtain exact results as to its kind and degree of alkalinity.

cases nearly impossible to differentiate between the variations in the urinary reaction due to inherent and those due to accidental causes, as both factors in the production of these alterations may be coincident. Complete deprivation of foodstuffs even may not demonstrate the exact rôle which the inherent causes play therein, as during a fast of any length of time the excretion of phosphoric acid becomes greater, which will influence the reaction of the urine. The yielding of greater quantities of phosphoric acid is mainly due to the decomposition of the osseous tissues, and it will be eliminated, combined possibly with sodium, in the form of an acid sodium phosphate.

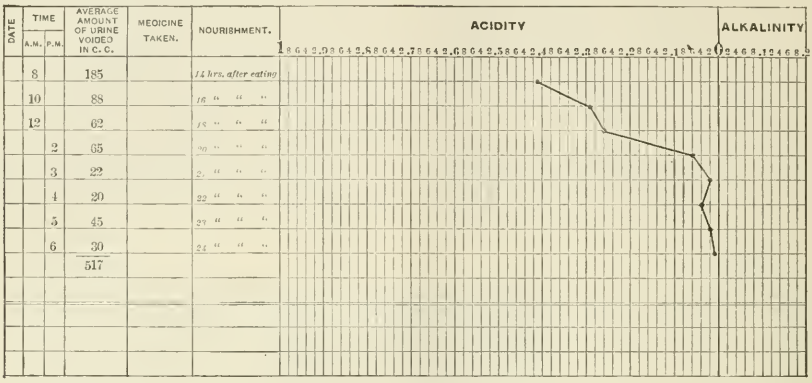


TABLE III.—Illustrating Alterations in the Chemic Reaction of Urine while Fasting. The mean reaction of the urine of five healthy fasting males.

Table V. records the urinary acidity for three days of a patient afflicted with prolonged hydruria. It will be noticed that the mean degree of acidity is an unusually small one. However, if the large amounts of urine voided are taken into consideration, we will find that the absolute amount of acid principles excreted is far in excess of that occurring under normal conditions. The reaction curve, though very large amounts of urine were voided, clearly shows the variations during the twenty-four hours and the still further decline of the acidity during certain periods. One would suppose that the enormous amount of fluid ingesta, principally of plain water, would bring about a rather uniform degree of urinary acidity; instead of this, we meet with a diminished degree of acidity, especially in the afternoon hours, much in the same manner, though somewhat less pronounced, as it occurs in the urine of healthy individuals.

Tables VI., VII., and VIII. still further illustrate the inherent tendency to a lesser urinary acidity during certain hours of the day. Each drawing represents the mean curve of acidity, for the different hours of the day, of fourteen cases of diabetes mellitus under the influence of certain nutritive substances. Table VI. records the urinary acidity under the exclusive ingestion of meats and fats, Table VII. that under an exclusive milk regimen, and Table VIII. that under a mixed diet with carbohydrates in abundance.

The acidity is the greatest under the exclusive meat-and-fat ingestion, the smallest under that of a mixed diet. The curve obtained while the patients were under the influence of mixed food does not materially differ from that of healthy persons under the same regimen. The graphic illustration of the acid degree of the urine of the same patients while they were subsisting on meats and fats shows an excessive amount of acidity. This we may *a priori* ascribe to the effect of the specific nutriment. Either the excessive quantities of acid salts are due to proteolysis directly, or they are caused by plasmolysis—the ingested foodstuffs being not sufficient to continue normal metabolism, or they may be produced by both these factors together.

The same patients under a strict milk diet, as recorded in Table VII., excreted an amount of acid salts less than when under a meat-and-fat regimen and more than when subsisting on mixed food. This is especially noticeable if a comparison of the degree of acidity and the amount of urine voided is made. Under the meat-and-fat diet the average quantity of the twenty-four hours' urine amounted to 3,205 c.c., under the milk regimen to 2,705 c.c., and under the mixed nutriment to 1,975 c.c. Naturally the fourteen cases under observation did not always remain in the same condition, and an improvement more or less pro-

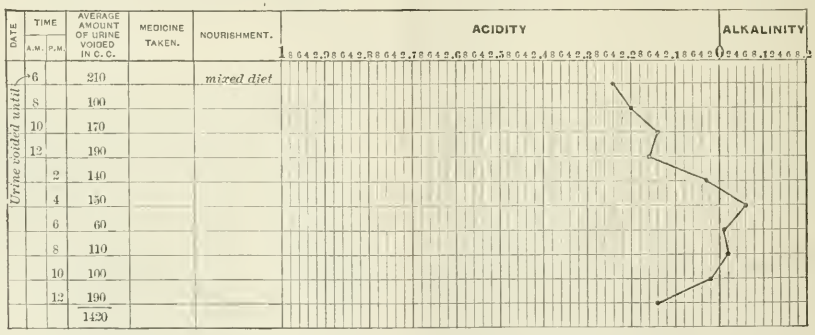
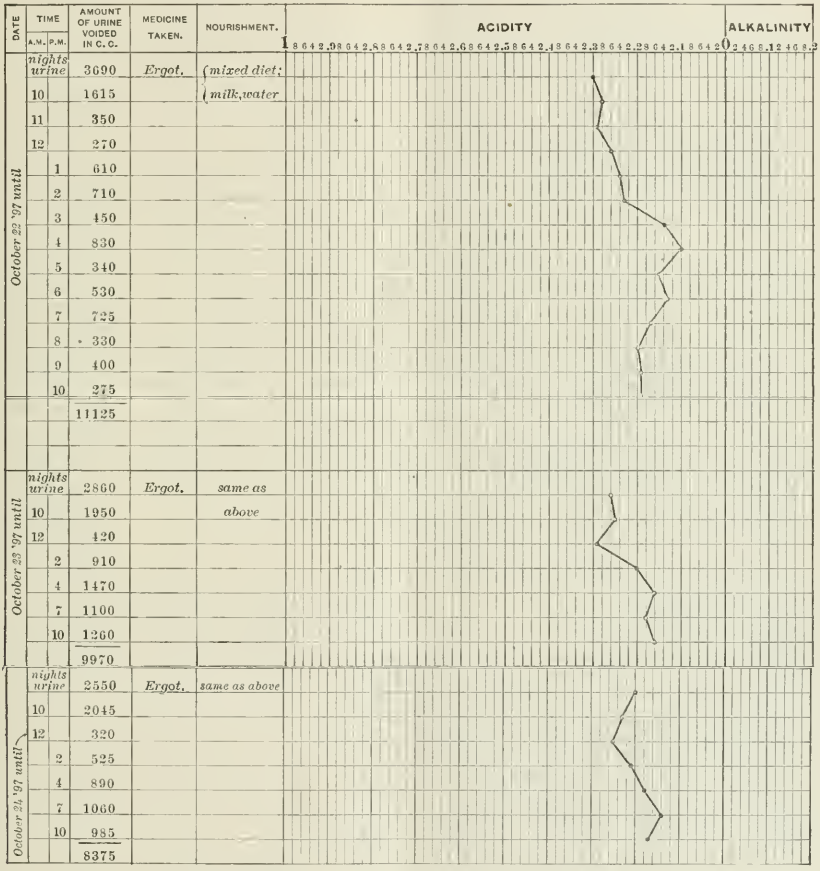


TABLE IV.—Showing the Mean Urinary Reaction of Two Pregnant Women (Sisters) for the Twenty-Four Hours.

nounced ensued, at least for the time being. The fourteen patients were in a precarious condition when first seen—that is, when the meat-and-fat diet was ordered; they were somewhat improved when the milk regimen was started, and most of them were free of dextrose or nearly so when the mixed diet, including sufficient amounts of carbohydrates, was prescribed. The diminished amount of urine voided under the milk and mixed diets seems to be due both to the nutriment and to the improved condition.

Apart from all secondary considerations, the reaction records in Tables VI., VII., and VIII. prove beyond doubt that there occur variations in urinary acidity independently of food decomposition and fermentation, which seem to be of an inherent nature.



DATE	TIME A.M.	TIME P.M.	AMOUNT OF URINE VOIDED IN C.C.	MEDICINE TAKEN.	NOURISHMENT.
October 22 '97 until	nights	urine	3690	Ergot.	(mixed diet;
	10		1615		(milk, water
	11		350		
	12		270		
		1	610		
		2	710		
		3	450		
		4	830		
		5	340		
		6	530		
		7	725		
		8	330		
		9	400		
		10	375		
			11125		
October 23 '97 until	nights	urine	2860	Ergot.	same as
	10		1950		above
	12		420		
		2	910		
		4	1470		
		7	1100		
		10	1260		
			9970		
October 24 '97 until	nights	urine	2550	Ergot.	same as above
	10		2045		
	12		320		
		2	525		
		4	890		
		7	1060		
		10	985		
			8375		

Table V.—Urinary Acidity of a Case of Hydruria for Three Days.

The Normal Degree of Urinary Acidity.—Hyperacidity, as well as hypoacidity or hyperalkalescence, of the urine is the indicator of some disturbance of the systemic equilibrium. It matters not for our considerations of what precise nature are the factors which interfere with the normal course of certain vital processes.

These factors may produce a transitory disturbance only, in which instance the abnormality in the urinary reaction may be readily pointed out; or they may exert a persistent and continuous influence, directly or more indirectly, when, on account of their chronicity and that of the abnormal urinary reaction resulting therefrom, the latter may be often deemed normal and a pathologic state may be frequently overlooked.

Moreover, there are individuals, apparently healthy and not losing in body weight, who excrete habitually either larger or lesser amounts of acid urinary substances; that is, if compared with the degree of urinary acidity usually found in persons living under similar conditions. In these cases we have to assume that the metabolic processes, though being normal, are either accelerated or retarded. Another explanation for these phenomena cannot be attempted.

The Mean Degree of Acidity of the twenty-four hours' urine of healthy adult males (Table I.) I found to be 0.434. The average quantity of urine voided per diem in the cases under observation amounted to 1,240 c.c.

Expressed as oxalic acid, the total urinary acidity for the twenty-four hours would correspond to 3.390408 gm.

The individuals weighed in the mean 74 kgm.; the urinary acidity amounts therefore to 0.045817 gm. of oxalic acid to 1 kgm. of body weight.

In healthy adult women the mean urinary acidity for the twenty-four hours (Table II.) amounts to 0.373 degree. The quantity of urine excreted during this time I found to average 1,211 c.c. Expressed as oxalic acid, the total acidity of the urine per diem would be the equivalent of 2.843379 gm.

For each kilogram of a mean body weight of 66.5 kgm. we would have, therefore, an amount of acidity corresponding to 0.042756 gm. of oxalic acid.

The urine of men contains a larger amount of acid salts than that of women, which may be due to:

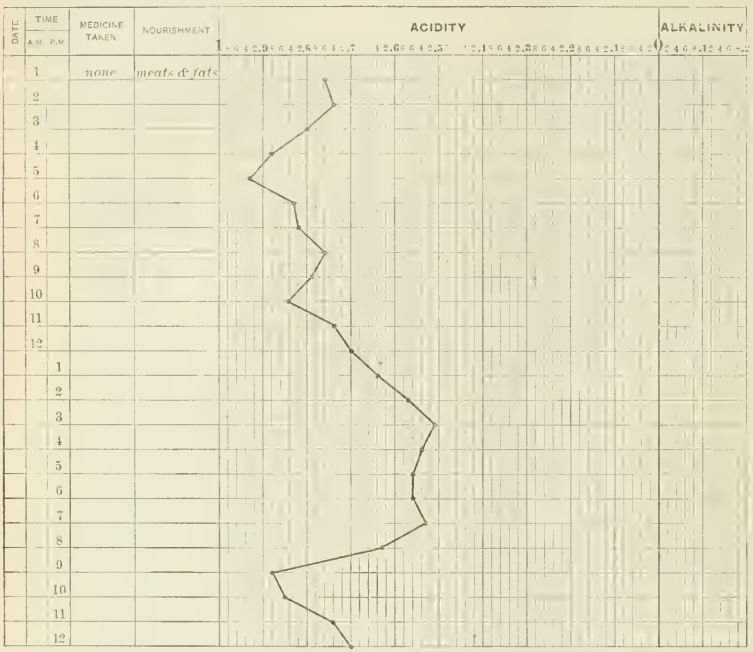


TABLE VI.—The Mean Curve of Urinary Acidity for the Twenty-Four Hours of Fourteen Cases of Diabetes Mellitus. *A*, under a rigid meat and fat diet.

(*a*) A relative greater ingestion of foodstuffs for each kilogram of body weight.

(*b*) Some other accidental influences.

(*c*) A greater general activity.

(*d*) A higher intensity or an acceleration of certain vital processes.

It is an easy matter to calculate the total acidity of a twenty-four hours' urine and express it as oxalic acid, if its relative acidity and its quantity voided for that time be known. I alluded to this point in the first part of this communication, where I have brought forth an example to make clear the calculation.

The amount of urine excreted and the weight of the individual should always be taken into consideration. Though we may take it for granted that the normal degree of acidity of a twenty-four hours' urine be 0.434 in the male and 0.373 in the female, the urines of certain pathologic states may be abnormally concentrated and scanty in amount, or they may be of a low specific gravity coincident with a diminished or excessive flow.

I have found in my observations that during the twenty-four hours and under normal conditions, 16.756 c.c. of urine are excreted for each kilogram of man, and 18.210, c.c. for each kilogram of woman.

If a man weighs 95 kgm., he should therefore normally void 95 × 16.756 c.c.; that is, 1,591.820 c.c. of urine per diem.

Assuming the mean normal degree of urinary acidity for the twenty-four hours to be 0.434, the total daily acidity of this man's urine expressed as oxalic acid would amount to 4.3523542 gm. If the urinary acidity of one kilogram of man is represented by 0.045817 gm. of oxalic acid, and if for each kilogram of body weight 16.756 c.c. of urine is discharged, then it may be inferred that 16.756 c.c. of urine possesses a total acidity equivalent to 0.045817 gm. of oxalic acid. A urine to the amount of 1,591.820 c.c. should therefore possess an acidity equal to 4.352615 gm. of oxalic acid.

I have in the calculations presented carried out the fractions to their full extent, to demonstrate that the results obtained are practically identical. While one calculation starts from the degree of urinary acidity and gives the total acidity expressed as oxalic acid, the other calculation, expressing the result by the same medium, starts from the kilogram of body weight and its accordant amount of urinary secretion and acidity.

It will be noticed that the results of both calculations are absolutely identical to the fourth decimal; beyond that is shown an infinitesimal difference, which is due to the modes of calculation. For all practical and clinical purposes we may round off the different figures thus:

The urine of the male: Mean degree of acidity, 0.43; total acidity per diem corresponding to 3.39 gm. of oxalic acid; acidity for each kilogram of body weight corresponding to 0.046 gm. of oxalic acid; urine excreted for each kilogram of body weight, 17 c.c. per diem.

The urine of women: Mean degree of acidity, 0.37; total acidity per diem corresponding to 2.84 gm. of oxalic acid; acidity for each kilogram of body weight corresponding to 0.043 gm. of oxalic acid; urine excreted for each kilogram of body weight, 18 c.c. per diem.

The figures laid down in the foregoing are derived from investigations carried on in the city of New York during all the seasons of the year. No doubt the average acidity of the urine in other localities of this country or in other parts of the world may differ more or less from that I have met with. Even if the degree of an inherent urinary acidity were the same in all sections of the globe, the ultimate degree of urinary acidity would be a diverse one on account of the varying accidental modifiers in the different localities.

We may conclude that the acidity of the urine of males is abnormal or pathologic if it is in the mean for the twenty-four hours decidedly less or more than 0.43 degree, and that the acidity of the urine of women showing a pronouncedly lesser or greater degree than 0.37 must be considered abnormal.

The Urinary Reaction as Affected by Certain Medicinal Agencies.—In considering the influence of certain drugs on the urinary reaction, I abstain from

referring to their effect upon urine of a normal or less degree of acidity or upon alkaline urine, and shall confine myself solely to such observations as relate to the influence of some therapeutic substances upon urine of an excessive degree of acidity.

Incidentally to some experiments on my own person on the behavior of certain types of nutritives toward the reduction of body weight, I had occasion to observe and study closely a hyperacid urine and the effect of some therapeutic modifiers upon its degree of acidity. The increased amount of the acid urinary salts in this instance was caused either directly or indirectly by the almost exclusive ingestion of proteid substances, and the drugs were primarily employed to overcome a vesical uneasiness, the consequence of the hyperacidity of the urine.

A perusal of Table IX. will show that under a mixed diet on March 3, 1898, the amount of the twenty-four hours' urine and its degree of acidity were almost normal. The proportion of the excreted uric acid to the urinary carbamid was found to be somewhat small, if the ratio of 1 to 45 is accepted as a standard. On March 4th, under an almost exclusive proteid nourishment, the amount of urine voided during the twenty-four hours became considerably diminished, while the acidity, as expected, was raised to 0.71 degree. The proportion of uric acid to carbamid became not materially altered, though the absolute amounts of both substances were largely increased. The following day, under a larger quantity of a similar nourishment, the amount of urine again became almost normal, while the acid degree was slightly lessened; the proportion of uric acid to carbamid was 1 to 47—both substances occurring in larger absolute amounts. On March 6th the amount of urine voided was about normal, while the degree of acidity was raised to 0.77, the proportion of uric acid to carbamid remaining about the same—1 to 48. The following day, on account of some vesical and urethral uneasiness, citrate of lithium was taken, the dose amounting to 0.75 gm. three times daily. The quantity of urine for that day became markedly increased, while the acidity fell to 0.61 degree. The proportion of uric acid to carbamid became only slightly altered. On March 8th, while still under a food greatly abundant in albuminous matter, and under the influence of 3 gm. of the lithium citrate, the urine became about normal in quantity, the degree of acidity increased somewhat, and the proportion of uric acid to carbamid was reduced to 1 to 43. The following day the degree of acidity was still more heightened, and I concluded to substitute thereafter piperazin for the citrate of lithium.

On March 10th, under a nourishment a little increased in its caloric value, piperazin in aerated water was taken, amounting in all to 1 gm. The quantity of urine decreased, as did its degree of acidity. The discharge of uric acid was in the ratio of 1 to 41 of carbamid. Under larger doses of piperazin, 1.5 gm. to 1.75 gm. per diem, the degree of acidity of the urine remained nearly stationary and the output of uric acid never amounted to more than 1 part in 40 parts of eliminated urinary carbamid.

On March 14th, under an almost exclusive proteid nourishment, 1 gm. of lysidin was taken in broken doses. The quantity of urine voided was little changed. The acid degree amounted to 0.66, and the uric acid-carbamid ratio was 1 to 43.

Two grams of lysidin effected little change from these figures. Three grams of the drug caused a slight increase in the quantity of the urine, but bore very little influence upon its general degree of acidity. For the five days during which the quantity of lysidin taken amounted to 3 gm. for the twenty-four hours, the amount of the carbamid excretion became noticeably diminished, while the uric-acid elimination remained about the same. The latter's proportion to the urea present was therefore increased, amounting on one day to 1 to 35.

On March 21st, still under a diet abundant in albuminous material, 1 gm. of uricedin was taken. The degree of acidity fell at once to 0.58. The following day, when 2 gm. of that drug was used, the acidity became lowered to 0.53 degree, while the amount of urine voided was raised to 1,660 c.c. Uricedin, in doses of 3 gm. per diem, effected a still lower degree of acidity, which averaged only 0.12 degree on March 26th. The daily dose of 3 gm., though considered a small one for this mild-acting preparation, brought about pronounced alkalescence of an otherwise hyperacid urine on more than one occasion during the twenty-four hours. The excretion of uric acid became

TABLE VII.—The Mean Curve of Urinary Acidity for the Twenty-Four Hours of Fourteen Cases of Diabetes Mellitus. *B*, under an exclusive milk regimen.

also proportionally enlarged, being as high as in the ratio of 1 part to 27 parts of carbamid on March 25th.

From March 28th to April 1st it was necessary to turn again to a more pronounced mixed diet. No medicine was taken during that period and the acidity resumed its normal degree. The absolute quantities of both carbamid and uric acid became markedly diminished, and the latter occurred on one occasion in the proportion of 1 to 68 of carbamid.

Subsequently the proteid nutriment was again tried for another four days, with the ultimate result of reducing the body weight to 91 kgm. The urinary acidity for the first of these four days was excessive, but it fell at once after uricedin in small doses was taken again.

Having found it inopportune to make regular daily examinations of the fæces, I could not calculate the nitrogen balance. This, however, is not essential for our considerations.

Inasmuch as the degree of urinary acidity is the indicator of certain vital processes, the above-cited data will interest us, though they do not reflect a urine of a pathologic state. The increased acidity of the urine in this instance was caused by a known factor, which was introduced purposely.

Whether this factor—the proteid nutriment—acts as a direct intensifier of the urinary acidity, or whether it modifies the degree of the latter in a more remote and indirect manner, I shall not dwell upon any further.

The proportion of uric acid to carbamid in the related case was and is normally very small, about 1 to 55 or 1 to 60.[1] The exclusive proteid nutriment altered this ratio, augmenting the formation and the subsequent excretion of uric acid. The latter was still further increased after the administration of certain medicinal substances.

Furthermore, the degree of general urinary acidity was immediately raised after the albuminous diet was instituted, and the carbamid secretion was doubled in amount. On the other hand, the behavior of the drugs employed was a different one toward the general acidity than it was toward the uric-acid elimination. While citrate of lithium, piperazin, and lysidin effected a decrease—though minute—of the general urinary acidity, they invariably caused an increased output of uric acid.

The action of uricedin on the degree of general acidity of the urine was very decided and more pronounced than that of either of the drugs just mentioned. It successfully lowered the acidity and turned the reaction alkaline on many occasions; this, however, cannot be seen from the table, as it only records the average degree of acidity for the twenty-four hours, and not the reaction of each specimen of urine voided during that time.

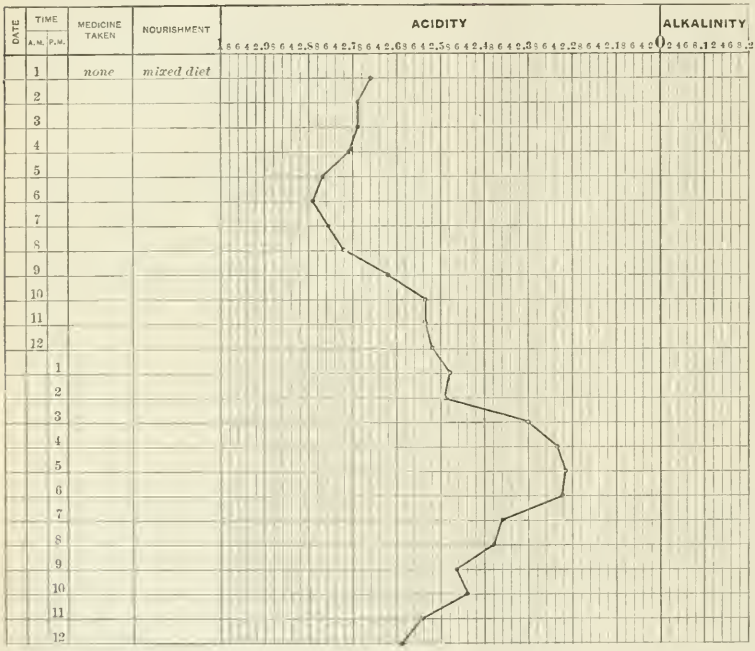


TABLE VIII.—The Mean Curve of Urinary Acidity for the Twenty-Four Hours of Fourteen Cases of Diabetes Mellitus. (, under a mixed diet.

Some medicinal agencies tend to demonstrate that we may have an apparently increased output of uric acid without a proportional augmentation of the general urinary acidity. When uricedin was taken, the degree of the general acidity became subnormal, while there occurred an enlarged excretion of uric acid simultaneously—the latter, as a matter of course, having been eliminated in the form of a urate.

Medicines diminishing the general urinary acidity act either as accidental modifiers by retarding or preventing the formation of acid salts or by influencing directly the anabolic and catabolic processes. Some remedial agents, however, possibly effect the reduction of urinary acidity by both, acting as accidental modifiers as well as influencers of the systemic activity.

Moreover, it is an easier task from the clinical standpoint to render the urinary reaction alkaline or to reduce the acidity and to keep it for some time at a lesser degree, than to increase it. It seems that the human organism is more readily accessible to the influence of drugs diminishing the acidity of the urine or effecting its alkalescence than it is to that of innocuous medicinal agencies given for the purpose of raising the acidity. I have found no drug of a mild nature equalling the proteid nutriment in effecting the latter.

The influence of certain drugs on the urinary hyperacidity of some pathologic conditions was studied by me in a number of patients. I will relate some of the cases in the following:

CASE I.—Mrs. I. S——, aged thirty-two, American, consulted me in June, 1897, on account of a general

[1] Haig's ratio of 1 part of uric acid to 33 parts of urea, I find too large for the average urine of Americans; the proportion of 1 to 45 or 1 to 48 appears to be about the norm.

feeling of malaise, associated with depression, irritability, and insomnia.

The examination did not reveal any organic disease. The urine was scanty; its specific gravity, 1.028; and came greatly enlarged, rising to more than 1,800 c.c. —about twice the amount previously voided. The degree of urinary acidity became reduced to 0.7; but this, on account of the increased amount of urine, is

DATE	BODY-WEIGHT IN KILOGRAMS	NOURISHMENT	ALBUMIN INGESTED IN GRAMS	VALUE OF ALBUMIN INGESTED IN CALORIES	VALUE OF TOTAL NOURISHMENT IN CALORIES	CALORIES PER KILOGRAM OF BODY-WEIGHT	MEDICINE TAKEN AND ITS AMOUNT PER DIEM	AMOUNT OF 24 HOURS URINE IN CUBIC CENTIMETERS	SPECIFIC GRAVITY OF URINE	DEGREE OF ACIDITY OF URINE	CARBAMID IN GRAMS, PER 100 C.C. OF URINE	URIC ACID IN GRAMS, PER 100 C.C. OF URINE	PROPORTION OF URIC ACID TO CARBAMID
MARCH, 1898													
3D	96.5	Mixed diet	160	656	3614	37.4	None	1625	1016.	0.44	1.8	0.032	1:56
4TH	96.5	Proteids predominating	420	1722	2057	21.3	"	1280	1025.	0.71	3.3	0.065	1:51
5TH	96.	"	510	2091	2680	27.9	"	1550	1028.5	0.69	3.4	0.072	1:47
6TH	95.	"	530	2173	2866	30.2	"	1590	1032.	0.77	3.4	0.071	1:48
7TH	95.	"	530	2173	2936	30.9	Citrate of Lithium, 0.75 GM. T.I.D.	1730	1031.5	0.61	3.9	0.087	1:45
8TH	94.75	"	520	2132	3028	31.9	" " 1 GM. T.I.D.	1670	1034.	0.65	3.9	0.091	1:43
9TH	94.75	"	500	2050	2928	30.8	" " 1 GM. T.I.D.	1630	1029.5	0.68	3.8	0.084	1:45
10TH	94.	"	520	2132	3175	33.8	Piperazine 1 GM. IN AERATED WATER	1580	1031.	0.64	3.6	0.088	1:41
11TH	94.	"	470	1927	2868	30.5	" 1.5 " "	1590	1028.	0.65	3.1	0.067	1:46
12TH	93.5	"	510	2091	2698	28.9	" 1.8 " "	1470	1027.5	0.64	3.0	0.075	1:40
13TH	93.5	"	530	2173	2885	30.8	" 1.75 " "	1450	1036.	0.63	3.2	0.076	1:42
14TH	93.25	"	550	2255	2644	28.3	Lysidine 1 GM. IN AERATED WATER	1480	1030.5	0.66	2.9	0.068	1:43
15TH	93.	"	510	2091	2510	27.	" 2 GMS. "	1460	1028.	0.68	3.1	0.070	1:44
16TH	93.	"	490	2009	2524	27.1	" 3 " "	1530	1026.	0.62	2.7	0.077	1:35
17TH	93.	"	430	1763	2475	26.6	" 3 " "	1570	1024.5	0.66	3.0	0.075	1:40
18TH	93.	"	400	1640	2294	24.7	" 3 " "	1620	1025.	0.64	2.5	0.068	1:37
19TH	93.	"	380	1558	2467	26.5	" 3 " "	1590	1023.5	0.62	2.6	0.071	1:37
20TH	92.75	"	350	1435	2218	23.9	" 3 " "	1640	1023.	0.63	2.5	0.070	1:36
21ST	92.	"	390	1599	2566	27.9	Uricedin 1 GM.	1620	1024.	0.58	2.9	0.081	1:36
22ND	92.	"	400	1640	2534	27.5	" 2 GMS.	1660	1023.	0.53	2.9	0.076	1:38
23D	92.	"	430	1763	2525	27.4	" 3 "	1650	1024.5	0.43	2.4	0.075	1:32
24TH	92.	"	440	1804	2559	27.8	" 3 "	1620	1026.	0.34	2.5	0.078	1:32
25TH	92.5	"	420	1722	2309	25.	" 3 "	1510	1022.5	0.19	2.2	0.083	1:27
26TH	92.75	"	320	1312	2050	22.1	" 3 "	1470	1020.5	0.12	2.6	0.073	1:36
27TH	92.5	"	320	1312	2116	22.9	" 3 "	1480	1020.	0.14	2.7	0.079	1:34
28TH	92.	Mixed diet	180	738	2208	24.	None	1420	1020.	0.35	2.6	0.051	1:51
29TH	92.	"	120	492	2182	23.7	"	1360	1019.	0.41	2.3	0.043	1:53
30TH	92.	"	100	410	2251	24.5	"	1400	1019.	0.42	1.9	0.028	1:68
31ST	91.75	"	100	410	2441	26.6	"	1460	1017.5	0.44	1 7	0.028	1:61
1ST	91.5	"	80	328	2173	23.7	"	1380	1015.	0.44	1.3	0.033	1:40
APRIL 2ND	92.	Proteids predominating	350	1435	2258	24.5	"	1350	1026.	0.64	3.1	0.050	1:62
3D	91.5	"	420	1722	2368	25.9	Uricedin 3 GMS.	1530	1028.	0.25	2.5	0.045	1:56
4TH	91.5	"	440	1804	2212	24.2	" 3 "	1470	1027.5	0.20	2.8	0.051	1:55
5TH	91.	"	370	1517	2210	24.3	" 3 "	1500	1026.	0.22	2.9	0.052	1:56
6TH	91.	Mixed diet	110	451	2497	27.4	None	1440	1023.	0.40	2.3	0.047	1:49

TABLE IX.

its degree of acidity, 1.12. No abnormal constituents were present.

I diagnosed the affection as one of latent gout, and treated the same accordingly.[1] Gram doses of sodium salicylate and dimethyl-xanthin (theobromine) were ordered to be taken in hot water three times daily.

The quantity of urine secerned for the first twenty-four hours while influenced by this combination be-

[1] I did not search for uric acid or the urates; their absence from the urine does not always indicate their retention in the organism.

no indication that the absolute amount of acid salts became lowered.

On the fourth day 1,500 c.c. of urine, of a specific gravity of 1.017 and of an acidity of 0.66 degree, was secreted, and the patient felt greatly relieved.

The medication was continued for a fortnight, during which period and for some time after the urinary acidity was kept down to 0.5 degree. The lessened acidity of the urine was coincident with a marked improvement of the systemic condition.

In December, 1897, there was a recurrence of the

condition of malaise and the concomitant phenomena. The secretion of the urine became again scanty, the specific gravity was raised to 1.028, and the acidity to 0.85 degree.

Taking the excessive acidity again as an indicator of the systemic condition, I administered the sodium salicylate and dimethyl-xanthin—this time, however, with very little success, as the drugs made only a slight impression upon the urinary acidity and did not alter the general status.

In the beginning of January, 1898, the patient was started on piperazin water. Subsequently the quantity of urine became larger, and the specific gravity, the degree of acidity, and the absolute acidity were somewhat lowered. The patient improved to some extent, when, on March 24th, she had a well-defined acute attack of gout, including pyrexia and pains in the toes and particularly in the lumbar region. I immediately put the patient on uricedin, 2 gm., three times daily. The amount of urine voided became nearly trebled during the first twenty-four hours; the specific gravity fell to 1.0135 and the acidity to 0.32 degree. On the third day the average acidity amounted to 0.2 degree and the acute condition had almost disappeared. In a week the patient had completely recovered from the attack. Diminished doses of the drug were continued, and the urinary acidity was kept below normal for some time thereafter.

The patient has had no recurrence since, and feels very well at the present day.

Case II.—Mr. A. H——, aged fifty-six, German, is afflicted with a general gouty diathesis and is subject to occasional goutyform attacks of the diaphragmatic type. The paroxysms are, as a rule, not of a very severe character; still they cause the patient a good deal of anxiety and restlessness.

The urine, on November 16, 1897, just prior to a paroxysm, was scanty in amount, of a high specific gravity, 1.036, and of an acidity of 0.78 degree. Soon after the attack a comparatively large quantity of urine, of a density of 1.028 and an acidity of 0.92 degree, was excreted. A urate deposit composed of acid urates was precipitated almost immediately after the secernment of the urine.

Potassium iodide and vinum colchici seminis, in doses of 0.5 gm. and 1 c.c. respectively, every four hours, were subsequently prescribed.

The pain was soon allayed by this combination, and after twelve hours the diuretic property of the colchicum seed demonstrated itself.

After a week's administration of these drugs the quantity of urine per diem amounted to 1,750 c.c., its average density to 1.022, and its mean acidity to 0.65 degree. Medication was discontinued toward the middle of December.

On February 2, 1898, the patient experienced a very painful attack, resembling almost in every detail one of angina pectoris. The first urine excreted after the paroxysm had a specific gravity of 1.030 and an acid degree of 0.8.

To keep down the urinary acidity the patient was put on potassium citrate, in doses of 0.35 gm. three times daily. The acidity soon became subnormal and the patient felt comfortable. Potassium citrate, however, like all similar remedies, possesses a great drawback, inasmuch as it produces no lasting effects. It will readily reduce the urine's acidity or bring about its alkalescence as long as it is taken; as soon, however, as its administration is discontinued, the urine will attain again its former degree of acidity. This fact demonstrates that potassium citrate and the drugs belonging to its class—in therapeutic doses at least—are non-influencers of metabolism.

A more permanent effect is produced by uricedin, a double salt, into the combination of which enter, besides a citrate, the sulphate and chloride of sodium. A patient, especially one afflicted with a so-called diathesis, is only too apt to become tired of and satiated with incessant medication. To prevent exacerbations, it is essential to keep the urine of gouty individuals in a state of low acidity for long periods. The last-mentioned drug, in doses from 1.5 to 2.5 gm., taken even only twice or three times during a week, will often effect a comparative permanency of a lesser urinary acidity.

On March 5th the patient was ordered to take the drug in doses of 2 gm. every third day. With occasional interruptions of a week or two, he has taken it ever since. The urinary secretion is about normal in quantity, its specific gravity varies between 1.017 and 1.028, and its degree of acidity between 0.2 and 0.4. The patient feels comfortable and at the present moment shows occasionally only slight symptoms of a gouty dyscrasia.

Case III.—Mr. E. S. G——, aged thirty-one, American, consulted me first on March 12, 1898. The patient was greatly emaciated and showed marked metabolic disturbances, and was afflicted with an irritability of the bladder. He ascribed his condition to his irregular mode of living and long-continued nightwork.

The quantity of the urine of the following twenty-four hours was estimated to be 1,200 c.c.; its specific gravity amounted to 1.031, and its degree of acidity to 0.99. Carbamid and uric acid were present in about the normal ratio. Albumin and dextrose were not detected.

The patient was put on an exclusive milk regimen, starting with 4 litres per diem. Medicinally sodium bicarbonate combined with sodium acetate, 0.5 gm. of the former and 0.75 gm. of the latter *pro dosi*, was ordered to be taken four times daily.

On March 19th the patient had gained 1.5 kgm. in body weight; the urinary secretion amounted to 1,620 c.c., with a specific gravity of 1.024 and an acidity of 0.68 degree. (It must not be inferred, however, that the fall in the acid degree corresponds with the absolute decrease of acid salts.)

Incidentally the irritability of the bladder, principally due probably to the excessive urinary acidity, was relieved to some extent.

The prescribed diet and medication were continued for a fortnight longer, when the patient was attacked with a well-defined case of rubeola.

During the course of the acute affection, which lasted for three weeks,[1] the alkaline therapy was dispensed with. At the onset of the pyretic state the flow of urine became greatly diminished, the density rose to 1.033, the acidity to 0.95 degree. The nitrogenous urinary constituents, principally carbamid and uric acid, occurred in excess; on the third day nucleoalbumins in considerable quantity were detected, and on the fifth day serum albumin appeared in the urinary secretion. The latter abnormal constituent, even at the present day, is still to be found in traces in the patient's urine.

The urine's acidity was greatly diminished, but remained still above normal soon after recovery from the attack of rubeola had taken place.

On April 28th the patient was in a state of marked adynamia and mental depression, complained of dull lumbar pains and of vesical irritability. Still the secretion of urine had materially lessened, but its degree of acidity had meanwhile risen again to 0.83. Besides medication for the general asthenic condition, urotropin in 0.5 gm. tablets, each dissolved in 50 c.c. of water, was ordered to be taken every three or four hours. This was done in order to overcome the irritability of the bladder as well as to effect incidentally a reduc-

[1] The patient was treated by his family physician during that time; I merely made the examination of his urine.

tion of the urinary acidity. While the vesical condition was ameliorated after 10 gm. of the drug had been taken, the latter failed to exert any influence whatsoever upon the acid degree of the urine. Prolonged administration of this remedial agent, though benefiting the patient's local affection, definitely demonstrated its inefficiency in the reduction of urinary acidity.

Case IV.—Mrs. L. G——, aged thirty-four, Cuban, is afflicted with a general lithæmic condition. On the evening of February 19, 1898, she experienced violent exacerbations of pain in the gluteal and inguinal regions. Oliguria set in the following day. The urine's density amounted to 1.032, and its acidity to 0.79 degree.

Taking the excessive acidity of the urine as an indicator of a perversion of certain systemic processes, which in turn are the precursors of the lithæmic state, I prescribed an alkaline antidote in the form of potassium bitartrate, 2 gm. of which was ordered to be taken three times per diem.

The appended table will illustrate the action of the potassium bitartrate on the secretion, specific gravity, and degree of acidity of this patient's urine.

Date.	Medicine Taken.	Amount of 24 hours' Urine in c.c.	Mean Density.	Mean Degree of Acidity.	Plus and Minus Acidity in Degrees.
February 19.	Morphine	....	1.026	0.52	.....
" 20.	"	860	1.032	0.79	+ 0.27
" 21.	Potass. bitart., 6 gm. per diem.	1,330	1.027	0.6	— 0.19
" 22.	"	1,410	1.023	0.57	— 0.03
" 23.	"	1,460	1.021	0.55	— 0.02
" 24.	"	1,430	1.0225	0.55	.....
" 25.	"	1,400	1.021	0.53	— 0.02
" 26.	"	1,480	1.022	0.49	— 0.04
" 27.	"	1,290	1.024	0.51	+ 0.02
" 28.	"	1,370	1.020	0.52	+ 0.01
March 1....	"	1,510	1.017	0.46	— 0.06
" 2....	"	1,550	1.015	0.47	+ 0.01

The acute symptoms subsided as the degree of acidity fell.

Case V.—Mrs. H. B——, aged twenty-three, American, began to suffer from a severe case of pleurodynia on May 9, 1898. Micturition occurred quite frequently, though the amount of urine voided for the twenty-four hours was rather small. The specific gravity of the excretion was 1.023, and the acid degree 1.05; abnormal constituents were not present. Apart from repeated hypodermatic injections of morphine and atropine for the relief of the acute pain, I endeavored to reduce the urinary acidity. Sodium salicylate in gram doses, three times daily, was consequently ordered to be taken. The degree of acidity and the absolute quantity of acid salts became diminished on the second day, though not sufficiently so to mark it an improvement. On the third day the acid degree of the urine had again fallen somewhat, it being then 0.9. The following day 0.86 degree, and on the fifth day 0.7 degree of acidity, were recorded. The drug was employed for two days longer, without effecting any further reduction of the urine's acidity.

As the myalgic symptom had almost disappeared by this time, no further medication was ventured then. On the ninth day the urinary acidity declined to 0.45 degree, spontaneously to all appearances.

Apart from the report on the action of various drugs upon urinary hyperacidity, the last section was added to demonstrate the clinical value of determining the urinary acidity.

True, the degree of acidity is only one indicator of the systemic condition, but I deem it of greater and more unfailing significance in the recognition of a number of diseases than any other single symptom.

The causes underlying the changes of the acidity of urine are little understood as yet, and until we shall learn more about them our treatment of urinary hyperacidity will naturally remain a more or less empiric one.

NEURASTHENIA AND AUTO-INFECTION.

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In attempting a study of the clinical manifestations of neurasthenia, one cannot fail to note the large and widely diversified chain of symptoms which present themselves, and the endeavor to explain those symptoms brings us in contact with the physiology of the whole economy; *i.e.*, cerebro-spinal, gastro-intestinal, genito-urinary, and circulatory systems; for no one symptom or group of symptoms referable to a single organ exists in a given case, but all proceed in a manner *pari passu* with each other, the preponderance of one class giving rise to the type of the disease—cerebral, cardiac, spinal, sexual, gastric, etc. Although the etiology of this so-called functional disorder has been dwelt upon at length ever since its recognition as a distinct entity by Beard, yet it would seem, at least in many cases of profound type, that some underlying condition predisposing to nerve devitalization was present; some product or group of products formed and circulated in the economy to cause such general disturbance as exists in a well-marked case.

Whether the disease originates primarily from exhaustion of the nerve centres or is the direct result of the action of animal alkaloids and their products on these centres, remains as yet to be demonstrated.

Physiologically the "cell receives by assimilation from the medium which surrounds it certain materials which it converts into its own proper substance or which it may utilize in various ways. There appear to be two phases of the assimilative process: (*a*) one in which the cell transforms the matter which it receives; (*b*) the other, in which the substance transformed becomes an integral part of the cell. The first phase is well marked in the life of a vegetable cell, but is not so distinct in an animal; the second phase, on the contrary, exists to an equal extent in both the animal and the vegetable cell. The assimilating process in the living portion of the cell has received the name of metabolism, while the chemical change by which matters taken up by the cell may be converted into other matters is called metastasis. Thus a cell may by metabolic processes convert dead matter into living matter like itself, or it may by metastatic processes convert dead matter into another form. The dissimilative processes occurring in the living cell consist of chemical changes in the substance of the cell itself or of materials in contact with the cell. Certain materials are separated from cells by a process which may be termed 'cellular excretion,' and other cells may store up certain materials in their interior—a process called 'cellular secretion.'"[1]

Aside from this purely physiological mechanism at work in cells of our bodies, Gautier has shown that they possess fermentative properties independently of oxygen derived externally, which give rise to the formation of alkaloids and other waste products in the tissues. That these toxins exist in normal tissues, and that they are present in the normal fluids of the body —*i.e.*, blood, saliva, and urine—have been abundantly demonstrated.

Thus Bouchard produced, by injections of normal urine into rabbits, slow respirations, contracted pupils, muscular weakness, lowered temperature, abolition of

[1] McKendrick: "Text-Book on Physiology."

reflexes, and death from respiratory paralysis. Gautier extracted an alkaloid from normal urine, which, when injected into rabbits, arrested the heart in systole, paralysis and death following. In Bouchard's experiment, the salts present in the urine (urea, uric-acid and potassium salts) were not in sufficient amount to produce the symptoms noted.

Coppela found experimentally that the healthy blood of a dog, without having undergone putrefactive changes outside of the body, exhibited highly poisonous properties; and, further, that from normal saliva a toxic substance is obtained which is strongly reducing in its action.

In physiological conditions, then, toxins are constantly being formed and eliminated through the various paths of exit of our bodies; when from some retarded or suspended action occurring in pathological states (intestinal torpor with fæcal impaction, altered skin secretion, fevers, or anuria from acute renal congestion) an accumulation of these deleterious products takes place, inevitable symptoms of the condition known as "toxæmia" appear.

Farquharson writes: "No better example of a self-propagated disease can be found than gout, and the same relation which nitrogenous waste products bear to this affection may be assumed by alkaloids developed in the tissues to other diseases." Lépine and Guérin have shown that various acute diseases, notably typhoid fever and pneumonia, are attended with an increased urinary discharge of alkaloids; Villiers found a peculiar alkaloid in the alimentary canals of children who died of broncho-pneumonia. Spica detected the presence of ptomains[1] in the serum of patients suffering from peritonitis; while Selmi, Brieger, Charrin, and Bourget noted either an increased toxicity of the urine or the presence of ptomains in the blood in cases of progressive muscular atrophy, tetanus, uræmia, and puerperal fever. (It will be noted that two of the diseases just mentioned are non-microorganismal.)

While these facts in connection with the diseases just mentioned have been demonstrated, the exact rôle which auto-infection and consequent ptomain poisoning play in the etiology of neurasthenia has not, within the writer's knowledge, been well established. Certain clinical facts, however, are constantly occurring in these cases which tend to lead to one conclusion, namely, that neurasthenia, if not directly produced through the medium of auto-intoxication, is prolonged and its symptoms are greatly aggravated by this concurrent condition.

In every instance, perhaps, the onset (although it may occur suddenly from some exciting cause) is preceded by some evidence of impaired health, of general atony, gastro-intestinal disturbance, sexual excess, or the like. This in itself would tend to alter cell metabolism and prevent normal tissue change, giving rise to the formation of effete products. As the disease advances, the symptoms have been noted in many cases to vary according to the condition of the alimentary tract, prominent among these being the psychical manifestations.

In the ordinary form of neurasthenia dyspeptic symptoms appear early, the gastric contents showing in many cases hyperacidity following the test meal of Leube, the exhibition of even predigested foods giving rise to rapid formation of flatus with distressing abdominal distention. Constipation is the rule, with offensive stools. The reflex nervous phenomena which are present at the onset now become intensified: the flushes of heat are more profuse, palpitation increases, areas of hyperæsthesia or of anæsthesia make their appearance, and exhaustion becomes extreme. Often a complete rest, with change of environment, accompanied by vigorous tonic treatment, are sufficient to relieve this distressing condition; but as often the symptoms become aggravated. The tongue, which was at first highly coated, now becomes dry and brown, sordes appearing on the teeth. Anorexia is complete, and forced feeding gives rise to increased hyperacidity with abdominal distention. The stools are undigested and often clay colored, while the surface of the body may present a sallow, jaundiced appearance.

Coincident with these phenomena symptoms referable to psychic disturbance appear, and added to lack of concentration, irritability of temper, imperfect memory, etc., mental torpor with various visual and auditory delusions develop. These vary in different cases, consisting mainly of confusion of surrounding objects, gloomy forebodings founded on imaginary facts, or apprehensions of fear of impending danger. In the case of a patient under the writer's care, robbers were secreted about the house; the sounds of passing carriage wheels interpreted themselves into warnings, and strange forms of birds and figures filled the sick-room. In the case of another, who had convalesced so far as to be able to sit up and look out of her window, each horse as it passed seemed to nod especially to her, and passers by spat apparently in anger on observing her, while her children acted in (to her) an absurd and nonsensical manner.

In both of these cases, which were characterized by the profoundest symptoms described under neurasthenia, the theory of autoinfection suggested itself strongly, for the reason that both patients had, during this hallucinatory period and, in fact, throughout the entire course of their illnesses, marked evidences of gastro-intestinal derangement, and, concurrently with the improvement of their dyspepsias (as evinced by absence of flatus, clean tongues, and normal stools), the mental pathological state cleared up simultaneously and remained normal throughout their convalescence. In both the pupillary reactions and reflexes were always normal; the kidneys remained active as in health, repeated urinalyses giving negative results. The psychic symptoms present were therefore not due to uræmia, were not those of hysteria, and could not have been produced by cerebral anæmia, as in both cases they disappeared entirely with the establishment of free catharsis and diaphoresis and did not return.

The effect of the elimination of intestinal poisons in causing an amelioration of the psycho-pathological symptoms is plainly demonstrated in the cases just mentioned and also in many other instances. Who among practitioners has not noticed mental torpidity disappear by correction of a disordered liver, and in children delirium abolished upon the relief of constipation? In those whose mental faculties are perverted —among the insane—this is true also.

In a reprint from the "Philadelphia Hospital Reports" for 1892, "Concerning Some of the Alimentary Affections of the Insane," the resident physician, Dr. Amelia Gilmore, writes: "I observe the victims of mental disease on admission to the hospital in restless mania, chattering like magpies, trying to escape from those who have brought them; or in the other extreme of deepest gloom and despondency, where the mental degradation has been so extreme as to induce even the attempt at self-destruction. I observe them daily, taking note of all the changes, the progress, the relapse, the stationary condition, the slow or rapid improvement; and again I meet them going out, possessed of all their faculties, useful to their kind, and happy in the love of their friends. As these conditions and results come before me daily in my hospital practice, I ask the question, 'What has been the influence which has brought them from the state of mental unsoundness to soundness — from insanity to sanity?'

[1] Farquharson: "Alkaloids and their Toxicity."

. . . I answer that it is chiefly the care of the alimentary tract which has brought about this metamorphosis."

In the "Bruntwood Asylum Medical Reports" a number of cases are cited, chiefly those of acute mania or melancholia, in which the mental functions have been entirely restored by producing free elimination and promoting normal alimentary secretion.

If, then, these toxic substances resulting from intestinal putrefaction are sufficiently virulent to pervert the functions of the great psychical centre, the brain, would they not be entirely capable of producing depression of nerve centres?

Ziegler, in his "General Pathological Anatomy," writes: "The detection of microbes is but the first step toward the discovery of the cause of the disease and the mode of its operation." Until the pathogenic microbes giving rise to these toxins have been isolated, it will be impossible to derive "proteins" similar in properties to those described by Nencki with which to produce leucocytosis and thus to eradicate the offending bacteria.

THE EVOLUTION OF SURGICAL PROCEDURE.[1]

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To have studied and worked during the three important periods of surgical procedure has been the fortune of but few of us. To be trained to a routine that has brought a certain degree of success and to have that routine questioned are at least disquieting. When some one questions an old-time procedure, even with facts and logic, he is not immediately heralded into fame. He, though a strong man, is often ignored; but a point well taken soon makes for itself, and gradually progress is made.

In science, as in art, it has frequently happened that method has reached its limit on account of imperfect knowledge of facts and illogical deductions from the same; or perhaps a pre-Raphaelite attention to unimportant detail may have diverted the mind from the essential to the non-essential. But the laws of evolution are irresistible, and even though for time—and time may mean generations—little advance is perceptible, yet sooner or later some discovery is made or some hypothesis exploded, and then will come a period of rapid progress in insight, in knowledge, and in application of the same.

Such has been the history of surgery. For centuries it relied solely on a knowledge of anatomy—it was simply essential to be a good anatomist to rank also as a competent surgeon. Any system that is dependent on but one other, and that other little subject to advance, can hardly become perfect. So it was for all those years the two sister studies went hand in hand, waiting for some potent germ to give renewed growth.

For centuries surgery was but a mechanical trade practised largely by doctors, monks, or even men of low degree, as well as by the surgeon proper. As intelligence increased and the sway of bigotry decreased this art was practised by those more specially trained. This specialization resulted naturally in improved methods.

The barber Paré in 1552 courageously substituted the ligature for the cautery, the bleeding of all operative wounds previous to this being controlled by the hot iron. Insignificant as this incident may seem to be, it nevertheless marked an epoch. From the time of Ambrose Paré until 1846—three hundred years—little advance was made. Full skill had been attained in reading indications and in the manipulative work, but unfortunately the same horrors surrounded the operating-room, the same complications persisted in keeping up the death rate, so that the inscription to the inferno, "All hope abandon ye who enter here," might well have been placed over every surgical ward.

It has been reserved for the latter half of the nineteenth century to see a positive and continuous advance in all departments of applied science—an epoch of research, nothing being accepted unless substantiated by proven fact. In 1846 Morton demonstrated the value of ether in overcoming pain; in 1847 Simpson added chloroform. The use of these anæsthetics materially enlarged the sphere of surgery, allowing the surgeon to deliberate, to give attention in an operation to many details heretofore slighted, on account of extreme haste made necessary by pain. Pain annulled, shock wonderfully diminished, and time given to precision were factors in favor of the patient.

The first training-school for nursing was established in 1840. Previous to this time a nurse was a common domestic, her points of merit being that she must not be Irish or a drunkard. Miss Florence Nightingale became interested and entered a school for deaconesses in 1815, and from that time wrote many elaborate and practical articles and works on nursing and hospital management, constructed from the unique side—that of the best interests of the patient.

These several notable advancements, though material, were largely the result of chance. There were yet to be made several even more important discoveries, the practical application of which have revolutionized all surgical method. The fact remained that with all care in after-treatment, with the full knowledge that ventilation, cleanliness, and segregation were important factors in hospital mortality, the death rate from amputation was twenty-seven to sixty per cent., so that eminent surgeons claimed no better results than the tyro. The death rate for ovariotomy was fifty-eight per cent.; for childbed two and one-half per cent.

The conscientious man of the day must have contemplated this with agony of mind, knowing his duty but fearing the result. The question must often have been asked, Why does this awful mortality continue? Why should operations so certainly terminate in inflammation, erysipelas, septicæmia, pyæmia, tetanus, or gangrene? These questions burned deeply into the mind of many an operator, and each was alive to any discovery that might aid in solving the problem.

The one factor noted as most constant was putrefaction, whether excessively as in gangrene or to a less degree as in ordinary inflammation. Some connection was suspected to exist between this putrefaction and the unfortunate results. It was noted that when little fermentation existed a better healing resulted, while an excess meant pus, inflammation, etc.

An effort was made to imitate nature, which allowed a subcutaneous fracture to repair with little disturbance, and to operate subcutaneously if possible.

In 1800 Bichat, the father of pathology, and since then many industrious surgeons have endeavored to discover the cause or causes of post-operative lesions. The microscope had been utilized in the study of the pus and fluids that bathe wounds, and many low forms of life were found. In 1850 the anthrax bacillus was discovered. Pasteur in 1857 proved that fermentation could occur only as a result of the presence of certain organisms. This accomplished the downfall of the hypothesis of spontaneous generation, so ardently defended by Bastien and others. Tyndall showed in 1870 that in the air were always floating minute particles of dust. These wonderful and frequent discoveries were but the result of years of laborious thought and research.

[1] Read before the Practitioners' Club of Jersey City, October 11, 1898.

Lister, operating in Edinburgh, dissatisfied with the poor results of the day, death and distress, had come to his mind the use of carbolic as a disinfectant in public places, and thought it might be of similar service on wounds, and so applied it, with a most marvellous result; pus diminished, inflammation decreased, and the frightful mortality lessened. As a result an attempt was made to apply the same more scientifically; and thus in 1867 he gave to the world his antiseptic theory of wound treatment, that created another epoch. This was styled by Lister the antiseptic method. Recognizing the various avenues of ingress of germs, not then specialized, as the science of bacteriology was in its infancy, he built around a wound a wall of protection that was intricate in detail, logical in reason, and very successful in practice, but clumsy in method. Its early application was naturally upon accidental wounds, compound fractures, etc.

Let me describe his method, now obsolete but yet suggestive. Not having a full knowledge of the different disease-producing germs, their life history, habitat, conditions necessary for growth and effect on the economy, as well as the local process incident to their presence, Lister had the site of operation washed with soap and water, then scrubbed with 1–20 carbolic acid. The operator's hands after cleansing were scrubbed in 1–20, and then anointed with carbolized oil, 1–20; ligatures of silk were dropped in 1–20. During the operation a spray of 1–40 was thrown over the wound, and frequent irrigation of 1–40 to the wound. The dressing was a carbolized gauze made stiff and impervious by resin; eight layers were applied, and pieces of rubber tissue placed between the sixth and seventh and seventh and eighth layers: a strip of protective, colored green, was laid on the wound to prevent adhesion of the dressing to the same, as well as to keep any air from it. In this protective was a salt of lead, which became blackened by the changes which are incident to decomposition, or suppuration, as we now term it.

Thus you see he suspected the hands of the operator and sterilized them, the ligatures and instruments, and particularly the air, which he most feared. So great was his confidence in carbolic that to this day he relies on it alone to sterilize his material.

As a result of this logical but elaborate process the frightful mortality greatly decreased, and the disease complications so common to wounds nearly disappeared. Pus remained, but it was not so abundant nor was it accompanied by marked cellulitis.

The Listerian method and its arguments were championed or derided for years by many a strong advocate or opponent. The literature of the day teemed with articles pro and con. Strangely enough, some of the opponents of this method, for instance Gamgee, could present a series of cases showing excellent results. He covered the limb subject to the compound fracture with an abundance of cotton, and between the splint giving rest and the cotton excluding the air the secretion from a wound became inspissated and consequently practically germless, as pathogenic germs need a certain per cent. of water to thrive. Gamgee would leave his cotton dressing on a month, and on removal obtain very fair results.

There were two points in the method of Lister on which he laid much importance—the presence of germs in the air and the use of carbolic. Gamgee, having a different idea, gained an approximate result, not knowing that he was carrying out the essential principle of Listerism—protection from air by his cotton and inhibition of present germs by inspissation.

The improved methods of research instituted by Robert Koch enabled the bacteriologist to isolate from a fluid or particle the several germs contained, and to make cultures from them on appropriate media, to see the effect of inoculation by these pure cultures, and thus to know accurately each germ and to differentiate one from the other.

In time a fund of information was obtained as to the natural habitat of each germ and the conditions necessary for its existence; what promoted its virulence, and what deprived it of the same. It was found that lesions were not always due to a single germ, but that several acting together might induce disease. Thus pus was shown to be the result of the infection of more than one germ. Several pyogenic germs were discovered, some, as the staphylococci and streptococci, being the most common. It was shown that the staphylococci preponderated on the skin and the streptococci in extraneous dirt: then, again, that the more acute inflammation, such as erysipelas, was a streptococcus disease, while in ordinary suppuration a staphylococcus was generally more abundant. More than this, of the air-germs the saprophytes predominated. If a cubic foot of glass be allowed to remain exposed an hour in an operating-theatre, not less than one hundred organisms will settle on it, and they will have very little potential value as to inducing disease on account of exposure to sunlight and absence of moisture; whereas the germs of the skin, hidden from sun, are more pathogenic, and are, from their larger numbers, constant presence, and greater virulence, more of a menace to the success of an operation.

So, gradually, and with enlarged and more exact information, this elaborate technique of wound treatment was simplified. First with many misgivings the spray in the room before the operation was discontinued; then the spray on the wound—irrigation of wound—the complex and heavy antiseptic dressing—in fact, all the antiseptic treatment of the raw surface was stopped, for the reasons above given.

The air, being proven to be a minor source of infection, was not considered during an operation, and a filtering sterile gauze was found a better dressing than were the resinous, weighty, impervious gauzes of Lister. As all chemicals which are in sufficiently strong solution to kill microbes act as irritants, it became manifest that carbolic and all other antiseptic substitutes for it produced superficial necrosis of the tissues and retarded healing and often produced pus. In fact, it was found better to allow no liquid to touch the surface, relying on the serum to bathe it and the leucocytes to act their normal part.

Thus was evolved the third stage of wound technique, the aseptic or German method, thanks to Robert Koch.

With this much simplified process we cleanse and treat the neighborhood of the wound, not the wound itself, in contrast to the antiseptic method, which treated the wound, however innocent. The steps of this process are so familiar it is hardly necessary to detail it.

It being known that the microbes of the skin reside mostly in the glands, it is washed and scrubbed thoroughly with hot water and an alkali soap, which being rinsed off, ether or alcohol is applied to remove yet further the fat, after which a strong solution of carbolic and, lastly, of bichloride is rubbed over the skin.

Hands are cleansed in about the same process, much care being given to the nails. Instruments are boiled in a one-per-cent. soda solution, and all that touches the wound during and after operation, as gauzes and dressings, are rendered sterile by exposure to steam. All non-absorbent ligatures are discarded and catgut is used entirely (1869).

As a result, the wound is irritated as little as possible by chemicals or foreign bodies, and catgut, being soon absorbed, can be used plentifully to stanch bleeding and the wound closed without drainage.

Thus is seen how the purely mechanical art evolved

into a simple yet elaborate method—simple as to reason, elaborate as to application; how, instead of much attention as to instrumentation, speed and accuracy being desirable, there is now a comparative indifference as to the time necessary for an operation. Instead of acknowledging defeat and sacrificing a part, now an attempt may be made to preserve the same.

The rust of bigotry which interfered with research was removed in the sixteenth century, when the monks lost their control. But it takes time to raise a generation of thinkers, and the reaction from monastic repression was slow to develop. Much more slowly were facts ascertained and proven, and even as late as 1857 it was believed by savants that life could develop *de novo*.

As is often the case, a great discovery is made in a simple way, and yet its true gist is not recognized, and it is elaborated with scientific precision, with the result of producing a chaotic mass of details; then by gradual gain first one fact is disproven and another is found not relevant, and so on, until we may reach the sure truth in the most direct manner.

In this we have the three periods of operative surgery—the simple instrumental; the elaborate antiseptic; the again simple aseptic, when we have but to know how to wash and be clean.

AN EMULSION AND A METHOD FOR THE TREATMENT OF PURULENT OPHTHALMIA AND OPHTHALMIA NEONATORUM.

By NORBURNE B. JENKINS, M.D.,

KNOXVILLE, TENN.

The treatment laid down in the text-books for the above-mentioned diseases often results disastrously to the patient. The various potent solutions and crayon applications of nitrate of silver, alum, sulphate of copper, etc., in many instances work more injury to the eye and its appendages than the diseases which such agents are recommended to relieve. Sloughing, perforation, discoloration, and many other permanent injuries to the tissues of the eye and lids may follow the continuous use of the mild solutions of nitrate of silver, or may result from a single application of the more powerful caustics.

Probably the least injurious and most efficacious remedy in the treatment of all forms of purulent diseases of the eye is an emulsion, the formula and directions for the use of which are herewith given:

℞ Argenti nitratis ..... gr. v.–x.
Acaciæ ..... ʒi. (or q.s.)
Aquæ destillatæ ..... ʒss.
Petrolati liquidi ..... ʒss.
M. Make emulsion and put it into a wide-mouth two-ounce bottle. Shake well before using.

When properly prepared, this emulsion is of the consistence of thick cream and is milky white in color. After it has stood for a few hours there takes place a partial separation of the ingredients, which immediately and perfectly re-emulsify if the mixture is violently shaken. Since the nitrate of silver in any combination has a tendency to oxidize, the emulsion, a few days after being made, will probably lose some of its strength.

In the initial stage of blennorrhœa, the customary treatment—*i.e.*, iced compresses, Leiter's tubes, leeches, frequent cleansing with mild solutions of corrosive sublimate and of potassium permanganate, etc.—is to be followed.

When suppuration is established, the emulsion may be used in the following manner: The patient is placed on his back, the lids are everted, and the eye is thoroughly cleansed with a sterilized 1 to 5,000 solution of corrosive sublimate or permanganate of potassium. The wash should be used as hot as can be borne by the patient. While the lids are still everted, an assistant drops two or more minims of the emulsion into the eye. The surgeon then manipulates, for about thirty seconds, the everted lids in such a manner that the emulsion may penetrate to the utmost recesses of the folds of transition of the conjunctiva. In this manipulation consist to a great extent the proper application and efficacy of this remedy, inasmuch as the fornix conjunctivæ cannot otherwise with safety be medicated. Another method is an application with a camel's-hair pencil, to be introduced under the everted lid into the fornix conjunctivæ. This is a hazardous procedure when practised by any but the deftest fingers. Extreme care is to be observed that the conjunctiva of the cornea, lids, and sclerotic be not wounded, as such injuries are shortly followed by an exaggerated focus of infection.

The emulsion at first should be used every twelve or twenty-four hours, according to the severity of the disease. Afterward it may be applied once in twenty-four, forty-eight, or sixty hours, this being continued until the discharge entirely ceases. In the interim of the applications of the emulsion, as often as any purulent secretion shows itself the eye is to be washed with the above-mentioned solution of corrosive sublimate or permanganate of potassium.

For a few hours following the use of the emulsion, the resultant discharge, altered by the presence of this preparation, should not be confounded with pus. The nurse is to be given instructions as to the difference in character of a purulent discharge and that occasioned by the emulsion, since the eye should not be washed until a purulent secretion appears, for fear that, with unnecessary interference, the eye may become reinfected.

For about half an hour after the application of the emulsion a slight pain is experienced, which is not so intense as that produced by the use of much weaker aqueous solutions of nitrate of silver.

This emulsion is offered as a substitute for the aqueous solution in the "method of Credé" in the prophylactic treatment of the eyes of the newborn.

The formula given below is also of value. The chief objection to this is its eye-destroying qualities when improperly compounded, something which too often happens, and therefore it is not recommended.

℞ Argenti nitratis ..... gr. v.–xv.
Aquæ destillatæ ..... q.s. ad saturandum.
Petrolati ..... ʒi.
Misce bene, fiat unguentum et signetur: Keep in a cool place.

Discovery of the Smegma Bacillus in the Sputum.—Dr. O. Poppenheim, in the *Berliner klinische Wochenschrift*, reports the following case: A woman, thirty-five years of age, suffering from chronic diarrhœa, died with the symptoms of pneumonia and œdema of the lungs. Microscopical examination of the sputum stained with Gabbot's solution revealed the presence of numerous red-stained particles. As these were considered tubercle bacilli, the positive diagnosis of tuberculosis of the lung and intestine was made. The post-mortem examination, however, did not show a trace of tuberculosis. From careful examination of numerous cover-glass preparations with the use of a variety of staining processes, it was concluded that these were in reality smegma bacilli. It was especially noted that this deeply stained bacillus offered very slight resistance to the decolorizing action of alcohol. In conclusion, the author dilated upon the staining processes which serve to differentiate this bacillus from that of tuberculosis.

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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EPILEPSY AND OPERATION.

DURING the past few years it has become generally recognized that epilepsy from traumatism, though apparently a condition that could be favorably influenced by operation, is not often really so. Many patiens have been operated upon and a compression relieved, a "cicatrix" excised, a cyst evacuated, a spicule removed, or nothing macroscopic found, and have been discharged cured, but many such patients have after various periods relapsed and have returned to the same or sought other surgeons. The reason is not far to seek, and it is that the cicatricial formation and adhesions developing at the site of operation, no matter what the original condition, very soon form a focus of irritation which reproduces the condition existing before operation, or one very much like it. When this fact came to be recognized, surgeons began to look about for some means to prevent the formation of adhesions between the cortex and the dura, for it was to such adhesions that most of the trouble was referred, and the introduction of various foreign substances was attempted for this purpose. Naturally thin, smooth substances suggested themselves, and gold foil, tin foil, and rubber tissue were among them.

In some cases these bodies have been induced to remain in place for a time, and certainly while they are in place no adhesions can form under them. But does this not merely move the site of the adhesions irom the centre of the foreign substance to its edge? Foreign bodies certainly have remained harmlessly in all parts of the body for long periods, but is there any record of one which has not sooner or later been surrounded by connective tissue, which is practically cicatricial tissue? In most parts of the human organism this tissue serves a useful purpose, but on the surface of the brain it is just what we want to avoid.

It is very probable that between the healthy dura and a cortex which had never been the starting-point of any epileptic manifestations adhesions might occur which would not necessarily cause epilepsy, but, in a cortical area which has been the focal point of a Jacksonian epilepsy, it seems certain that the circulatory conditions in the neighborhood are such that a very little irritation would serve to start new or maintain the old conditions. We must remember that when we speak of cicatricial tissue we do not mean tissue in mass, but rather a microscopic diffusion of connective tissue through a more or less definite region.

Recently it has been suggested, evidently with the general idea that an animal membrane would be better than one of an inorganic material, that the sterilized lining membrane of the shell of a fresh egg be used, and the substance certainly has all the advantages of any of the materials previously suggested, and is, furthermore, easy to obtain. It is also almost certain that its fate in the body would be the same as that of a sterile catgut suture,—that is, it would be very promptly absorbed and replaced by new tissue. But are we any better off than we were before? The only kind of tissue which can permeate and absorb such a membrane is connective or cicatricial tissue, and there is apparently no reason for any other result than is seen with the other substances. It may be that the use of such an absorbable substance will make the process of new tissue formation so smooth and non-irritating that the adhesion between cortex and dura will be insignificant, but even then there may still be cicatricial tissue in the cortex itself, which will keep up the irritation. It is the latter which is probably the most active element in starting the convulsion, and its removal seems to present an almost hopeless surgical problem. We may diminish the irritability of such a damaged cortical area with drugs, but to attempt to eradicate the cause by surgical means simply substitutes a new connective-tissue formation for an old one. However, it is, on general principles, an advance if we can secure for our purpose an absorbable and non-irritating substance to interpose between the cortex and dura, and if we can thus prevent the formation of extensive adhesions we shall eliminate one important element in the problem. The removal of scar or connective tissue from the cortex itself is quite another problem, and, as the occurrence of convulsions is to a large extent undoubtedly dependent upon its presence, it is a very important aspect of the case. When there is adhesion between the cortex and dura, there is very apt to be more or less cicatricial tissue in the cortex, and of course the removal or prevention of surface adhesions would have no effect on such tissue. Excision of the offending part of the motor tract has been tried a number of times, but such an operation is not apt to be undertaken without very serious consideration.

A NEW DISEASE VIRUS (MYXOMATOUS VIRUS).

SANARELLI, of yellow-fever-bacillus fame, has recently described a new form of disease-producing virus which, if his discovery is verified, may throw a new light upon the dark chapters in the history of syphilis, rabies, and other infectious diseases. He publishes in the *Centralblatt für Bakteriologie*, vol. xxiii., 1898, p. 865, his observations on a disease of rabbits, which he has had in his laboratories for the past two years. This disease first shows itself as a blepharo-conjunctivitis, which goes on until the eyes are closed and the small

opening between the lids is filled with a thick catarrhal purulent secretion. At about the same time there appear in different parts of the body small subcutaneous tumors of various sizes, and there is a general diffused thickening of the animal's skin and mucous surfaces. Death usually occurs in from two to five days, and there are found gelatinous subcutaneous tumors of an elastic consistence and rich in blood-vessels, hypertrophy of the lymphatics, orchitis, and hypertrophy of the spleen. Histologically, the body throughout would seem to be the site of a general myxomatous infiltration. This myxomatous material is the true cause of the disease, according to Sanarelli, and he has been able to convey the disease from one animal to another in as many as four different ways. This material—serum—obtained from the myxomatous virus, is absolutely sterile and contains no organisms that are appreciable to the eye, aided with the best optical helps. Mice, guinea-pigs, monkeys, and birds are refractory; in one case he was enabled to infect dogs to a minor degree. Experiments made upon man were, as a rule, negative. There was some slight œdema following the injections, reddening and reaction of the conjunctiva, but this soon disappeared. Experiments bearing upon the question of acquired immunity with the serum were negative. The observations are of interest, in that we here apparently have a disease-producing agent which, so far as yet known, has no organized units of structure.

ANTIVIVISECTION EXACERBATIONS.

Some of the non-professional journals, notably and most acutely *Life*, seem to be afflicted with a curious form of antiscientific mania, which manifests itself in violent opposition to some phase of scientific work or in violent advocacy of some "pathy" or "ology." *Life's* antivivisection hysterics, which occur at intervals, often lead it into pitiful imbecilities, and never by any chance assist in the propagation of wit or humor—the object and excuse for the existence of that publication. The good soul who writes the editorials for *Life* and the ignoramus who perpetrates the antivivisection "jokes" or satires seem to take the view—if people who know so little about a subject can be said to have a view—that that form of physiological and pathological investigation which they designate as vivisection is, in the first place, useless; and in the second, cruel and carried on cruelly by men whose senses are so blunted by the "sufferings" which they cause that they do not appreciate what they are doing; and, as an addendum to this side of the question, that the budding mind of the medical student is influenced in the same way. With such persons it is utterly useless to try to prove what experiment upon living animals has done for the advancement of medical science. Their mental condition does not permit them to weigh the value of evidence and to consider its source. The instances in which experimentation upon animals has been useful to the human race are so numerous, and the discoveries which have been led up to by such work are so important, that we should imagine that even the profound thinker who directs the mercilessly withering editorials and medical "jokes" of *Life* would find a few moments to cerebrate a little upon the subject. If he is capable of the latter process, there is still hope. The charge that experiments upon living animals are carried on with careless cruelty, and that in this way they incite the beholder to acts of cruelty and develop in him a disregard for suffering in helpless animals, is nothing less than monstrous. A very large proportion of experiments of this nature are carried on with the animal etherized or chloroformed, and the subject of experiment is never allowed to recover consciousness, so that there is no infliction of pain whatever. Objectors to this form of experiment ought to be strict vegetarians, ought never to wear leather shoes, and really ought not to take quinine if they suffer from malaria, for they might by so doing cause pain and death to the plasmodium, which is an animal. Another very large proportion of experiments upon animals consists in inoculations with various organic or inorganic matter by means of a hypodermic syringe, which causes an infinitesimal amount of pain and gives us a line of investigation which has led to enormously important results.

If the antivivisectionist writer will only stop to investigate, he will find that, in this country certainly, animal experimentation is rarely carried on before a large class, for the very practical reason that a large class cannot profit by the demonstration. Furthermore, on the rare occasions upon which such demonstrations are given in our medical colleges, the spectators are from the advanced classes of students and are not influenced by the details of the experiment, because they are interested in its result and the principle which it explains or elucidates. Better men than the editors of *Life* have mistaken coolness, self-possession, and decision of action on the part of an experimenter, or a surgeon for that matter, for indifference and cold-bloodedness. We do not doubt that occasionally pain is inflicted upon animals during experiment or investigation, but we do deny most emphatically that it is done needlessly or carelessly, and that the results do not justify the means. Physiologists and pathologists are not in the least more cruel or indifferent to suffering than other people, and there is a personal equation among them as among others—a fact which should not be forgotten.

However, argument with a layman on such a subject is rather profitless, even when the layman knows what he is talking about, and we cannot hope for much improvement from *Life*; but if any of the editor's relatives should have diphtheria, we hope that antitoxin will do what it almost always does, so that he may have a practical demonstration of what one line of animal experimentation has led to. We fear, however, that the editor in question is a "faith curist" and that the antitoxin would not have a chance. In the mean time we hope that the great intellect which presides over the destinies of *Life* will hire a first-year medical student, if he can do no better, to edit his medical "jokes" and criticisms, and will, we venture to add, have a few of his cartoonists led about and shown some of the physicians of this or any other large city,

so that they may correct the impression which they seem to have that such gentlemen look like bewhiskered gorillas in high hats and frock coats.

MEDICAL NOMENCLATURE.

The average worker in any scientific line apparently has not the time or the inclination to devote himself to the classics, at least enough of them to enter into word-building without encountering difficulties, and he often produces an etymological monstrosity when he names the products of his scientific brain. To the reader or the hearer who has some regard for accuracy in the formation and use of words, such combinations as "radiograph" are apt to give a shock. If such an observer remonstrates, he is likely to be called a purist in a somewhat sarcastic tone, and is certain to be thought "affected." There is, of course, no reason that new medical and scientific facts should not receive a properly constructed designation from the point of view of the etymologist, and it would be a good plan if they who may discover or invent a condition or a fact which they think requires a new name would be sure that they are correct in their etymology, or otherwise consult somebody able to put them right. One of the first and most important rules which it would be well to follow, and one which is perhaps most often broken, is to avoid combining in one word roots or stems from different languages. "Radiograph" is a particularly flagrant example of violation of this very simple rule, especially as there is a good Greek word corresponding to the Latin word *radius*, which would make a perfectly sound combination with the latter half of the word. Moreover, the word does not really express clearly the idea it was intended to convey, and lately the much more appropriate term "skiagraph" has supplanted it to a great extent. Medical nomenclature is exposed to enough sources of contamination as it is, and when we can we should see to it that no unnecessary monstrosities survive. Usually when objection is made to one of these mongrel terms, an attempt is made to silence the objector on the score of the convenience of the term; but this is only another way of saying that those who defend such manufactures are ignorant or careless, and it emphasizes the desirability of attempting in the beginning to direct such things properly on the part of those who have had better opportunity or more inclination to gain the requisite knowledge. After a defectively formed term once starts upon its way, it is very difficult to prevent its general distribution, and, as it is just as easy to form words properly as improperly and carelessly, it is worth the effort to keep our nomenclature as accurate as possible by care in launching new terms. There are already so many medical terms in common use now against which the above objection can be justly urged, that it seems almost hopeless to work against their retention in good usage; but a process of slow elimination might eventually rid us of the worst of them. There are so many of them that it is scarcely worth while to mention any, but two which will probably always be with us are "ovariotomy" and "appendicitis." The etymological objection to both of these terms is obvious, but their use is so frequent and of such long standing that to displace them is probably impossible. The most that we can really hope for is probably to induce the word formers to be a little more careful with their constructions, and also to restrict their production as much as possible.

"REPUTABLE" PHYSICIANS.

According to the *Medical Press* of September 28th, "Professor" Munyon, who is said to hold an honorary degree from the University of Tennessee, swore upon the stand in a suit against Dr. Deane, a qualified British practitioner whom he had hired to do certain work connected with his advertising practice, that he could get half a dozen reputable medical men in England to take Deane's place. The *Medical Press* deplores the fact that the assertion thus made under oath may be substantially correct.

To be sure, Dr. Deane's name has been taken out of the "Medical Register," and he can no longer be considered in any more favorable light than is his newspaper-advertising employer; still, when we know that twice as many physicians are graduated each year as can possibly make an honest and honorable living, it is not so surprising that a few fall by the way and seek employment from quacks and fakirs. This city is not without its establishments of healing, presided over by a genius for attracting the gullible public, often not a medical man at all, in which the treatment is carried out by regular graduates, not capable of self-support in more legitimate ways.

ANOTHER VICTIM TO THE CHRISTIAN-SCIENCE FAD.

The Christian Scientists number their converts not only among the ignorant class, but also within the ranks of the cultured. A striking example of the manner in which a brainy and talented person may be led away by perverted ideas has recently been afforded in the sad death of the well-known novelist and essayist, Harold Frederic. Although Mr. Frederic is an American, he has been residing for some time in England, and had been treated—according to a special cable to *The Sun*—by a local physician for a blood disorder and paralysis following rheumatism. The doctor was then dismissed, and Mr. Mills, the leader of the Christian Science fad, was summoned with Mr. Frederic's consent, and treated him according to the peculiar methods of the sect. He was permitted to eat and drink what he liked, and soon suffered a relapse. A physician was again summoned to attend him thirty hours before his death. He was then moribund, and it was impossible to revive him. Mr. Frederic's daughters and others testified that he was practically insane on the subject of Christian Science for a month before his death. The above facts were brought out at the inquest, which, under the peculiar circumstances attending the death, was deemed necessary. The investigation, however, was only a preliminary one, and

the inquest was adjourned, when the case will be thoroughly probed. It is to be hoped that the authorities will insist that in future the Christian Scientists and others of a similar kind will not be allowed to wreak their will on those misguided members of the community who are sufficiently weakminded to trust their own lives or the lives of their families in their hands. The principle of freedom of judgment, as in this instance, may be carried too far.

IMPORTED PLAGUE.

The dangers of dealing with the germs of deadly diseases in laboratory experiments have been long known, and not infrequently illustrated in deplorable loss of valuable lives. No more striking instance of direct and unmistakable transmission of fatal disease in this manner has occurred than that of the loss of three lives in Vienna from infection with bubonic plague, mentioned in our news columns. The latest victim, Dr. Müller, is well known to many American physicians, and the sad ending to his devotion to science and his untiring attendance on the first victim, Dr. Nothnagel's assistant, make his fate peculiarly sad.

Dispatches from Vienna report that all animals used in the laboratory experiments have been killed and cremated. These and all other precautions should be taken promptly to expunge by science that for which, in its efforts to benefit mankind, it has been directly accountable. Bubonic plague has flourished before in European countries and might do so again, but it would be a terrible blow to science should this prove the spark before the flame.

News of the Week.

Surgery in a Burning House.—A fire broke out in a house in Scranton the other day, while one of the occupants was being operated upon for appendicitis. The other occupants of the house and some of the neighbors fought the flames while the surgeons continued their work. The fire was extinguished and the abdominal wound was closed at almost the same moment, and the patient came out from under the anæsthetic to find himself poorer through both operations.

The Emperor of China is said to be dying, not improbably as the result of systemic poisoning. He was recently examined by the physician of the French legation at Pekin, who, according to a dispatch to the London *Times*, reported that the poor lad is suffering from albuminuria, incipient phthisis, and great debility. Skilled medical attendance is necessary, the physician reports, in order to save his life, and this the Empress Regent is not likely to provide, if the suspicions of poisoning are correct.

Election at the County Medical Society.—At the annual meeting of the Medical Society of the County of New York, held October 24th, the following officers were elected: *President*, Dr. S. Oakley Van der Poel; *First Vice-President*, Dr. Henry Clarke Coe; *Second Vice-President*, Dr. James Clifton Edgar; *Secretary*, Dr. William E. Bullard; *Assistant Secretary*, Dr. John Van Doren Young; *Treasurer*, Dr. John Sidney Warren. This is claimed as a victory for the advocates of a "wide-open" town, as regards the dispensing of free medical treatment.

The Yellow-Fever Scare is over for this year, frosts having cooled the heated imaginations of the Mississippians. The State boards of health of Mississippi and Louisiana have removed all quarantines, and doughty Governor McLaurin is now at liberty to attend to his duties at the capital or to go to his own home.

A Fire at Bellevue Hospital.—The Marquand pavilion in the Bellevue Hospital grounds caught fire on October 19th. A curtain in the operating-room on the second floor was blown in and set on fire by a gas jet. The nurses in the burning pavilion put out the fire. Nineteen years ago the burning of a pavilion in the hospital grounds resulted in the loss of several lives.

Official Drugs Only.—The trustees of the Cincinnati City Hospital have adopted a rule that the physicians in the hospital shall not be permitted to prescribe any remedies not included in the United States Pharmacopœia, all proprietary and secret remedies and such as are advertised at half-rates in the *Philadelphia Journal of Hypocrisy* being thereby shut out. The *Pharmaceutical Era* says that the patients will miss a host of good things, but thinks there will be some compensation in the fact that they "cannot henceforth be used quite so freely as patients of city hospitals generally are for the purpose of experimenting with new drugs, of unknown therapeutic action and chemical constitution."

The Plague in Vienna.—Much consternation has been caused by the appearance of bubonic plague in Vienna. There have been four cases, three of them fatal, according to the latest reports. The disease was contracted in the first instance in Nothnagel's laboratory, where work was being done with cultures of the plague bacillus. The first death was that of an assistant in the laboratory, named Barsch or Barisch, and the second was that of Dr. Müller, an assistant to Nothnagel and a worker in the same laboratory. A nurse who attended Herr Barsch was another of the victims. The disease is of the pneumonic form, which is said by Kitasato and Nakagawa, in their article in the "Twentieth Century Practice," to be exceedingly contagious and almost invariably fatal. In these cases, they add, the plague bacilli are found sometimes in pure culture in the sputum, and it is doubtless upon this fact of the elimination of an enormous number of the specific micro-organisms in the bronchial secretion that the extreme contagiousness of the pneumonic form depends. Every precaution has been taken to prevent a further extension of the disease. The sick, together with a priest and three nuns who assisted in administering the last sacraments of the church to the dying, are isolated in a pavilion of the Franz-Josef Hospital,

outside the city. Communication of outsiders with the medical attendants is had only by telephone. The plague cultures were originally brought from Bombay about a year ago by the Austrian commission sent there to study the disease. The pathological laboratory has now been closed, all cultures and animals under experiment have been destroyed, and lectures have been suspended. The outbreak of the disease among these workers is deplorable, but it would appear to have established the pathogenic nature of the bacilli beyond question.

Two Army Appointments.—The public press is responsible for the information that Surgeon-General Sternberg has selected two medical men from Houston, Tex., for special work in Cuba and Porto Rico. Neither one is eligible for membership in any of our regular county or State medical societies. One has been out of practice for several years, and is a great advocate of the dosimetric system of therapeutics; while the other is unclassified. The surgeon-general evidently wants to please all sorts and conditions.—*Southwestern Medical Record.*

Dr. Alphons von Rosthorn, of Prague, has been appointed to the chair of obstetrics and gynæcology in the University of Graz.

Drunkenness and Insanity.—The provincial asylums inspector of Ontario does not look upon alcoholic intemperance as a very important factor in the etiology of insanity. In his recently published report it is stated, on the authority of statistics of a large number of cases, that excessive drinking could be regarded as the cause of insanity in only thirty-five out of five thousand cases.

Methyl Blue is Recommended for Malaria by Dr. Cardamatis, of Athens. He has employed it, in daily doses of ten to twelve grains, in two hundred and seventy-five cases of acute and chronic malaria, and claims to have been successful in curing ninety-three per cent., and in preventing a recurrence in most of the cases, even though the patients continued to reside in malarious districts.

New Buttons.—Dr. I. B. Perkins, of Denver, has devised two buttons for intestinal anastomosis. One is made on the principle of the Murphy button, except that it is made in eight parts, and when in use holds the intestine just as does the Murphy button. These sections are held together by light catgut and a coating of gelatin, which dissolve readily, allowing the button to come away in four sections. The other button is also made in sections in the same manner, but gets its pressure from several strands of rubber instead of from the spring, as in the other button. The advantage claimed for these buttons is that with them the full lumen of the intestine may be preserved, and, coming away in sections, the button will easily be passed.—*The Colorado Medical Journal.*

The Southern Surgical and Gynæcological Association.—The annual meeting of this association will be held in Memphis, on November 8, 9, and 10, 1898. This promises to be one of the most successful sessions in the history of the association, and papers have been promised by many of the leading surgeons and gynæcologists in the country, especially of the South. Members of the medical profession generally are cordially invited to attend. The secretary of the association is Dr. William E. B. Davis, of Birmingham, Ala.

The Study of Malaria.—A commission for investigating the various questions associated with malaria has been appointed by the British colonial office and the Royal Society, and consists of the following members: Drs. C. W. Daniels, of British Guiana; S. R. Christophers, of Liverpool; and J. W. W. Stephens and Mr. John Lucas Walker, of Cambridge. Drs. Christophers and Stephens will go to Pavia to work in the laboratory of Golgi, and thence to Rome to work in Cetti's laboratory. The commission will eventually proceed to Africa, when its first work will be to determine the clinical varieties of malarial fevers occurring there. Robert Koch, who has been for some time in Rome, where malaria has prevailed to an unusual degree this summer, has found that tropical malaria is the same as the æstivo-autumnal form of Marchiafava and Bignami.

Dr. J. Crocq, of Brussels, died recently, in his seventy-fifth year. Dr. Crocq was a member of the Belgian Senate, as well as professor of special pathology and therapeutics at the University of Brussels.

Association for the Prevention of Tuberculosis.—Several societies have been founded in England during the past summer, having for their object the dissemination of knowledge concerning tuberculosis and its prevention. This is to be effected, according to the circular of one of the associations, by the education of public opinion and the stimulation of individual initiative by means of a central bureau for the collection and distribution of information as to modes of diffusion of tuberculosis and measures of prevention; the circulation of pamphlets and leaflets setting forth in plain language the results of scientific investigation of the above points; public lectures by men approved by the council; addresses at congresses and other public gatherings; co-operation with other societies having for their object the promotion of public health; the co-operation of the public press; the holding of periodical congresses and the issue of an annual report; the promotion of the establishment on a self-supporting basis of open-air sanatoria for tuberculous patients. It is also proposed to influence legislation looking to prophylactic measures.

Women and War.—Although women be perforce non-combatants, the services they are able to render to those who fight have been very much in evidence during our recent war. As an instance less generally known than some others, we would cite the fact that the New York Infirmary for Women and Children prepared a ward for the reception of soldiers returning from Montauk Point, and during the month of September twenty-nine fever patients were there successfully treated by the physician in charge, Dr. Helen Baldwin. The microscopical examinations of the blood that have now become a *sine qua non* in the

management of fever cases were made by internes who had been drilled in the laboratories of the Johns Hopkins School. Of six typhoid-fever patients, all of whom but one exhibited the Widal reaction, as tested by the health board, four also showed a large number of malarial organisms in the blood. Some of the malarial fevers were interesting, especially from the combination of parasites found in some cases. Two had the tertian combined with the æstivo-autumnal form of the plasmodium; one had a triple infection, double tertian and æstivo-autumnal; one had a single tertian; the remainder the æstivo-autumnal alone. Some peculiar forms of plasmodia were noted: thus the ring forms with rod-like appendages on one or two sides, making spindle or flask shapes, or forms appearing like a ring twisted on itself. One case of organic heart disease, one of apparently chronic nephritis, and one of incipient phthisis seem to have escaped the vigilance of the recruiting surgeons. The cases of mixed typhoid and malarial infection showed the course of temperature so often noted, the malarial fever seeming to be in abeyance during the *période d'état* of the typhoid, but reappearing in characteristic diurnal curves at the moment of convalescence from the typhoid. It was interesting to note the complete success of the cold-bath treatment in all the cases of typhoid fever, and the absence of all effect upon the malarial temperatures. On account of the predominantly remittent type of the malarial fevers, *i.e.*, of the æstivo-autumnal infection, quinine was given in five-grain doses every four hours throughout the twenty-four. One patient received ninety-five grains without experiencing the least symptom of cinchonism. All the patients recovered.

The Massachusetts Hospital for Consumptives, located in Rutland, twelve miles from Worcester, about twelve hundred feet above sea level, was opened October 1, 1898, for the reception of patients. It is built on the pavilion plan and will accommodate two hundred patients. Inasmuch as the primary purpose of the hospital is to arrest the disease, and if possible to extirpate it, only such patients will be admitted as are not too far advanced to admit of reasonable hope of radical improvement. In no sense is the hospital to be considered as a home for the hopelessly sick. Patients who do not improve after a stay in the hospital sufficiently long to test the effect of treatment will be advised not to remain, and their friends will be expected to arrange for their removal to surroundings primarily devoted or better adapted to their comfort. A uniform rate of fifty cents a day is charged, and no private patients are received. The superintendent of the hospital is Dr. Walter J. Marcley.—*Boston Medical and Surgical Journal.*

A Vegetarian Hospital.—We have heard of temperance hospitals, Presbyterian hospitals, orificial hospitals, and hospitals for the insane, but a vegetarian hospital is, we confess, new to us. The London correspondent of the *American Practitioner and News* writes concerning such a one, called the Oriotel Hospital at Loughton, in Essex. The treatment of the sick in this institution is carried out according to the strictest laws of vegetarianism, except that eggs, milk, and butter are allowed. But the ordinary dietary consists of porridge, bread and butter, some form of stewed fruit, and cocoa for breakfast; a savory, as macaroni, cheese, fresh vegetables, and pudding for dinner; and fresh fruit, bread, and butter for supper. Twice a week tea is allowed, oaten water and cocoa being on other days served in the afternoon. According to Haig and Roger Williams this is the sort of living (or existing) that is inimical to gout and cancer, and we trust the patients like it.

The Medico-Chirurgical Club is the name of a medical society organized recently in Nashville. The objects of the society are announced to be the promotion of social intercourse, the stimulation of professional activity, and the encouragement of original research. The organization is intended to be very select, the membership being limited to sixteen. The club will have no president, each member presiding in turn over the meetings for two successive months. A peculiar feature of the society, we learn from the *Nashville Journal of Medicine and Surgery*, is a clause in the constitution which provides for the assignment of every member of the club to different departments of medicine, in which he is to work for the period of one year. All the papers that each member will prepare during the year, upon topics selected by the essay committee, will relate to some subject belonging to that department of medicine or surgery in which he is expected to work during the time specified. The meetings are to be held once a week, the first and third meetings in each month being devoted to the reading and discussion of papers, the second and fourth to clinical exhibitions and reports of cases.

The Johns Hopkins Medical School.—There are two hundred and seven medical students at the Johns Hopkins Medical School. Of these, sixty-six were enrolled this session. There are thirty-five women in the school, of whom nine entered this season.—*The Maryland Medical Journal.*

Exits and Entrances. — The *Atlantic Medical Weekly*, formerly published in Providence, R. I., has ceased to exist. Its good will has been secured by a Philadelphia paper, which undoubtedly needs it. There will be no decrease in the number of medical journals, however, for the Ramsey County (Minn.) Medical Society will begin on January 1, 1899, the publication of a monthly medical journal. The society numbers one hundred and twenty-five members.

The Cumberland County (N. J.) Medical Society.—The semiannual meeting of this society was held at the Hotel Cumberland, Bridgeton, October 11th, under the presidency of Dr. A. R. Judson, of Newport. Dr. Hummel, of Deerfield, read a paper on "Peritonitis." An interesting paper on "Conservatism in Gynæcology" was read by Dr. Charles P. Noble, of Philadelphia. The society unanimously voted to celebrate its eightieth anniversary on December 8, 1898.

Society Reports.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Abstract of the Proceedings of the Twenty-Fourth Annual Meeting, Held at Nashville, Tenn., October 11, 12, 13, and 14, 1898.

First Day—Tuesday, October 11th.

The association met in the hall of the house of representatives at the State Capitol, and was called to order by the chairman of the committee of arrangements, Dr. Duncan Eve.

Prayer was offered by Rev. James I. Vance, D.D.

Addresses of welcome were delivered by Hon. J. M. Head, on behalf of the city and State; and Dr. C. S. Briggs, on behalf of the profession of Nashville.

President's Address.—After the reading of the reports of the secretary and treasurer, which were accepted, the president's address was delivered by Dr. John Young Brown, of St. Louis, Mo. He selected for his subject "The Mississippi Valley Medical Association." He dealt with the history of the association, saying that it was organized twenty-four years ago. Its rapid growth had been due to the loyalty of its members and to the fact that from its inception it had been a distinctively working body. It had never been a mutual-admiration society. He gave suggestions for its improvement, and said that, inasmuch as the association contemplated the publication of an annual volume of transactions, he would propose that the dues be raised from $3 to $5.

Immunity.—Dr. Charles T. McClintock, of Detroit, Mich., read the first paper. Of late years a large part of the laboratory work in medicine had had to do, he said, with immunity. Many facts had been discovered; in a few instances these had been of immediate practical value in the treatment or prevention of disease. But for the most part these facts were not correlated, often they were contradictory, and their meaning was not clear. Hypotheses had been advanced, but as yet we had no theory that would even approximately explain the facts of immunity. The future of work in this line was full of promise. For the infectious diseases at least, immunity and cure were one and the same. A diphtheria patient would be cured only when his tissues were immunized against the attack of the diphtheria poison. There were several kinds and various degrees of immunity. We had a natural and an artificial or acquired immunity; apparently these were entirely different in kind, dependent on different functions of the body, effected by different substances. There was racial immunity. Again, we had an immunity correlated with age. Variations in susceptibility were noted in different varieties of the same species and even in different families. There was also an individual immunity. Still again, one part of the body, even one portion of the same tissue, might be immune, while the rest was very susceptible. These facts were not to be explained by general resistance, good health, etc. The most vigorous man might acquire small-pox or influenza. The healthiest cow was likely to take pleuropneumonia. Metchnikoff's theory (phagocytic) was the best explanation we had for natural immunity. Nuclein seemed to be the germicidal agent elaborated by the white corpuscle. If natural immunity was due to one or to several chemical agents, it followed that it was limited.

As to artificial or acquired immunity, after recovery from an attack of certain of the infectious diseases there was more or less of immunity to that disease. In some instances, as in scarlet fever or syphilis, this acquired immunity usually lasted for life. The immunity following recovery from disease was not proportional to the intensity of the disease process. The ability of an organism to resist the attack of disease germs or their products could be increased—trained, educated, it might be said. Thus, in producing diphtheria antitoxin, we often got our horses to bear without apparent harm several thousand times the dose of poison fatal for an untreated horse. It might happen that diphtheria or measles would after generations or centuries disappear, owing to the fact that the race had become immune. To what extent an acquired immunity could be inherited was both an interesting and an important question. This sort of immunity was usually lost, at least so far as tests showed, before the animal reached the adult stage. Inherited immunity was not the same as the immunity of the suckling. This was due to the fact that the immunizing bodies passed into the milk. The child received from its mother not only food, but disease-resisting power. There were active and passive forms of acquired immunity. The horse producing antitoxin was actively immune; his tissues were producing antitoxin. The child receiving a dose of antitoxin was passively immune. It had borrowed the strength of the horse. There was also an immunity to poisons. The wolf throve on putrid flesh, and some animals were immune to snake poison. The insusceptibility of the morphine user might be something more than mere tolerance; the drug might be in part destroyed, and this anti-power might have to do with the craving for the drug. There was no satisfactory explanation for the facts of acquired immunity. The various theories as to the nature of antitoxin and its mode of action were referred to by the speaker, with the conclusion that antitoxin, in some way as yet unknown, stimulated some portion of the body, and this in turn destroyed the poison. There was no antitoxin, but, in short, an immunizing body. Immunity and cure were the same thing.

Dr. George W. Johnson, of Dunning, Ill., said that he had had some experience with nucleinic acid in the treatment of pulmonary tuberculosis in cases of mixed infection, and had noticed a diminution in the number of pyogenic bacteria. He asked whether the phagocyte attacked the tubercle bacillus, the same as it did pyogenic bacteria.

Dr. McClintock replied that he knew of no reliable investigations that had been made with reference to that point.

Dr. Ernest B. Sangree, of Nashville, said it was believed by many investigators that the phagocytes eat live tubercle bacilli, and that in cases in which tubercle bacilli were included in the phagocytes the patients had a better chance to get well than in those which did not present this action.

Dr. Dudley S. Reynolds, of Louisville, said he was afraid that experimental observers had failed to note the necessary equilibrium between the circulating blood current and the lymph stream. Dr. Reynolds elaborated the theory of phagocytosis, and showed how phagocytosis could never be successful if obstructions existed in the lymph channels.

Hygiene versus Drugs in the Treatment of Pulmonary Tuberculosis.—Dr. C. L. Minor, of Asheville, N. C., read this paper. Under hygienic and dietetic treatment the author embraced all such non-medicinal measures as were directed toward an increase in the vitality of the organism and of its resistance to disease, and remarked that climato-therapy was but a branch of hygienic treatment, although he did not embrace it in his remarks, which were confined to the proper application to individual cases of exercise, gymnastics, massage, hydrotherapy, rest, sleep,

diet, amusements, clothing, and quarters. A partial and unsatisfactory use of such measures was more or less general, but unless directions were definite and specific they would fail of their purpose. The difficulty of getting a patient to yield implicit obedience to the doctor was dwelt on, the indefiniteness of the orders given being in part to blame. If the patient was to recover, he and the doctor must both work hard, no half-hearted seekers for pulmonary health being likely to recover. The necessity of carefully and fully writing out exact orders for every detail of the patient's life, to be followed religiously by him, was urged, such a prescription being in phthisis of more value than the more common one for drugs. All such measures were for convenience classed under three heads: those affecting the patient's surroundings, his life, and his exercise. The very common abuse of exercise was deplored by the speaker. The invariable rule, he said, was "exercise short of the point of fatigue;" and there was another, "No exercise with a temperature over 100.4° F." If these were followed, no mistake could be made. A very gradual accustoming of the patient to longer and longer walks, beginning with only fifty or a hundred yards in many cases, and increasing until finally from two to ten miles could often be easily tolerated, together with a judicious use later on of walks on increasing inclines, till steep hills were easily surmounted, was warmly recommended. Pulmonary gymnastics were especially dwelt upon for use in non-active cases, and among several methods recommended for chest development and the increase of vital capacity that form of Indian-club swinging called the double figure-of-eight was chiefly recommended. Finally, any intention to advocate nihilism in medicine was denied. In carefully selected cases certain drugs had undoubted value as adjuvants, never as the chief resource. The short life of most drugs in phthisio-therapy was noted, and ascribed to the fact that no man could treat this disease long and not realize that nothing which in the least degree upset the stomach could be anything but a curse to the patient. The only valuable results were those based on a vitalizing of the whole system, a stimulation of metabolism on a strengthening of the cells to oppose the invader. The thing to be attacked was not so much the lesion in the lung directly as the lowered vitality of the body, the diminished capacity of the lungs, and the deficiency of appetite; drugs directed to a conquering of the bacillus *in situ* were not to be compared with measures which enabled the organism itself to acquire the strength to overcome disease. These things could be brought about best by an improvement in nutrition, which must after all come from the stomach, and an increase of the amount of oxygen taken into the lungs. Air and food were the drugs which we could always trust; they would never deceive us. If a patient could be taught to get both in good amounts, wherever food could be assimilated and enjoyed and air breathed deeply, there was hope of cure. We should throw away two-thirds of our medicine bottles, and use the other third less often, carry out a hygienic plan of life, stimulate the appetite by nature's appetizer—air and exercise, which alone were permanent in their results, and which were as superior to gentian or quassia as sunlight was to darkness.

Congenital Scoliosis.—Dr. S. C. Baldwin, of Salt Lake City, Utah, contributed a paper on this subject. Scoliosis, he said, was, first, the most common of all deformities; second, it was most often found in children under ten, rarely beginning after eighteen; third, it was found more often in girls, in the ratio of five to one; fourth, the etiology was in a large number of cases very uncertain. Congenital scoliosis was very rare. Tubbey, of London, in the latest English work on deformities, had stated that he had been able to verify only four cases. The case reported by the essayist was first diagnosed as scoliosis when the child was twenty-one months old, but the father had noticed the "lump" ever since the child was first washed. The interesting feature of the case was that the curvature was in the lower cervical and upper dorsal region. There was some pressure on the cord, as shown by the more or less deficient development of the right side. The convexity of the curve in this case was to the left. There was partial paralysis of the forefinger of the right hand. There were sweating and flushing of the left side, with none on the right. The cause of the scoliosis in this case was thought to be the lack of amniotic fluid *in utero*, probably allowing the muscular walls of the uterus to press on the fœtus and hold it in a faulty position, and in this way to cause a wedge-shaped development of the bodies of the vertebræ. This theory had been advanced by Weissenberg, Hirsch, and Schanz in the last year. In this case the mother was very small, and passed at the time of confinement so little water that she did not know there was any, and felt no motion, comparatively speaking, during pregnancy.

Dr. Samuel E. Milliken, of Dallas, Tex., had seen one case of scoliosis in a child under one year of age, but he was not prepared to say whether it was congenital or not.

The Therapeutic Value of Marmorek's Serum.—Dr. William L. Baum, of Chicago, dealt with the literature of this subject in an exhaustive manner. Twenty-two cases had come under his observation in which the serum was used. Of these, nineteen were cases of erysipelas; one of erysipelas plus tuberculous nuchal glands; one of facial erysipelas during childbed without septicæmia; and one of erysipelas with puerperal septicæmia and double labial abscess. The last was the only fatal case. The deductions the speaker drew from an analysis of the literature and his own experience were: (1) In pure streptococcic infections the serum undoubtedly exercises a favorable influence on the course of the disease. (2) In the mixed infections the influence of the serum is noticeably demonstrable, but it merits further trial as an adjunct to other treatment. (3) Considering the grave character of the complications of a non-streptococcic nature reported, ordinary rules of therapeutics demand that in such cases, as with the diphtheria antitoxin, all indicated therapeutic procedures must be employed as well as the serum. (4) In view of the fact that erysipelas streptococci and phagocytes have been found to exist side by side in the lymph channels, it is fair to assume that the influence of the serum is directly exerted bacteriologically on the streptococci and not entirely through stimulation of phagocytic action. (5) The initial dose in all cases should be twenty cubic centimetres, to be followed by ten or fifteen cubic centimetres, according to the indications, every twenty-four hours.

Dr. Charles L. Minor said that his experience was practically confined to secondary infections in tuberculosis. He had used the serum with considerable satisfaction.

Dr. Samuel E. Milliken had used antistreptococcic serum in two cases, both of which terminated fatally. One was a case of abscess of the liver; the other a suppurative appendicitis.

Dr. William K. Jaques, of Chicago, called attention to infections in the pulmonary tract that he had found to be purely streptococcic, and in such cases he had advised injections of antistreptococcic serum with good results.

Dr. Baum, in closing, emphasized the importance of diagnosing the kind of infection present.

Dr. Albert Bernheim, of Paducah, Ky., presented

a paper and reported three cases of syphilis in which he administered blue ointment with satisfactory results by the mouth. He urged a thorough trial of this method, believing it would please the patient as well as the physician. The method of administering blue ointment by inunction was disliked by the patient, on account of its nastiness and inconvenience; hence if another method of using the ointment could be substituted with the same good and quick results, why not make use of it?

Address on Medicine.—Dr. James T. Whittaker, of Cincinnati, who delivered this address, selected for his subject "Diabetes Mellitus."

Mastoiditis, When to Operate and How.—Dr. Andrew Timberman followed with a paper with this title. The cause and symptoms of this affection were described. To know when to operate one must be able to exclude the diseases which were often accompanied by inflammatory conditions over the mastoid without actual involvement of the bone, and which quickly receded when the primary disease was properly combated. Every physician in his experience saw cases of simple furunculosis and diffuse external otitis presenting as marked symptoms painful and swollen mastoids. The tissues were boggy and the œdematous condition was determined by palpation and pain on pressure. As a *sine qua non* such diseases, as well as syphilis, must always be excluded before operating. The speaker said that he divided cases of mastoiditis into two classes—the first class comprising those complicating acute aural disease; the second class, those complicating chronic aural affections. This division ignored primary mastoiditis, which was very infrequent. The speaker drew these conclusions: Operative measures should be instituted: (1) To preserve the function of hearing as well as to prevent a fatal issue. (2) Earlier in mastoiditis due to scarlet fever, diphtheria, and the worst cases of influenza, than when due to colds, measles, typhoid, etc. (3) In the acute cases of mild infection, when subsidence did not occur within at most eight days (Schwartze). A shorter period was safer in a virulent infection. (4) Recurrent mastoiditis due to any cause. (5) In mastoiditis complicating a chronic suppurative otitis. (6) In acute cases, when there was a drooping of the lining membrane of the superior posterior wall of the external auditory canal, carrying with it the membrana Shrapnelli; in chronic cases, when at the same place a crater-like opening led to the recessus epitympanicus and aditus ad antrum, even though in neither case symptoms immediately menacing life were present. The author favored the typical or original Schwartze method of opening the mastoid antrum. Its success in given conditions justified its application; its failure in given conditions had resulted in a more perfect procedure styled the Schwartze-Stacke or radical operation.

Dr. J. Homer Coulter, of Chicago, maintained that the general practitioner should not treat cases of mastoiditis in which the symptoms were well defined, and no one who had not had considerable surgical experience should attempt the Schwartze operation.

Dr. J. A. Stucky, of Lexington, said that in many cases of necrosis of the malleus he had made a free incision along the posterior superior wall of the canal, curetted the diseased bone away, and tamponed the canal lightly with iodoform gauze. The patients had done well without undergoing the radical operation.

Dr. Dudley S. Reynolds laid stress on the importance of instituting constitutional medication in the stage of invasion in cases of mastoiditis, saying that an ounce of prevention at this time was most preciously bestowed.

Dr. L. B. Graddy, of Nashville, called attention to a point not mentioned in the paper—the differential diagnosis between mastoiditis and mastoid periostitis. If cases were carefully observed, there was as much difference between the two conditions as there was between a periostitis of the tibia and an epiphysitis. This differentiation was of paramount importance in the treatment, whether medical or surgical.

Prophylaxis in Nose and Throat Diseases.—Dr. J. Homer Coulter, of Chicago, read a paper on this subject. He said that there were many preventable pathological conditions in the nose and throat. That many of the ordinary diseases of this portion of the anatomy had evoluted into more serious and distinctly different affections would be admitted without question. He omitted any reference to such conditions as syphilis, tuberculosis, diphtheria, influenza, or the exanthemata, inasmuch as the possible prophylaxis in each affection was a matter of general knowledge. He also omitted reference to any technical details, which were at best mooted points with authorities. Surgery did not cure all conditions, nor did it even prove always a prophylactic blessing. So also local applications and constitutional treatment proved unavailing if universally depended upon. This was due in a measure to the lack of carefully exacting and eliminative diagnoses. With the development of our knowledge of the physiology of the nose and throat had come also new ideas of the connection between many diseases of those organs and of their relative etiological importance. The impairment due to ventilation and drainage was a most important factor, and one usually amenable to surgical treatment. "Taking cold" was not only a most frequent condition, but one most susceptible to prophylactic measures. Clothing, of all parts of the body, was a factor of paramount importance in prophylaxis. Too much clothing about the head and neck was just as disastrous as insufficient protection. Adenoids, polypi, spurs, exostoses, deviations, deflections, and sensitive areas were each amenable to surgical treatment, and demanded such interference as soon as recognized. On the other hand, too much surgery was quite as disastrous as too much conservatism. The tonsils were the cause of other and reflex pathological conditions as frequently as were adenoids. Mouth breathing should be recognized as a most significant danger signal. The speaker's conclusions were that anything which produced an alteration in the normal physiological metabolism of the mucous membrane of the nose and throat; any alteration in the nutrition of the parts; any abnormal variation in functional activity; any considerable change in the histological anatomy, were each and all remediable surgically or otherwise, and were therefore amenable to prophylactic efforts.

Peritonsillitis or Quinsy; Cause and Treatment.—Dr. J. A. Stucky, of Lexington, followed with this paper. Of ten authors consulted, seven, after citing hereditary predisposition, exposure, etc., mentioned rheumatism and gout as the most prolific causes of this malady. Close observation and careful testing in selected cases convinced the speaker that the rheumatic or, more probably, the uric-acid diathesis had more to do with the causation of this disease than any other factor. Coming to the treatment, he believed that, if the majority of cases of quinsy were seen within forty-eight hours after the first onset of the disease, they could be aborted to such an extent that suppuration would not take place. In cases that progressed to suppuration, he strongly advocated early and free puncture, just as soon as there was marked distention, in order to relieve pain and stop the destructive suppurative process. For this purpose he used a modification of an ear spoon, first described by Spier, and not a knife.

Second Day—Wednesday, October 12th.

Complete Inspection of the Rectum by Means of Newer Mechanical Contrivances.—Dr. Thomas Charles Martin, of Cleveland, Ohio, read a paper with this title. The newer mechanical means exhibited consisted of a set of proctoscopes which were provided with obturators of peculiar form; of an illumination apparatus, susceptible of adjustment to a number of positions; and of an improvement of the Yale chair, which facilitated the placing of the patient in the knee-chest posture without requiring any movement on the part of the patient after he was properly seated on the chair. The improvement consisted essentially of an upholstered board attached to the left arm of the chair, and a mechanism controlled by a crank and lever, which formed a part of the running-gear. The anoscope exhibited was an inch and one-half (1.27 cm.) in length, designed for the inspection of that part of the rectum which was surrounded by the pelvic floor. The proctoscope was four inches (10.16 cm.) long. It was, the essayist claimed, of sufficient length to reach into the inflatable rectum; it was not of so great a length as to obstruct a complete view of the rectal chambers, and yet was of sufficient length to reach the promontory of the sacrum when the pelvic floor was displaced upward by the proctologist's manipulations. Both of these instruments were seven-eighths of an inch (2.22 cm.) in diameter, this diameter having been determined upon as the result of calibration in many normal ani. The average diameter of the instrument was equal to the degree of painless expansibility of the anus. The obturators had contracted necks, which constituted these instruments ointment applicators. The middle part of the obturator was channelled; this qualified the instrument as a nozzle for rectal irrigation. Because of its contracted neck the obturator might be used as a self-retaining nozzle. The surface of each obturator was fluted in such a manner that it might be used as a two-way irrigator when properly fixed within its tube. The technique of the inspection was as follows: The patient was required to sit on the chair with his legs crossed and his body facing the knee board, which was attached to the left arm of the chair. The chair back was changed to the horizontal by a movement which put the patient into the Sims posture. The fixed rectum was now examined by means of the short anoscope. After this portion of the rectum was inspected, the chair's lever was extended, its crank turned, and the chair tilted to such an extreme degree of the oblique lateral position that the chair seat was almost perpendicular, and the knee piece, which was a part of the left arm of the chair and against which the patient's knees were pressing, was almost horizontal. Now, at a time when the patient was resting easily in a position which was equivalent to the knee-chest posture, the anoscope was introduced, the obturator withdrawn, and the inspection of the ballooned gut completed. The patient was passively returned to his feet by execution in the reverse order of the several steps of this procedure.

The Relation between the Genito-Urinary Tract and Rectum; In Operations upon the Female which Should Receive Priority?—This paper was read by Dr. John L. Jelks, of Memphis. The author championed the assertion that the gynæcologist should be as well prepared to remove hemorrhoids and treat an ulcerated rectum as to dissect a cicatrix from the cervix or repair a perineum. The rectal surgeon often found that although the rectum was involved to such an extent as to be chiefly complained of, the principal source of danger to the patient was a pus tube or some other disease. In other words, to relieve the patient and restore her to health and happiness, he must also dissect from the cervix uteri a cicatrix and repair a lacerated perineum. In another case he might be required to sever a urethral stricture.

Rectal Fistula in the Causation of Ischio-Rectal Abscess.—Dr. William B. Bruns, of Deckerville, Ark., reported a case with two large pus pockets. He opened the abscess, emptied its cavity, and subsequently did an operation for the removal of the fistula.

Hydrotherapy in Stomach Diseases.—Dr. George D. Kahlo, of Indianapolis, followed with a contribution on this subject. He said that water was essential to the performance of all physiological functions; yet its importance as a remedial agent was not so generally recognized. While he did not wish to be understood as opposing entirely the use of drugs in diseases of the stomach, he desired to say that he believed water ranked first among therapeutical resources. It might be used internally as a drink, in lavage, as a douche, and as a spray, and externally applied either locally or generally. Its effects, when administered internally, depended upon the conditions of the stomach in respect both to the taking of food and to the fact whether or not there was normal digestion, as also upon the amount and temperature of the water ingested. Cold applications of all kinds were antiphlogistic, and when prolonged were sedative. They were indicated in acute gastritis and in the control of vomiting and hæmatemesis, but to obtain their full effect it was necessary that their local condition should produce an active hyperæmia of the skin. Hot applications were useful in the treatment of gastralgia, hyperæsthesia, gastric ulcer, and chronic gastritis. While he did not ignore the beneficial influences of such agencies as diet, exercise, massage, and electricity, not to speak of a few of the more important drugs which were thus used (and in obstinate cases especially), physicians were not likely to rely wholly upon any one remedy, however valuable. To be successful, hydrotherapy, like all other forms of treatment, had for its governing factors an exact diagnosis, a thorough knowledge of the patient, a full understanding of the causative influence, and a clear conception of the effects of the remedial agent. To this must be added the confidence and co-operation of the patient.

Dr. Thomas Hunt Stucky, of Louisville, read a paper on "Auto-Intoxication of Intestinal Origin."

Abscess of the Liver.—Dr. Edwin F. Wilson, of Columbus, Ohio, read a clinical report of a case of abscess of the liver. In referring to the clinical aspects of abscess of the liver, he called attention to the essentials in diagnosis, and dwelt upon the history of the disease. He reported three cases. Of these, the diagnosis was confirmed in two cases by post-mortem; in the other one by aspiration. All three of the abscesses were chronic when they came under his observation. In only one of the cases was there a history of dysentery, although in another scars of healed ulcers were found in the large intestine. In these cases the speaker had found that the enlargement of the liver was upward. Hoover, he said, had made a diagnosis of abscess of the liver from a friction sound in the axillary line, between the eighth and tenth ribs. The essayist had not heard this sound in any of his cases, but the possibility should be borne in mind in making an examination in this region. Two of the cases reported were mistaken for malaria. This mistake could be avoided by the more general use of blood examinations. The absence of plasmodium would settle the question at once.

(To be Continued.)

Epistaxis.—The injection of a glass syringeful of lemon juice into the nose, after it has been cleansed of clots, it is said will stop bleeding when everything else has failed.

NEW YORK STATE MEDICAL ASSOCIATION.

Fifteenth Annual Meeting, Held in New York City, October 18, 19, and 20, 1898.

DOUGLAS AYRES, M.D., OF MONTGOMERY COUNTY PRESIDENT.

(Concluded from page 600.

Second Day—Wednesday, October 19th.

Notes on Neuralgic Affections of the Head.—DR. GUSTAVUS ELIOT, of New Haven, read this paper. He said that the most common form of neuralgic affection of the head was the supra-orbital variety, which was apt to recur at about the same time on several successive days, and be associated with tenderness over the point of exit of the nerve. The next most common variety was that affecting the temporal and auricular nerves. The two chief factors in the production of these neuralgic conditions were (1) a depraved condition of the blood and (2) nerve exhaustion. The symptoms indicative of the neuralgic character of a painful affection of the head were absence of fever and circulatory disturbances, absence of catarrhal disorders, recurrence on several days, a tendency for the pain to follow the course of certain nerve trunks and for the pain to pass from one side of the head to the other. During the attack, morphine might be given hypodermically, but for more prolonged use it was advisable to give quinine, five grains every four hours, with fifteen drops of the tincture or five drops of the fluid extract of gelsemium at the same intervals. Attention should be given to the functional condition of all the organs of the body.

Discussion on Intestinal Obstruction.—DR. PARKER SYMS, of New York, opened this discussion. He stated that acute intestinal obstruction was an absolutely curable condition if recognized early and promptly and properly treated. Being a mechanical condition, it was one which must be combated by mechanical means. Too often the physician, when first called in, made a superficial examination and diagnosticated the condition as simply one of constipation. Although in simple constipation the patient might be, through ptomain poisoning, very ill, it was possible in most instances to make an early differential diagnosis. It was unwise to give cathartics even in cases in which only impaction was suspected; it was far better to endeavor to relieve the patient by high enemas. If such treatment were not speedily successful, no time should be lost in seeking operative relief.

The Causes of Acute Intestinal Obstruction, with a Description of their Mechanism.—DR. E. D. FERGUSON, of Troy, continued the discussion by a consideration of this part of the subject. He said that in three cases in his own experience it had been possible for him to discover that the case under examination was not really one of intestinal obstruction, but an example of lead paralysis. He had already published an article showing that intestinal obstruction might be an exceptional result of intestinal ptomain poisoning. The mechanical causes of obstruction were: (1) Obstructions from conditions without the bowel; (2) obstructions from conditions within the bowel; and (3) obstructions from conditions relating to the wall of the bowel. Some mixed types also occurred from the combination of two or more conditions. In the first category were: (*a*) compression by tumors or displaced viscera; (*b*) compression by bands, cords, other loops of the bowel, and by traction; and (*c*) compression in apertures. The author then took up the subject of the mechanism of intussusception, dwelling upon the spasmodic forms of intussusception, and the action of the circular and longitudinal muscular fibres, and of both direct and reversed peristalsis. In over fifty per cent. of the cases of intussusception the ileum enters the colon, sometimes for a remarkable distance. Under the third head—conditions relating to the wall of the intestine—were mentioned stricture and volvulus. Twisting, the author said, might be produced (1) around the axis which extends through the transverse diameter of the bowel to the mesenteric attachment at the vertebra, and (2) more or less directly along the line of junction of bowel and mesentery. The former constitutes seventy-five per cent. of the cases of volvulus. Should the physician be unable in a given case to decide which of the forms of obstruction was present, under the doctrine of chances, before opening the abdomen, one would base an opinion on the following order of occurrence, viz.: (1) Intussusception; (2) strangulation by bands, orifices, etc.; (3) diaphragmatic herniæ; (4) obstruction by foreign bodies; (5) stricture; (6) compression by tumors; (7) volvulus; (8) angular bending.

The Causes of Chronic Intestinal Obstruction, with a Description of their Mechanism.—DR. GEORGE D. STEWART, of New York, discussed this topic. He said that by the term "chronic obstruction" was usually meant a partial obstruction occurring in persons giving a previous history of intestinal disease. Among the more common causes were: (1) Simple stricture, (2) dysenteric ulcers, (3) catarrhal ulcers, (4) syphilitic ulcers, (5) typhoid ulcers, and (6) tuberculous ulcers. Malignant strictures were either carcinomatous or sarcomatous, and each of these might be either primary or secondary. Paresis of the intestinal wall, with fæcal accumulations, was a frequent cause of chronic obstruction. According to Erichsen, about eighteen per cent. of all cases of intussusception ran a chronic course. Permanent narrowing of the bowel was caused either by an intussusception not becoming strangulated, or by its becoming more or less strangulated and undergoing certain structural changes. Adhesions were produced by (1) bands and (2) compression by diverticula or benign tumors in the intestine.

Intestinal Obstruction Due to Impaction of Fæces, Gall Stones, Foreign Bodies, etc.—DR. J. W. S. GOULEY, of New York, took up this phase of the general subject under discussion. He stated that these patients almost invariably said that the bowels were regular, because there were one or two stools daily, and for the same reason the fæces were allowed to accumulate until a large tumor was formed, and this was too often mistaken for malignant disease. In the treatment of this condition too much could not be said of the value of prolonged irrigations with hot saline water, but if the rectum was filled with large and hard masses these should be removed with the scoop prior to the irrigations. Laxatives should be given by the mouth for several days following the use of the enemas. Speaking of enteroliths, Dr. Gouley said that they were of five varieties, viz.: (1) Those with gall stones as nuclei; (2) those composed of fæcal matter, lime, magnesia, phosphates, and carbonates; (3) those composed of vegetable substances, fæcal matter, and calcareous particles; (4) those composed largely of solid medicinal agents, such as magnesium carbonate or bismuth; and (5) those with foreign bodies for nuclei. Referring to a series of fifty cases that had been collected, in which foreign bodies had been swallowed, the writer said that of this number twenty-six were in adult males, sixteen in adult females, two in male infants, one in a female infant, and five in infants whose sex was not given. Such foreign bodies might be impacted in the pharynx, œsophagus, stomach, or intestine, or they might pass through the stomach and intestine and be discharged with the stool. The swallowing of coins rarely caused inconvenience. The treatment consisted in extraction by the mouth,

propulsion through into the stomach, or extraction by œsophagotomy or gastrostomy. The paper closed with the narration of a number of remarkable cases on record, in which hair balls had been found in the stomach, and of instances in which knives, forks, pieces of glass, etc., had been swallowed. In one case a fork had migrated from the abdominal organs to the hip.

The Diagnosis and Indications for Treatment of Acute Intestinal Obstruction.—Dr. J. D. Rushmore, of Brooklyn, read this paper. He said that the more important symptoms of intestinal obstruction were pain, nausea, vomiting, tympanites, tumor, visible coils of intestine, and failure to pass either fæces or gas. Among the less important symptoms were fever, jaundice, diminution or suppression of urine. As hernia was a most common cause of intestinal obstruction, it seemed hardly wise for the text-books to consider this subject apart from the general one of intestinal obstruction. When there was doubt about hernia as the cause of the obstruction, it was well to make an exploratory incision over the hernial orifice under cocaine anæsthesia. By non-mechanical intestinal obstruction was commonly meant that form resulting from septic peritonitis. Peritonitis might usually be recognized by the pulse, temperature, pain, and facial expression, and the existence of these evidences of peritonitis prior to the development of the symptoms of obstruction would point to peritonitis as the cause of the obstruction. Exploratory laparotomy furnished the only means of exact diagnosis. It ought to be more frequently employed than it was, especially as there was no better, and at times no other, means of making a correct diagnosis. The dread of opening the abdomen had long since vanished among surgeons. When an operation seemed to be indicated, it should not ordinarily be deferred more than forty-eight hours. In competent hands, early cœliotomy for intestinal obstruction probably should not give a mortality of much over twenty per cent.

The Diagnosis and Indications for Treatment of Chronic Intestinal Obstruction.—Dr. Leroy J. Brooks, of Norwich, considered this part of the subject. He stated that chronic obstruction was rare in infancy. Malignant disease constituted an important cause of chronic intestinal obstruction. The true cancerous cachexia presented a pale, waxy countenance, which was characteristic; on the other hand, marasmus from auto-infection gave rather a jaundiced skin. It should be noted that jaundice was connected with less than half of the cases of obstruction associated with gall stones. Tuberculous structures were most common in the ileum; syphilitic and cancerous strictures in the sigmoid. The nearer the stomach the disease was located, the more severe were the nausea and vomiting and the cachexia. If the obstruction was situated in the colon, the vomiting occurred late, and might be stercoraceous for many days preceding death. As a rule, the pain of all obstructions of the small intestine was concentrated at the navel. In obstructions located in the small intestine, it occurred three or four hours after the taking of food, whereas in obstructions in the colon the pain bore no relation to the meals. Post-operative obstructions usually occurred at the junction of the small and large intestine. Constipation occurred in seventy-five per cent. of cases of obstruction of the bowel, yielding at first to cathartics, but rapidly becoming more and more complete. In the other twenty-five per cent., constipation alternated with diarrhœa. In cases of obstruction resulting from intestinal paresis, the most prominent symptom was the extensive tympanites, with a smooth abdominal surface and the absence of visible coils; but it was a condition which very frequently led to errors in diagnosis. Exploratory laparotomy should be done as soon as one was sure that an obstruction existed which could be removed only by surgical interference. Dr. Brooks said that he had occasionally observed post mortem stercoral ulcers in the region of the cæcum in cases of chronic obstruction of the bowel. These ulcers had perforated and caused peritonitis, the original cause being obstruction in the colon.

Intestinal Obstruction Due to Intussusception and Volvulus.—Dr. John F. Erdmann, of New York, discussed this subject. He stated that his own experience had led him to believe that intussusception was not so rare as one would infer from reading the text-books. Intussusception was the cause of fully thirty per cent. of all cases of acute intestinal obstruction, and the condition was most frequent during the first two or three years of life. The enteric variety was most commonly met with. Among the anatomical causes laid down were (1) a long and lax mesentery and (2) the musculature of the gut causing irregular peristalsis. Marked debility and former disease of the bowel were commonly stated to be the causes of intussusception, but certainly his own cases had not presented any marked debility. It would seem reasonable to suppose that anything which tended to produce vomiting or diarrhœa would predispose to irregular peristalsis, and hence to intussusception. In his own cases pain had always been present, but the vomiting, when present, had been a late symptom. Tenesmus and bloody stools were early symptoms, and persistent restlessness was a prominent feature. It was often impossible to recognize any tumor. In endeavoring to reduce the intussusception by mechanical methods, air and water were commonly employed. The former was less effective, and when the tumor was above the transverse colon the enema treatment was apt to fail. In no instance should the reservoir containing the water be placed more than three feet above the patient. In reducing the intussusception at the time of operation, it was best to make pressure through the intussuscipiens upon the apex of the mass in such a manner as to drive the intussusceptum through its receiving-coat. Men were considered to suffer from volvulus four times more frequently than women. The diagnosis of volvulus was made largely on the sudden onset of the symptoms, the presence of a palpable tumor, and a dull or tympanitic percussion note. The treatment consisted in the use of enemas or resort to operation.

Dr. Farquhar Ferguson, of New York, at the close of this discussion on intestinal obstruction, exhibited an excellent pathological specimen of a portion of bowel, the seat of an intussusception.

Third Day—Thursday, October 20th.

The Technique of Operative Treatment of Intestinal Obstruction.—Dr. Frederick Holme Wiggin, of New York, read a paper on this subject, which was intended as the closing contribution of the preceding day's formal discussion of intestinal obstruction. He said that the various conditions for which operations were usually demanded were: (1) Strangulation of the gut by bands; (2) volvulus; (3) intussusception; (4) obstructions due to neoplasms; (5) compression by tumors external to the gut; (6) obstruction from foreign bodies, such as gall stones and enteroliths; (7) obstructions caused by fæcal masses. When there was no time for the careful preparation of the operating-room, the movable furniture should be taken out and the carpet covered with sheets wet with a 1 to 20 carbolic-acid solution, or a 1 to 100 bichloride solution, care being taken that no dust was raised. Water, sterilized by boiling for an hour, should be used when practicable, but when time was precious water from the hot-water faucet might be used. After opening

the abdomen, the first effort of the operator should be to discover the cæcum, and if this portion of the bowel was found to be greatly distended it was probable that the stoppage was in the colon. The writer recommended, in cases of volvulus, the drawing out of the small intestine and its systematic examination, the bowel being kept warm and moist by being wrapped in gauze or soft towels wet with hot saline solution. No attempt should be made to reduce an intussusception by traction from above the tumor. When it was irreducible, Maunsell's method should be employed. When the intestinal obstruction was the result of the pressure of neoplasms, the latter could usually be removed at the present day. When this was inadvisable, a fistula was to be formed after the method of Nydls. Gall stones or enteroliths causing obstruction should be removed by an incision made a little above or below where they had been lodged. Fæcal accumulations were best removed by small doses of calomel and soda, aided by high enemas of warm saline solution, given by the physician or under his immediate supervision. A bulb syringe should not be employed for this purpose. When the gut was found to be gangrenous in a case of obstruction of the bowel, an end-to-end anastomosis should be effected, and for this purpose Dr. Wiggin preferred his modification of Maunsell's method. This modification had the advantage of much greater simplicity, as it consisted, in brief, in doing away with the invagination and the slit employed by Maunsell. A very common error in the after-treatment was that of giving too small quantities of food at too short intervals, thereby rendering the stomach irritable and improperly nourishing the patient. The bowels should be moved on the third or fourth day by small doses of calomel and soda. Perhaps the most important point to remember, in the opinion of the author, was that the chief factor in determining the prognosis in cases of intestinal obstruction was the promptness with which operative treatment was instituted.

Dr. H. O. Marcy, of Boston, said that personally he believed intestinal suture would ultimately give the greatest satisfaction of all the methods that had been advocated and practised. In this connection he desired to describe a simple method of intestinal suture which he had employed quite extensively, and with much satisfaction. A slit was made in each portion of the intestine, thus giving two straight openings and surfaces which could be quickly brought in apposition, and sutured. The small remaining slit was brought together, preferably with a double continuous suture. This gave smooth and unabraded peritoneal surfaces, and every stitch was turned in. It had long seemed to him that the profession had greatly underestimated the importance of a thorough reconstruction of the peritoneal planes after operation. The abrasions left after these abdominal operations, no matter how small, were apt to give rise to trouble subsequently. It was easy to close them in with a fine running suture, and he had repeatedly closed up the whole peritoneal surface of the pelvis in this way.

The Passing of Alcohol.—Dr. J. M. Farrington, of Broome County, read a paper with this title, in which he expressed the opinion that those of the profession who believe in the value of alcohol as a remedy were now in the minority. A great change in this respect had taken place in recent years. Alcohol, he said, was not a food, but on the contrary impaired nutrition. It was not a stimulant, but really a depressant. Recent physiological experiments showed that it retarded, perverted, and was destructive to normal cell growth. Life insurance companies had become convinced beyond question that alcohol, used in even moderate quantities, impaired health and shortened life. They declined to accept a risk unqualifiedly if the person used liquor in any form habitually. Railroad companies now required their engineers, brakemen, switchmen, and conductors to be total abstainers. The majority of Christian societies had banished wine from their religious ceremonies, and used instead unfermented grape juice. Notwithstanding the drinking usages of the time, he believed that there never was a period in the world's history when the use of liquor was considered so degrading. He attributed the superior accuracy of our gunners in the late naval engagements with Spain to the banishment of rations of grog. By order of Lord Wolseley, he said, careful experiments had been made regarding the staying qualities and health of the British troops using alcohol, as compared with those not using such drink. Certain regiments were allowed rations of grog, and from other regiments these were entirely withheld. It was found that those receiving the grog made a very impetuous dash in their charges, but after a few days they showed a great deal more fatigue and weakness than those who had had no grog. As a result of these observations, and not from any conscientious scruples, rations of grog had been forbidden in the present campaign in the Soudan. Difficult as was this important innovation on time-honored customs, the results had fully justified the change. Dr. Farrington thought the medical profession should be as active now in securing the banishment of alcohol as it had been in the past in placing it in a prominent position.

The Retirement of Alcohol in Pharmaceutical Processes.—Dr. E. R. Squibb said that it might be of interest, in connection with this paper, to learn of the work being done in the way of retiring alcohol as a menstruum for exhausting drugs. A good deal had been accomplished in this direction in the last two or three years. Of the other menstrua experimented with up to the present time, that which had given the best results was acetic acid in various strengths. It had been discovered that a ten-per-cent. solution of acetic acid was almost universal in its exhausting powers. There were now in use in veterinary practice and in some hospitals, extracts made with acetic acid. They were made according to the requirements of the pharmacopœia except that acetic acid was substituted for alcohol. Acetic acid when used with alkaloids gave the physician certain advantages in prescribing, owing to there being fewer incompatibles. In small doses the percentage of acetic acid in the extract was so small as to be hardly appreciable, and when larger doses were required the acetic acid could be neutralized by the addition of potash or soda.

Dr. H. D. Didama, of Syracuse, said that it did not seem to him that the use of alcohol by the profession had been abandoned, either socially or otherwise. It should not be forgotten that the value of negative testimony could never equal that of positive testimony, and that, therefore, the observations of those physicians who had tried alcohol in their practice and abandoned its use should have greater weight than the results obtained by those who had always relied upon it. For the last four years he had not given the equivalent of a teaspoonful of alcohol to all of his patients put together, and he was better satisfied with this practice than with that of previous years, in which he had used alcohol more freely.

Dr. Wickes Washburn, of New York, thought that in discussions of this nature it would be advantageous to divorce the questions of alcohol as a medicine and as a beverage. If alcohol were not a narcotic, we would not see "dead drunks." He used alcohol, in the critical stage of pneumonia, just as he did morphine, and to avoid its secondary or depressant action the second dose must be given before the second action of the first dose had developed. In his last forty-six cases of pneumonia he had given alcohol and mor-

phine—in some cases, morphine to the extent of one-fourth grain every forty-five minutes—and had met with none of the secondary or depressant effects, or any tendency to narcotism. Further, there had been no tendency to continue the morphine or alcohol after recovery.

Dr. Hiram A. Pooler, of New York, said that as a result of the experience gained through many years of practice he would say that alcohol must be prescribed with great care. He would not exclude it under all circumstances, but he would rather cut off his right hand than introduce it into a young person's system. It was without doubt very useful in the treatment of disease occurring in persons who had been addicted to the use of alcoholics for years, but he must confess with sorrow to having been responsible for sending two individuals to drunkards' graves by recommending alcohol when he should have advised the use of carbonate of ammonium, caffeine, or some similar stimulant. Sir Benjamin Richardson, who had had exceptionally good opportunities for the investigation of the effects of alcohol on the human system, had stated that alcohol was a deadly poison from its inception to its elimination from the human system; that it did not promote digestion, but, on the contrary, retarded and interfered with it.

Dr. Robert Newman, of New York, deplored the tendency of Americans to run to extremes. He felt that as a physician he had been instrumental, by prescribing alcohol, in saving several lives. At one time he had made a post-mortem examination on a man who he knew had been intoxicated almost daily for many years, yet he had failed in this particular case to find the ravages of alcohol so graphically described by those who believed its use should be entirely and forever abandoned. While it might be true that small doses of acetic acid were innocuous, he was positive that if the doses of drugs exhausted by the agency of this menstruum were large it would be found harmful, just as vinegar was prejudicial to health.

Dr. Farrington, in closing the discussion, said that he thought close investigation would show that alcohol was entirely contraindicated in pneumonia. Alcohol was not a stimulant; it lashed the nervous system into greater activity, but caused greater depression as a result.

Eye Lesions in Some Diseases of the Kidney.—Dr. H. S. Oppenheimer, of New York, read this paper. He said that the most frequently observed lesion of the eye in connection with disease of the kidney was retinitis albuminurica, with or without hemorrhages. Iritis occurred occasionally, but there was nothing unusual about its course. Hemorrhages were often found in the vitreous humor. The most important and frequent, however, were the lesions of the optic nerve and choroid. Choroiditis was rarely mentioned in this connection, because the exudation was often obscured from view. Retinitis albuminurica was almost always associated with hemorrhages, and the prognosis was worse when they were present, because it might be assumed that the same condition was present in the brain. Dr. C. S. Bull, in a paper published in 1886, reported one hundred and three cases. Eighty-six of these patients were dead at the time of the report, fifty-seven in the first, and eighteen in the second year. In four of the cases sugar was also present in the urine, and two of these patients had died within two years. In the opinion of Dr. Oppenheimer, the cause of this anatomical condition of the retina was to be found in the blood, in an irritant to the tunica intima, associated with hypertrophy of the heart and high arterial tension. Uræmic amblyopia was seen usually in nephritis of the exanthemata or during pregnancy. It was accompanied usually by headaches, nausea, and vomiting, and might occur during uræmic convulsions. The urine was ordinarily scanty and loaded with albumin. Vision was nearly or completely lost. Even though the patient was unconscious, there was often observed a reaction to light. The prognosis depended upon the condition of the kidneys. When the patient recovered from the uræmic attack, vision usually returned in from twelve to twenty-four hours. The reaction of the pupils to light proved the blindness to be of central origin. The differential diagnosis between retinitis albuminurica and uræmic amblyopia was easy. The former came on gradually and presented distinct retinal lesions; in uræmic amblyopia the patient was in bed, having suddenly lost the vision, and the ophthalmoscope revealed no appreciable lesions.

Some Observations of General Interest Regarding the Course and Management of Cataract.—Dr. J. H. Woodward, of New York, presented a paper on this subject. The special object of his communication was to call attention to three important facts in connection with the subject of cataract. They were: (1) That many cases of senile cataract showed no progressive loss of vision; (2) that improvement was often observed; and (3) that complete cataractous degeneration of the senile type was a process often requiring many years for its consummation. Thus in one of the cases reported by him, a patient, forty years of age, with cataract, first came under his observation in 1891, yet the vision was as good to-day as it was then. In another patient, ninety-one years old, the vision had remained good during the seven years the case had been under observation. In the management of these cases Dr. Woodward followed one cardinal principle —*i.e.*, that as a failure in the nutrition of the crystalline lens was probably the cause of the cataract, the physician should endeavor to keep up the nutrition of this part to the highest point. Errors of refraction must be adequately corrected, and every effort made to improve the general health and avoid eye strain. It was usually safe to allow these persons to read by a good light until they felt that the eyes were tired, but they must then promptly discontinue using the eyes until again thoroughly rested.

The Coccyx.—Dr. J. E. Walker, of Steuben County, read a paper with this title. He said that in a great many cases of coccygodynia the cause was to be found in direct violence, such as falling upon the horn of a saddle or from a hammock, but in others the only apparent cause seemed to be a depraved state of the system, such as neurasthenia. Morphine, atropine, hyoscine, and antipyrin had been used locally by hypodermic injection, and sometimes acted fairly well, as did also hot-water bags to the end of the spine. Electricity had proved disappointing in his hands, although both the galvanic and the high-tension current had been used. When these measures failed, operative treatment was indicated. The patient was placed in the left lateral position, and through a free incision the coccyx was easily excised. All bleeding having been stopped, the wound should be closed completely. Several cases were reported in which this operation afforded immediate and permanent relief. When the lesion was local or when there was a deformity, excision of the coccyx was indicated; but when the neuralgia was apparently the result of a constitutional condition excision was usually contraindicated.

Insanity following Surgical Operations.—Dr. W. D. Granger, of Westchester County, read this paper. The author said that out of two thousand cases of insanity studied by him, only two had followed upon surgical operation. One of these was the case of a woman of twenty-six years who had been insane twice after operations. One of the most important predisposing influences was heredity. Advanced age, puberty, the climacteric, syphilis, tuberculosis, and hys-

teria also predisposed to the condition. Clouston had described a delirious type of temporary insanity following anæsthesia, and apparently independent of the kind of anæsthetic employed and the duration of its administration. It seemed justifiable, however, to claim that the anæsthetic acted as a toxic agent. Insanity had been known to follow the simplest operation. The part operated upon seemed to exert a marked influence, insanity being especially liable to follow operation on the genito-urinary organs, and, with diminished frequency, operations on the abdominal viscera, the breast, and the eye (particularly for cataract), in the order given. It should be noted that extraction of teeth held a not unimportant place in this list. It could not be denied that the large majority of the cases of insanity occurring after surgical operations were among women, and this did not seem to be because so many operations were done on the genito-urinary organs of women, for it must not be forgotten that a great many such operations were performed upon men. The vast majority of cases of insanity occurring after operations developed, not immediately after, but at the end of a week or two. The writer believed that in women the menstrual period was an important predisposing cause. No age was exempt; a case had been reported in a boy of ten years, and another in an adult of sixty-five; and it was not improbable that the ages in these cases would prove to be the same as for insanity in general. In forty-six cases reported by Dewey, twenty-seven patients recovered, eight died insane, three within the week of the attack, and only six became chronically insane.

Dr. C. C. Frederick, of Buffalo, said that he had seen only one case, and that had occurred in a woman of thirty years, upon whom he had performed a simple curettage and an Alexander operation. He subsequently learned that three or four years prior to his operation she had had an attack of acute mania, lasting several months. About two weeks after the operation she began to act peculiarly, and in three or four days after this she was acutely maniacal. She then went to the Buffalo State Hospital, and completely recovered in about six months.

Dr. F. H. Wiggin also reported a case occurring in a woman upon whom he had operated for the removal of an enlarged ovary and an inflamed appendix, and who developed laryngeal diphtheria during convalescence from the operation. She insisted upon going to her home in Philadelphia before she had fully recovered, and shortly after reaching there developed an acute mania. She was in an asylum for about two months, but had now completely recovered. The exhaustion consequent upon taking this journey probably had much to do with her attack of mania.

Use of Catgut in Surgery.—Dr. C. C. Frederick, of Buffalo, read this paper. He said that up to four years ago there was no known method of sterilizing catgut without impairing its strength. Catgut would not slip if properly tied, objections to the contrary notwithstanding. As no surgeon knew when a non-absorbable ligature or suture might give rise to trouble if buried in the tissues, absorbable suture material should alone be used. Catgut could now be thoroughly sterilized, was as reliable as kangaroo tendon, and was much better because it could be obtained in various lengths and thicknesses. He had used catgut in several hundred abdominal and plastic operations, and had never known a knot to slip. Catgut could be chromicized to any degree so as to resist absorption for any desired period. The boiling-point of alcohol was 173° F., and neither catgut nor kangaroo tendon could be sterilized at that temperature, as had been proven by both clinical and bacteriological observation. The boiling of catgut in cumol was satisfactory as regarded sterilization, but the tensile strength was apt to be impaired, and the method required the most minute attention to details to insure success. He had used this process for over a year, preparing all the catgut himself. For the last two years he had used the formaldehyde process, and for sterility and strength catgut so prepared was superior to any other with which he was acquainted. The catgut was purchased in coils, and the surgeon also provided himself with a lot of small glass spools, having notches cut with a file on the edge of the flange. One end of the catgut was pushed through the barrel of the spool and passed over the notch in the flange. It was then held while one layer of catgut was wound tightly on the spool, and the end tied tightly to the first end with a double knot; otherwise the catgut would slip during the boiling. This secured it from unwinding and shrinking. Each spool held enough gut for one or two long sutures or ligatures. If more than one layer was wound on the spool, it would not be evenly subjected to the action of the formalin. The addition of thirteen parts of water to the ordinary commercial forty-per-cent. formalin solution, gave a three-per-cent. solution of formaldehyde, and this was the strength used for preparing the catgut. The same solution might be used repeatedly for months for treating successive batches of gut. The wound spools were immersed in the solution for a period dependent upon the size of the gut. Thus for No. 0, one hour was sufficient; for No. 2, three hours; for No. 3, six or seven hours. If the gut was left in the formalin solution much longer than this, it would become too brittle. After being taken out of the formalin, it was placed in a jar containing running water, and was left there fully as long as it was immersed in the formalin; but twenty-four hours' immersion would do no harm. The sterilization came next, and consisted in boiling the catgut for fifteen minutes in water. The spools were then removed with forceps, and were placed in glass jars previously sterilized by boiling, and containing ninety-five-per-cent. alcohol with a small percentage of glycerin. To chromicize the catgut, the wound spools of plain raw catgut were immersed for twenty-four hours in a solution consisting of one and one-half grams of bichromate of potassium, ten cubic centimetres each of glycerin and carbolic acid, and one litre of water. The bichromate of potassium should first be dissolved in the water, and then the glycerin and carbolic acid added. After immersion for twenty-four hours, the catgut should be hung up, drained, and dried. The treatment from this point on was the same as for the plain catgut. Such catgut would resist absorption for from six to eight weeks, except in the kidney and peritoneum, where it would be absorbed in about half that time.

What to Do to be Saved, Being the Conclusion of the Inquiry into the Abuse of Medical Charity.—Dr. Thomas J. Hillis, of New York, continued his inquiry into this evil by a parable. In this it was stated that a certain hospital, finding that it could not get the control of those in moderate circumstances that it desired, established "a dollar-a-month annex," and there the hospital governors doled out charity on three days of the week, with the help of medical talent that they had paid nothing for. As a result, the visiting physician became poor, but was assured by the hospital governors that if he should get sick they would take care of him at their dispensary, and, if the worst should come, they would use their influence with the superintendent of the poor and get him a ticket of admission to the poorhouse. Under the dollar-a-month plan the hospital became a rich corporation, and its governors domineering and insolent. Why should the visiting surgeon, the author queried, give his services so freely to such a corporation? It was not to gain experience in his art, because he must have demonstrated his ability and skill before being able to secure

his hospital position. The original motives were probably ambition and a desire to obtain indirectly some pecuniary advantage. But the glory of working for a corporation for nothing soon became irksome, especially when one was denied even the slight privilege of charging a fee to those coming under one's care who were abundantly able to pay it. In the older days there was a reason for asking the hospital surgeon to work without remuneration, for then the hospital was in swaddling-clothes; but it was not so now. The surgeon had found out all too late that he had been foully duped—he was but one more victim of ambition and the "charity fever."

Senility.—Dr. F. W. Higgins, of Cortland, read this paper. He said that as life was a constant balancing of the processes of assimilation and disassimilation, so old age was characterized by diminished assimilation. Old age began in the primary cell elements, and in due time became recognizable under the microscope as "fibrosis." The pathology of chronic alcoholism presented an almost identical array of lesions. Although senility could not be treated, senescence could, and it was the office of the physician to avert premature senility. The treatment of senility must necessarily be largely hygienic, attention being given to the quantity of food taken and the condition of the excretory organs. Alcohol was apt to do more harm than good, and care must be taken that medicines were not too strong.

Technique and Use of Saline Infusions.—Dr. Thomas F. Reilly, of New York, presented this paper. He advised cleansing the arm, making a short superficial incision over the vein in the right arm, passing a uterine tenaculum around the vein, and allowing it to hang while the vein was incised and the fluid injected. The tenaculum was then removed, and, if a ligature was not at hand a compress was applied. A sharp-pointed cannula was likely to injure the walls of the vein. In an emergency, a cannula might be extemporized out of a goose-quill or a medicine-dropper. Both experiment and clinical observation had demonstrated that there was very little danger from the introduction into the vein of small quantities of air. The saline solution was conveniently made by dissolving two small level teaspoonfuls of table salt in a quart of boiled water, and filtering. The quantity injected varied greatly, but it is rare for more than two pints to be required at one time, although the injection might often be repeated a number of times with advantage. Saline infusion was useful in: (1) Severe hemorrhage, whether external or internal; (2) in shock, both simple and post-operative; (3) in all toxæmic conditions, being preceded by venesection; (4) in cases of both vegetable and mineral poisoning; (5) any pathological state attended by marked diminution in the blood pressure.

Dr. J. W. S. Gouley commended the paper very highly, and stated that he was familiar with the technique as described and with the apparatus recommended by the author, and in his opinion they were superior to anything previously suggested.

Dr. M. C. O'Brien, of New York, compared the new method with the older and clumsier ones in a way which was most flattering to the reader of the paper.

Dr. Wiggin said that the plan of raising the vein out of its bed was a great improvement. Recently he had been very much pleased with the use of saline infusion in feeble persons who were unable to take sufficient nourishment after operation.

Dr. Joseph D. Bryant, the newly elected president, after a brief address, then declared the association adjourned. It is worthy of note that the attendance at this meeting was larger than it had been for eleven years, and that the number of out-of-town members present was over four times what it was last year.

Correspondence.

TORTICOLLIS.

To the Editor of the Medical Record.

Sir: In a recent article I stated that clonic contractions of the sterno-cleido-mastoid draw the head to the affected side. This is a mistake; it should read, to the "unaffected side." In mild contractions the deviation to the other side is not so perceptible as in spasmodic torticollis, where the severe clonic contractions of the sterno-cleido-mastoid produce a very decided deviation to the unaffected side. Under narcosis, the mistake has been made more than once, by very able surgeons, of operating on the wrong side. It offers a favorable opportunity for malpractice suits, and what a high opinion I have for those alleged doctors who testify against each other!

W. Moser, M.D.

100 South Fourth Street, Brooklyn.

"A FORM OF AMBLYOPIA."

To the Editor of the Medical Record.

Sir: In the issue of the Medical Record of October 8th, in the article "A Form of Amblyopia," the following occurs: "June 20th to 24th. R. V., $\frac{6}{15}$; $\frac{6}{6}$ with + 5 S. combined with — 0.50 C., axis 105." This should be: "June 20th to 24th. R. V., $\frac{6}{15}$; $\frac{6}{6}$ — with + 5 S. combined with — 0.50 C., axis 105."

Norburne B. Jenkins, M.D.

Knoxville, Tenn.

THE LADY PHYSICIAN VERSUS THE MIDWIFE.

To the Editor of the Medical Record.

Sir: The interesting article on the midwifery question in a recent issue of your esteemed paper ("Some Remarks on the Midwifery Question—Must the Midwife Perish?" by Thomas J. Hillis, M.D., Medical Record, No. 14, October 1, 1898) has certainly attracted much attention. It has always been the opinion of the best representatives of the medical profession that it was their duty (outside of any monetary considerations) to fight against the practice of medicine as a whole, or of any branch thereof, by ignorant persons utterly unprepared for it scientifically. The intelligent physician is yet to be found who will dare to proclaim midwifery not a branch of medicine. I might fill pages with quotations from the best authorities on the subject, claiming midwifery to be medicine. And yet here we perceive a strong voice of a physician for the retention of the midwife, a voice doubly strong because it appears on the pages of the most important medical publication in this country, which is supposed to voice the most advanced scientific medical thought. It is exceedingly important, therefore, to examine into the reasons brought forward by Dr. Hillis, so as to decide once forever whether we should not put a stop to our war against midwives.

Dr. Hillis defends his thesis with a good many reasons, medical and otherwise. We shall devote our attention to the former only, for arguments like "She [the midwife] has withstood the mutations of time and fortune for over five thousand years; she will withstand them until time is no more," or "To destroy her would be to tear that [social] fabric to pieces and bring about a condition of social chaos" (? !)—such arguments, I say, can be brought forward against any innovation in scientific or political life. Their validity would mean no more, no less, than absolute stand-

still. What, then, is the medical reasoning of the author? It runs somewhat like this:

1. The midwife is not so bad as we represent her; for "nature spreads a network of protection, woven with immutable art, over the exposed surface." It is very touching, this faith in nature. But why, then, have any attendance at all, birth being certainly a natural act? May I ask Dr. Hillis, however, whether he follows the strictest aseptic and antiseptic precautions in his private practice, or leaves it to nature? And if he does (as we are sure), does he believe that the American midwife knows anything about it—the ignorant woman without the slightest idea of the causes of infection? What per cent. of midwives use thorough disinfection with corrosive sublimate? Tying the cord after a successful end of a normal labor does not require much knowledge, it is true, but the numerous emergencies that may arise and require instantaneous attention are, I hope, familiar to every physician.

2. The young physician practising independently, or as a member of some charitable institution, is often worse than the midwife. It is not easy to perceive of what importance this statement, if true, is for the midwifery question. If the young physician does not know enough, and does not know how, it is his duty to learn, and it is the duty of the medical profession to see to it that no inexperienced physician be allowed to practise on his own hook. But it seems to me that Dr. Hillis underestimates the value of the young physician just as well as he overestimates the value of the midwife. The young practitioner is certainly very careful in regard to cleanliness, perhaps more so than his elder brother who is getting used to it. The young practitioner is, with very few sad exceptions, only too easily frightened into calling his elder brother into consultation. As to the specific accusations Dr. Hillis makes against the young practitioner, they are exaggerated, to say the least. Did Dr. Hillis in the younger days of his practice make three hundred vaginal examinations, "jeopardizing if not destroying her life"? Did he stay a whole week in the house of the parturient woman, waiting for the delivery, and annoying and frightening the patient to death? I have never heard of such a thing before. I might add, for the benefit of not only Dr. Hillis but also many more "old practitioners," that their attacks on the young members of the profession are not at all in accord with the principles of ordinary generosity or professional ethics, for the young physician is not a being *sui generis*. We all go through that stage, some earlier some later, and to abuse him is to abuse one's self.

Dr. Hillis hints rather plainly at the practice of the lying-in hospital and similar institutions. Dr. Hillis may have a grudge against them, and a just one too, but I have gone through this hospital course, and so have thousands of physicians now successfully practising right in this city, and they will all protest against this unjust accusation. The statistics of the hospital, with more than five thousand cases per annum and hardly a fatal case, is the best evidence of its most successful practice. According to Dr. Hillis, every dispensary physician carries cephalotribes, symphyseotomy saws, transfusion instruments, and what not, and is given full liberty to use them; while every one who has been to the lying-in hospital knows that only the highest authorities of the hospital, including some of the best practitioners in the city, professors of our collges, etc., are allowed to perform even the slightest operation. The tremendous growth of the practice of the hospital, the desire of even well-to-do people to get their help, shows that from the standpoint of result the practice is successfully substituting the old-fashioned midwife.

3. To take away the right of practice from midwives, to force the male physician upon the woman who would rather have her old midwife in servitude, Dr. Hillis declares, is invasion of her rights, is limitation of her liberties! What shall we say in regard to this argument? If regulation of medical practice by law is limitation of personal rights and liberties, why not abolish license examinations, why not give right of practice to every one who desires it, why fight the quack, the clairvoyant, the Christian science man? Why not follow the illustrious example of England and abolish vaccination? Why not go back to the condition of so many years ago? The question Dr. Hillis raises is exceedingly important. Have we the right to interfere with one member of the community and prevent him from deceiving the others? Dr. Hillis ought to know that, if anything, we have too much "liberty" (if thus to be called) in medical matters here. In what civilized country are all the "patent-medicine" humbug, the secret-medicine cheating, the medical companies, institutes, etc., so much indulged in as they are in the United States?

But does abolishing the midwife really mean that we force the male practitioner upon the bashful woman (though everybody knows how strongly imaginary this bashfulness is, for women of all classes are rapidly getting used to the male physician and prefer him)? Dr. Hillis knows that it does not, for there is the lady physician for the bashful woman to apply to. And when Dr. Hillis comes to that, we suddenly exclaim, "Da liegt der Hund begraben!" For now we know why Dr. Hillis has become the knight of the midwife. It is because he is afraid that when the midwife goes, the lady physician will take her place, and this may do harm to the male physician. For the midwife "does not claim to be an M.D. If a prescription is to be written, he writes it; if a fee is to be obtained, he gets it." With a lady physician in the field instead of a midwife she may get all these good things; she may also keep the family, for "the physician who attended the liquor dealer's or grocer's wife in her confinement is most likely to be the person summoned when the baby has a colic, be that person man or woman." "Again the natural or assumed bashfulness of some women is to be considered, and as a matter of preference, if one cannot have her midwife she will choose the lesser evil and employ the woman doctor rather than the young practitioner so skilled in his art."

Whether Dr. Hillis is justified in his fears of the competition of the woman doctor we do not know. Dr. Hillis does not seem to be so very sure of it himself, for in another place he says that this is the sentiment of that great heterogeneous mass called the public: "As for the female doctor we don't know her, nor are we anxious to make her acquaintance. . . . We want none of her." We shall leave it to Dr. Hillis to settle the contradiction with himself.

All we want to say is this: What was the use beating so much about the bush? The second half of Dr. Hillis' article shows plainly enough what makes Dr. Hillis defend the midwife. It is not so much her own intrinsic value as her services as resistance to the entrance of the lady physician; in short, it is not the patient's interest but the male physician's interests that animated Dr. Hillis. Dr. Hillis had better let the cat out of the bag from the beginning and then we would have no cause unjustly to suspect him of antagonism to scientific midwifery and antiseptics.

Dr. Hillis may be very much against the lady physician; it is his personal privilege not to like her and even to fight her. But we hope the MEDICAL RECORD will not support him in this fight. We all believe the MEDICAL RECORD to be non-partisan; we believe it to be the organ not of the male physician but of the whole medical profession, and the MEDICAL RECORD can be

easily convinced of it by looking carefully through the subscription list. The MEDICAL RECORD has therefore no more right to defend an attack of the male physician against the lady physician than an attack of the brunet medicus against all his blond brethren. The lady physician is no more a possibility; she is a fact. The sectionalism will therefore do nobody any good.

As to the midwifery question, it can be easily settled. The great advantage the midwife had—her cheapness—has vanished. The poorer classes get medical help (whether male or female) for $10, and these are the only people who stuck to the midwife. Yet the midwife did not charge much less. She must go, and the field left open will perhaps satisfy even Dr. Hillis.

I. M. RUBINO, M.D.

307 HENRY STREET.

DURATION OF PREGNANCY.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: A case has come to my notice which seems to me interesting enough to report, because of the coincidence in the length of two pregnancies in the same woman when the actual date of impregnation was known.

Mrs. X——, in the case of her first child, had her first intercourse on July 16, 1886, at about 9 P.M. Labor commenced by the rupture of the membranes, as the first warning, at 11 P.M., March 29, 1887—that is, after two hundred and fifty-six days and two hours.

Data as to the impregnating intercourse for the next three children are not known.

In the case of the fifth child, intercourse, after an interval of several months, took place December 22, 1897, again at about 9 P.M.; and labor commenced in the same way as before on September 5, 1898, at 6 A.M.—two hundred and fifty-six days and nine hours later.

Both children were healthy, fully formed bábies, with no indications of prematurity. The one weighed seven and one-half pounds, the other eight.

Has each individual woman her own special period of pregnancy, which is much more exactly determined than the average time for the whole human race, or is this that I have reported a mere coincidence? The character and intelligence of the couple concerned make the above statement absolutely reliable.

WILLIAM S. DODD, M.D.

CESAREA, TURKEY, September 26, 1898.

The Morphine Habit a Legal Defence.—A kleptomaniac in one of the British courts pleaded guilty, and her counsel assured the bench that she was in no want of money but had sufficient means to enable her to live comfortably; and asked that she be treated leniently, on the ground that the theft was due to the effects of the excessive use of morphine. According to the testimony she had consumed ninety-six grains of morphine in a single week. The magistrate suspended judgment, upon the defendant giving security in $250 to appear for sentence when required. De Quincey's daily consumption of laudanum was nine ounces, and there is a case on record where one hundred and twenty grains were taken at once, without producing death. The tolerance of opium and its salts proves in reality much more than old women's fables, and instances of enormous doses are in the possession of nearly every family practitioner. A poisonous draught of laudanum cannot be measured by cases on record.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending October 22, 1898:

	Cases.	Deaths.
Tuberculosis	166	130
Typhoid fever	122	24
Scarlet fever	84	6
Measles	57	4
Diphtheria	118	28
Laryngeal diphtheria (croup)	12	5
Chicken-pox	8	0

Marriage of the Unfit.—Theft and murder are considered the blackest of crimes, but neither the law nor the church has raised its voice against the marriage of the unfit, for neither has realized that worse than theft and wellnigh as bad as murder is the bringing into the world, through disregard of parental fitness, of individuals full of disease tendencies. This has been left to our own profession, and we shall be unworthy of its traditions if we do not, each of us in his own particular sphere, strive to bring nearer the day when, not in a heritage of woe but of blessing, the deeds of the fathers shall be visited upon the children unto the third and fourth generation.—DR. HARRY CAMPBELL, *London Lancet*, September 10th.

British Commission on Malaria.—The British foreign office in co-operation with the Royal Society has resolved to send out a commission of three medical experts to make an exhaustive study of African malarial fevers and black-water fever in particular. The gentlemen selected for this important task are Dr. R. S. Christopher, Dr. J. W. Stevens, and Dr. Daniels, formerly of British Guiana, and after certain preliminary investigations in Rome and India they are to proceed to Blantyre, where they will in all probability be engaged for about two years. The result of their researches into these dreaded African fevers will be awaited with the deepest interest.—*Sanitary Record.*

The Anti-Vaccination Act.—The anti-vaccination act, now a law, is in full progress. The Duke of Argyll's recent statement that an "immense plurality of blockheads indorsed it" has had no apparent effect. Parents are bringing up their children for certificates of exemption, with a pertinacity that steadily increases. Fifteen thousand of these printed forms have been requested by metropolitan magistrates. Queer mistakes are made by those who believe their children have been happily saved from the claws of the dragon. At Bow Street police court the other day a well-dressed man, who said he came from Wimbledon, approached Sir John Bridge with the now cut-and-dried formula of complaint—namely, his "conscientious belief" that vaccination would be prejudicial to the health of the child and his conscientious objection on that ground. Sir John Bridge: "How old is the child?" Applicant: "Three months and a half." Sir John: "Where do you say you came from?" "From Wimbledon." Sir John: "That is not within our district. I cannot listen to you or I might have applications from York or some other distant place." This is only one instance of many. It is apparent that they whom the gods would liberate from such awful tyrannies as those of the alleged venomous needle they first make stupid. "*Arma virumque cano*," runs the old story of how the schoolteacher addressed his pupil. "Translate that line, my lad." "Please, sir," was the reply, "its arms

and the virus I sing." Perhaps (who knows) that enterprising young student of Virgil had an antivaccinist father. Imbecilities among those seeking to avail themselves of the act abound everywhere throughout the kingdom. But sometimes we get a case in which the lawyer's opposite theories rather ludicrously crash with those of his interlocutor. One happened of late in Liverpool. Mr. Kinghorn (deputy stipendiary magistrate) gave audience to a young man who desired a certificate of exemption. "I wish to declare," said the sire of an unpunctured offspring, "that I don't believe, never did believe, and never will believe in vaccination." "Then you are hopeless," replied Mr. Kinghorn. "I don't know that anything else is needed."—*Collier's Weekly.*

The Impedimenta of the British Soldier in India.—The use of the valise—the supplanter of the knapsack of olden days—is, according to an English weekly journal, for infantry at any rate, doomed in the British Indian army. Ever since the occupation by England of that dependency, some two hundred and forty years ago, that article of "kit" and later of equipment has been as useless to the soldier in India as is the razor "served out" to the boy of a dozen years of age on joining the army. On embarking for the East each soldier is supplied with a strong canvas bag for his sea kit, into which very often he stows away his valise, and until his return to England, beyond a kit inspection, the valise is never used. Besides the valise each soldier in India, of whatever rank, is supplied with a black waterproof bag, together with a hempen cotton corded holdall, called a sullitah, into which when on the march, either by train, boat, rail, or road, he packs the whole of his belongings, the whole being carried, when on the road, on the back of the stately elephant, the patient camel, or in country carts. In barracks or in standing camps he is, in addition to all this, provided with a strong teakwood box, in which his entire kit is kept.

Scarlet Fever is extremely rare in both Asia and Africa.

India has perhaps a greater variety of plants than any other country in the world, having fifteen thousand native species, while the flora of the entire continent of Europe embraces only about ten thousand.

Artificial Teeth and the Aged.—A prominent doctor holds that artificial teeth are an evil in those of advanced years, because they enable such persons to masticate flesh. When the teeth fail naturally, it is nature's design that the individual should subsist on vegetable diet.

Vaccination and Small-Pox in Bavaria.—Considerable interest attaches to any information from Bavaria on the subject of vaccination, from its having been one of the earliest countries to adopt the practice and from the thoroughness with which in recent years it has been carried out there. The vaccination of infants was introduced into Bavaria as far back as 1807, though it was not actually insisted on until the child reached its third year. Even then a certain number escaped for one reason or another, but at six years of age a second line of defence was erected, because at that age school attendance is compulsory and every child on entering school is bound to produce its vaccination certificate. The result of this generally effective system of primary vaccination was well illustrated in the great pandemic of small-pox which attacked Europe in 1870–73. In 1870 there were 30,742 cases of small-pox in Bavaria, of which 29,429, or 95 per cent., were in vaccinated people. This at first sight appears to be a heavy indictment against vaccination, and has been used by antivaccinationists as such. But this assumption is entirely negatived when we learn that of the 5,070 deaths from the disease, only 137 were between the ages of two and five, and only 48 between six and ten—the period of highest protection; while 3,970 of them were over twenty years of age. These figures show in the clearest way that the mortality which increased steadily from eleven to sixty years of age was the result of the gradual weakening of the protection given in infancy. Further corroboration of the value of vaccination is derived from the experience of the Bavarian army, into which revaccination was introduced in 1843. From this date until 1870 only 6 deaths from small-pox occurred in it, while from 1828 to 1836 there had been 52 deaths. In 1874 Bavaria came under the operation of the general law of revaccination, which was applicable to the whole German empire, and the most recent results of that law are recorded in the consular report on Bavaria for 1897–98, presented to Parliament in July last. In this report the vaccination statistics for 1897 show that out of 164,800 children born, 150,942 were vaccinated for the first time, and 147,714 of them successfully. Of the 13,858 children who were not subjected to vaccination, only 1,050 evaded the law purposely; the remainder were excused on medical grounds, or were absent from home or not traced. Of the 124,277 persons liable to be vaccinated for the second time, 120,523 were successfully vaccinated, and only 235 evaded the law wilfully. With such effective vaccination as this, we are not surprised to be told that during 1896 only one case of small-pox occurred in the whole of Bavaria.—*British Medical Journal.*

History of Plague.—The first historical mention of plague is of an outbreak in Lybia, in the third century before Christ. Again we read of bubonic plague in the great plague of Justinian in 542 A.D. In the fourteenth century the "black death" appeared in southern Italy, 1346–47, and spread over Europe, reaching England in 1348, where it appears to have remained for five or six years. A second epidemic occurred in 1361, and a third in 1368. In the fifteenth, sixteenth, and seventeenth centuries outbreaks in Great Britain are recorded. The great plague of London in 1665, in which seventy thousand persons died, was the last English epidemic of plague. Plague occurred frequently in European countries up to 1841. In Russia it is endemic, sometimes of a mild type, but more often virulent. In India plague has probably existed since 1815, from time to time in a sporadic form and under various names in various parts of the country, with no reliable information as to mode of origin. In the autumn of 1896 a severe outbreak occurred in Bombay, which was preceded by an epidemic among rats of a fatal but hitherto unknown disease.—*Nineteenth Century.*

"What do I Get out of it?"—"What do I get out of it?" is one of the official stumbling-blocks encountered by the discoverer of a certain disinfectant, when he sought to induce the war department to use the germicide at the sick-camps. In his innocence and surprise the maker responded: "The assurance that by using it disease and fever will be greatly lessened and the ground rendered pure and wholesome." The official laughed in the speaker's face. "I know it is an excellent thing, but we won't take it just for that." Apparently humanitarian ideas do not influence men who run things on red tape, what-do-we-get-out-of-it principles. Is this one of the shameful mistakes which have cost so many of our brave boys their lives and health, or is it a well-understood "business transaction" sanctioned by the government? The "pull" in this war has been quite general, especially in the selection of camp sites.—*Sanitarian.*

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Original Articles.

DIFFERENTIAL DIAGNOSIS BETWEEN EXTRA-UTERINE PREGNANCY AND EARLY ABORTION.[1]

BY HIRAM N. VINEBERG, M.D.,

ATTENDING GYNÆCOLGIST TO ST. MARK'S HOSPITAL; TO MOUNT SINAI HOSPITAL, OUT-DOOR DEPARTMENT.

AN accumulation of experiences during the past few years has convinced me that the profession at large is still not sufficiently alert in the detection of ectopic gestation, nor even in suspecting it when it is actually present. The error that is most frequently made, judging from my own experience, is the diagnostication of early abortion for extra-uterine pregnancy. This mistake has been made not merely by careless and inexperienced men, but by physicians with extensive experience and who generally are very careful in the observation of their patients. The presence of an abnormally placed gestation never occurred to them, and it was only after one or more futile curettages that their eyes were opened to the probability that the case was not one of simple uterine abortion. It is more easy to fall into this mistake than may be imagined at a first glance. I have known careful and expert gynæcologists to commit it more than once. There are times when it is almost impossible to decide definitely whether a given case is one of early abortion with a thickened tube or one of early ectopic gestation with sympathetic enlargement of the uterus. The object of this paper, therefore, will be, by the narration of some illustrative cases occurring in my own practice, to emphasize the necessity of constantly bearing in mind the probable occurrence of an ectopic pregnancy in any given case presenting symptoms of early abortion. By following such a course we will avoid falling into error in the majority of cases, and thus be able not infrequently to save a life that otherwise would be sacrificed.

CASE I.—Mrs. Z——, thirty-two years old, married ten years, the mother of two children, the last being two years old; had always been well and the menses had been very regular, lasting from three to four days. On November 1, 1894, her menses set in at the usual time, but continued only for one day and were very scanty. About a week before this she had a severe attack of pain in the right lumbar region, which lasted for about two hours. From its position and severity it was looked upon as an attack of renal colic. On November 5th—*i.e.*, four days after the one-day menstruation—she had a slight show, lasting for only a few hours. Her physician concluded from the symptoms and examination that she was having a very early abortion, and so as to hasten the event introduced a laminaria tent into the cervix. A week later the patient had severe pain in the right groin and several fainting-spells, followed by fever ranging from 101° to 102° F., and other signs of pelvic peritonitis, which were interpreted as a complication of the abortion.

I saw her first on December 2d. On examination the posterior vaginal vault was found hard and tender. The uterus lay in anteversion and apparently was not enlarged. The diagnosis of a probable ruptured tubal pregnancy, followed by pelvic peritonitis, was made. As there were no urgent symptoms and the patient was progressing favorably, I advised waiting and continuing with the palliative treatment employed. The patient kept on apparently improving for the next three weeks, when suddenly one morning (December 23d) she passed about a teacupful of blood from the vagina, suffered severe pain in the left groin, and had several fainting-spells. When I saw her a few hours later she was moderately exsanguinated; the pulse, 120; temperature, 101° F.; and the abdomen was considerably distended. She was at once transferred to the hospital, and I operated upon her at 2 P.M. the same day. I found the abdomen full of liquid blood and blood clots of various ages, some quite fresh and others old and firmly organized. The right tube contained a fleshy mole of the size of a hen's egg. The patient made an uneventful recovery.

I based my diagnosis in the foregoing case not so much upon the physical examination as upon the clinical history. The flow was too irregular and scanty for a uterine abortion, but, above all, it was the fainting-spells that led me to suspect extra-uterine pregnancy. Of course after the second attack, with the sudden and profound anæmia, the diagnosis was no longer in doubt.

CASE II.—Mrs. T——, aged twenty-six years, married five years, the mother of one child, three years old; had always enjoyed good health. Her last normal menstruation was on July 28, 1896. On August 9th—that is, when she was three days overdue—she began to flow without any symptoms. On the 10th she had severe colicky pains, diarrhœa, and vomiting. As the weather was very hot, her physician pronounced it a case of "summer diarrhœa," and thought that in addition she was having an early abortion. On the 12th she had severe fainting-spells, which were attributed to the heat and to the continued diarrhœa. On the 14th the doctor dilated the uterus and curetted it. On finding it empty the probability of an extra-uterine pregnancy occurred to him.

I saw the patient on August 15th. She was profoundly exsanguinated. The doctor stated that he noticed the anæmia three days before when she had the fainting-spells, but it did not excite his alarm, as he thought she was merely pale as a result of the profuse diarrhœa. The abdomen was enormously distended and tense. The pulse, 140, was small and weak; temperature, 103° F.

I immediately performed a laparotomy, and on opening the abdomen blood poured out from it as water does from an open street hydrant. I rapidly passed my hand into the abdomen, caught hold of the left ruptured tube, clamped it first, and after ligation cut it away. The blood was washed away as well as possible, copious saline irrigations being employed, and the patient returned to bed almost pulseless. She rallied nicely from the loss of blood, but only to die twenty-four hours later from the septic peritonitis which was present at the time of operation.

I will not assert that the error in the foregoing case

[1] Read before the Harlem Medical Association, October 10, 1898.

was entirely avoidable, for the diarrhœa no doubt formed a misleading factor; but the doctor's suspicions should have been aroused on the occurrence of the fainting-spells and the marked anæmia. These, taken with the irregular flow when three days overdue, afforded a classical clinical picture of ruptured tubal pregnancy with considerable intraperitoneal hemorrhage. There is no reasonable doubt in my mind that had this patient been operated upon on the 12th, when presumably the intraperitoneal hemorrhage first occurred, her life would have been saved. From the time of the rupture of the tube until the operation was done, sufficient time had elapsed for the development of a septic peritonitis which irrigation with saline solution and drainage could not arrest. It is this feature of the development of a septic peritonitis which makes delay so hazardous in the occurrence of intraperitoneal hemorrhage in considerable amounts. It has always been my custom in these cases to operate at once, without waiting for the patient to come out of shock, as advised by some operators; for the twofold reason that good surgery requires us to clamp a bleeding vessel as soon as we possibly can, and that the contents of a pregnant tube are not likely to be aseptic; hence the sooner we remove such products from the free peritoneal cavity the less likely are we to have the development of septic peritonitis. I have operated upon a fairly good number of such cases, and have never lost a case from shock, but did lose two (the above one and another) from septic peritonitis which had existed prior to operation as a result of delay.

Case III.—On June 4, 1897, I was asked by a New York physician to go with him to Brooklyn to see a lady who had been a patient of his until she removed from this city about two years ago. He had been sent for that morning to consult with the physician in attendance, and, on finding a condition which he considered serious, requested that I should be called in consultation. The woman was thirty-two years old, had been married twelve years, and was the mother of two children, the youngest of which was eight years of age. In February, 1894, she had had a trachelorrhaphy done by Dr. Skene. During February and March of 1895 she was in bed most of the time with an attack of pelvic inflammation. She made a fairly good recovery from this, but continued to suffer occasionally from attacks of pelvic pain on exercise or on exposure to cold and wet. Latterly these attacks were growing less frequent and less severe.

In the beginning of April, 1897, when she was six days overdue (prior to that her menses had been regular), she was attending to her garden, and in trying to pull out a shrub she was suddenly seized with a severe pain in the back. She immediately went into the house and lay down in bed. The pain passed off in a few hours. On the following day she took a hot bath, presumably for the purpose of bringing on the menses. It seemed to have the desired effect, for she began to flow shortly after it and the flow lasted for two days. The usual duration of her menstrual flow was four days. Some days later she again began to flow rather profusely and to have labor-like pains. She thought she was having a miscarriage, and sent for her physician. He arrived at a similar diagnosis after making a vaginal examination. He treated her palliatively for a time, but as the flow was continuing he did a curettage, without narcosis, at which time he detected what he diagnosticated as a retroversion of the uterus. For the next five or six weeks he made frequent visits, at each of which he would try to bring the uterus forward and introduced tampons. The woman continued to suffer more or less, was having irregular hemorrhages, and, becoming dissatisfied with her medical attendant, sent to New York, with the result we have seen.

I found a pale, delicate woman, considerably emaciated, with a weak and rapid pulse, and a normal temperature. The uterus, somewhat enlarged, was in a forward position, and behind it was a tense, elastic mass filling the posterior quadrant of the pelvis and ascending upward to the right side. It was closely attached to the uterus, and was rather firmly fixed. On the left of the uterus was an oblong mass, the size of one's thumb; this was fairly sensitive. The patient stated that for some time past so long as she would remain in bed she would not lose any blood, but the moment she got up and walked about she would discharge it in fairly large quantities. My first examination was made while she was in bed, and there was absolutely no blood on the examining finger. In order to make a more satisfactory examination, I had her walk into the next room and get up on a table. To my astonishment I now found the vagina filled with a dark tarry fluid, which on further examination proved to come from the uterus. I made the diagnosis of ruptured tubal pregnancy forming a retro-uterine hæmatocele, which had opened into the uterus, and advised operative interference. She was taken to St. Mark's Hospital, and on the day following (June 5th) I performed a laparotomy.

The abdomen being opened, a moderate amount of dark liquid blood was found in the free peritoneal cavity. The mass behind the uterus proved to be a blood tumor with pretty thick walls, firmly attached to the posterior wall of the uterus and to the pelvic floor. The communication of the blood tumor with the uterus was found to be through an irregular opening in the posterior wall of the uterus just above the internal os. The right tube and ovary were totally disorganized and matted together into an indistinguishable mass. The left tube was the thickness of one's thumb, the abdominal end club shaped and closed completely. I amputated it, leaving the small ovary behind. The opening in the uterus could not be sutured, owing to the friability of the tissues; hence the cavity was drained with a strip of gauze emerging in the vagina. The patient made a rapid and satisfactory recovery. She soon gained in flesh and strength, and has since menstruated regularly without pain.

In the foregoing case it is not easy to account for the egregious error committed. The attending physician at his first examination found an enlarged uterus. When he attempted to curette, he no doubt pushed the instrument through the posterior wall of the uterus into the blood tumor, and, finding the instrument to pass in a backward direction, concluded that there was a retroflexion. The blood tumor posteriorly simulated the enlarged fundus which he made so many ineffectual efforts to bring forward. It is a wonder that the woman survived the treatment.

Case IV. was that of a woman, thirty years old, who had had four children, the youngest twelve months old, which she had nursed up to within two weeks prior to her visit to me on January 5, 1897. She stated that she had not menstruated since the birth of her child until eight weeks ago, since which time she had menstruated twice. A few days before coming to see me she began to have a slight show. She was then two or three days overdue. The show was attended with severe pains resembling labor pains. I found the uterus of normal size, and to the left of it an irregular mass about the size of a mandarin orange. The mass was closely attached to the uterus, was not easily mapped out, and was quite sensitive. I diagnosticated extra-uterine gestation and advised operative interference. Thereupon she entered one of our large hospitals, was kept there for a couple of days, during which time she was repeatedly examined by the attending gynæcologist, who told her she probably had had an early miscarriage, that there was no indication for an

operation, and she was discharged from the hospital. Upon returning to me with this opinion, I examined her again and adhered to my former diagnosis. She passed out of my hands, however, but was operated upon by some one else a few days later. The operation disclosed a ruptured tube surrounded by several soft blood clots.

I based my opinion partly upon the delayed menstrual flow, but chiefly upon the severe labor-like pains and upon the finding on bimanual examination. A woman does not suffer such severe pain with an abortion of a uterine pregnancy of a few weeks. A cystic ovary is rarely attended with pains of such a nature. An acutely inflamed tube gives rise to a more constant and throbbing pain, and usually is attended with febrile disturbances. But upon the latter symptom, or rather upon its absence, we do not want to lay too much stress, as a ruptured tube may give rise to a localized peritonitis and to consequent elevation of temperature.

Case V. was seen by me on February 24, 1898. She was a frail, delicate woman, who had been married six years and had one child, three and one-half years old. Her menses had always been more or less irregular, recurring in four, five, or six weeks, and were painless. During the preceding summer, while in the country, she had an attack of fever with nausea and was treated for malaria. About a month prior to my visit, after an interval of six weeks, a flow set in—presumably her menses. But the flow continued for a longer time than usual, and was attended with great pain. She therefore consulted her physician, who, after an examination, decided she was aborting and curetted her on two different occasions, both times without any anæsthetic. The flow ceased, the pain in the left iliac region continued, and the patient was suffering from obstinate nausea and vomiting. She had a slight elevation of temperature, and the pulse ranged from 110 to 130.

At the time of my visit I found the abdomen moderately distended, rather rigid, and a tumefaction in the left iliac region. On vaginal examination an irregular mass was found to the left of the uterus. The mass had no distinct outlines, and was closely attached to the uterus and pelvic wall. It had a varied consistence, being fluctuating at some points and moderately hard at other points. A diagnosis of probable extra-uterine gestation was made, complicated with general peritonitis. As the patient was in no condition to withstand a major operation, a vaginal incision was made over the mass, and about a teacupful of dark blood clots was evacuated. The cavity was gently irrigated with saline solution and packed lightly with iodoform gauze.

For the next three days the temperature ranged from 99° to 101° F., and the pulse from 116 to 130. The abdomen became flaccid; the patient passed flatus freely, and had several stools. Still I was not satisfied with her progress. The vomiting persisted with variable severity, and the patient made the impression of being a very sick woman. On the fourth day after the vaginal incision the pulse had improved very much in quality, and I felt that now the opportune moment had arrived either to do a vaginal hysterectomy or to open the abdomen and to be guided in my further course by what would be found. Another consultant was called in, and, as he was opposed to a radical operation, nothing further was done. The patient died three days later, the symptoms remaining about the same, excepting that twelve hours prior to death the pulse and temperature went up considerably. Flatus and stools were passed to almost the very last. The abdomen did not become very much distended. When the abdomen was opened after death the omentum was found in a condition of gangrene, the intestines were bathed in purulent fluid, and the peritoneum was of a dirty grayish color. There was no communication between the general peritoneal cavity and the cavity opening through the vagina. The right adnexa were not enlarged, but they were very much discolored. The patient therefore had, in addition to her pelvic hæmatocele, as a result of a ruptured tubal pregnancy a low grade of general peritonitis. The origin of the latter is uncertain, but it is more than likely that the two curettages under imperfect or no aseptic precautions stood in a causal relation to it.

In this case there may be some excuse for not recognizing the condition at the outset, but the patient's life would probably have not been sacrificed had the attending physician not tampered with the uterine cavity. If the attendant is satisfied that a curetting is indicated, then he ought to do it under anæsthesia and with the proper precautions. But more of this later on.

I will now narrate a few cases in which the opposite error in diagnosis was committed, an intra-uterine pregnancy being mistaken for an ectopic gestation.

Case VI.—A young married woman had passed her period for ten weeks, when she began to have pain in the lower part of the abdomen and slight hemorrhages. On examination I found a uterus the size of a gravid organ at ten weeks. The enlargement, however, was not uniform, there being a distinct bulging of the posterior wall, which made the impression of a tumor the size of a hen's egg. Without taking any credit to myself, I must frankly say the idea of ectopic gestation did not occur to me. I sent her to a well-known colleague, who is an excellent diagnostician, for the purpose of demonstration to a class of students. He diagnosticated ectopic gestation. In a week afterward I was sent for, and on my arrival found the ovum with its envelopes lying in the upper part of the cervix. I removed it easily with my fingers. It was simply a case of intra-uterine gestation, which had aborted at about the eleventh week from chronic metritis.

Case VII. is of special interest in this connection. The patient was brought to me by her physician, a most careful and able diagnostician, for operation for extra-uterine pregnancy, which he felt confident existed. When I heard her history prior to examination I was rather certain such was the case. She was thirty-one years of age, and had married three months before. The first two periods after marriage were regular. During the interval between the second and third period she had a slight show with some pain. The third period was delayed two days; the amount was about as usual. The flow ceased on June 14, 1897. On June 22d she had a show for about a day, unattended by pain.

I saw her June 30th. She then was having some pain in the hypogastrium. On examination I found a long cervix, and in front of this toward the left side a tense globular mass, rather sensitive to pressure, corresponding in size to a gravid uterus at ten weeks. On continuing my examination for some time and on catching the cervix with a tenaculum and pulling it down, I was enabled to determine positively that the cervix was directly continuous with the mass. I diagnosticated pregnancy in an undeveloped uterus, and predicted that the patient would probably abort. I received a letter from the doctor later, saying that the patient had aborted a week after I had seen her, and that the product of conception seemed to be that of the tenth or twelfth week.

In this case the doctor had mistaken the long cervix for the entire uterus, and he looked upon the globular tumor therefore as being extra-uterine. Some of these cases are extremely puzzling and necessitate at times an examination under narcosis. Hooking a tenaculum into the cervix and pulling upon it gently often very materially helps to clear up the diagnosis.

Irregular enlargement or sacculation of the pregnant uterus, as occurred in the foregoing case, may readily lead to an error in diagnosis. I drew the attention of the profession to this condition over three years ago, in a paper published in the *New York Medical Journal* for March 23, 1895. Since then I have met with a number of cases in which it was only after very careful examination that I could arrive at a correct opinion. As the phenomenon is usually met with in chronic metritis or in the presence of pelvic adhesions, in which condition there is a strong tendency to pain and uterine hemorrhage, the symptoms as well as the physical signs simulate an extra-uterine pregnancy.

Dr. M. McLean related a very interesting case at a meeting of the New York Obstetrical Society in the winter of 1894, which forcibly illustrated this point in differential diagnosis. The error was cleared up only after the abdomen had been opened and the uterus examined with the aid of the sight.

A retroflexed pregnant uterus with a long cervix has time and again been diagnosticated as an extra-uterine pregnancy. In this condition there is also a tendency to irregular hemorrhages and to severe paroxysmal pain, from the inability of the uterus to grow owing to the fundus being imprisoned below the promontory. On examination the enlarged and elongated cervix gives the impression as if it were the entire uterus, and the large, semi-elastic fundus as if it were a separate tumor. In a case which I reported in the paper already referred to, a sound had been frequently passed by myself and others. It entered in a forward direction, and indicated what we took to be a uterine depth of over two and one-half inches. The tumor in Douglas' cul-de-sac was then about the size of a fœtal head, and was looked upon as an ovarian tumor. The patient was then lost sight of for several months, when one night I was hurriedly summoned to her. I found her suffering from what I at once recognized as strong labor pains. The abdomen was filled with a tumor which was readily distinguished as a fœtus at about full term. On vaginal examination, however, the same small uterus was apparently felt, with a long narrow cervix which was tightly closed. As the pains had already lasted for some hours and there were no signs of dilatation or effacement of the cervix, I concluded I had to deal with an ectopic gestation at full term. The late Dr. James B. Hunter was sent for. He confirmed the diagnosis, asked me to remain with the patient over night, and transport her to the Woman's Hospital early in the morning, when he would be ready to open the abdomen. To subdue the pains, which were severe, I gave, with his advice, hypodermics of morphine; but in spite of these they continued to increase in severity. Toward morning the cervix began to open up, and before the time arrived for sending the woman to the hospital she was delivered of a good-sized female child.

Dr. Hunter told me of a similar case, that of the daughter of a well-known physician in the city. She had been seen by several of the leading gynæcologists, all of whom diagnosticated extra-uterine pregnancy at full term. The error was detected only after the abdomen had been opened. The patient died as a result of the operation.

The books say very little upon this topic. Fritsch[1] is the only author I have been able to find who lays particular stress upon this source of error in the diagnosis of ectopic gestation. He recommended in cases of doubt a thorough examination under narcosis.

Since the foregoing experience I have seen several cases in which I might have been led into error had not the case indelibly impressed itself upon my mind.

A class of cases that are frequently puzzling from the point of differential diagnosis are those in which an early uterine abortion has occurred and a tumor is found on one or other side of the uterus. They usually present the clinical and physical signs of extra-uterine pregnancy. There are uterine hemorrhages, pain which may be more or less severe, and which often is of a colicky nature. On examination the uterus is found enlarged, corresponding in size to that which is met with in tubal pregnancy; the cervix is closed, giving no indication of the preceding event. A tumor is found near the uterus, which probably is sensitive to pressure, the shape and size of a pregnant tube of an early date. Practically these cases are of no great moment, as operative interference is indicated in either contingency. But in the one case immediate operation is imperative; in the other time does not form such an important factor. In any given case presenting this complex problem, it is more safe to cast the doubt in favor of immediate operation.

Another class of cases presenting a knotty problem to solve in differential diagnosis is formed by those rare instances in which gestation occurs simultaneously within the uterus and in one of the tubes. The rupture of the tube may precede, accompany, or follow the uterine abortion. In a few instances the uterine pregnancy has been known to go to term.

During the past summer I was called to a case in a neighboring town, in which this contingency had to be considered. The patient was thirty-three years of age, had been married fourteen years, and had four children, the youngest being two years of age. The woman was in the habit of frequently resorting to the intra-uterine use of a catheter whenever she was over time. Four weeks prior to my visit on August 16th she had gone twelve days over time, when she made use of the catheter. This failing in the desired effect, the aid of a midwife was called into requisition. The latter's efforts were apparently crowned with success, for on the following day a decided flow set in, attended with severe pain. Two days later the patient was seen by the local physician, a very capable man. He found the uterus moderately large, and a temperature of 103° F. and a pulse of 110. He immediately curetted her under full anæsthesia, removing about a teacupful of decidual tissue. The uterus was lightly packed with iodoform gauze. The patient shortly afterward had a severe chill and the temperature went up to 104° F., but fell to the normal on the next day. She apparently made a good recovery, remaining in bed for a week. On getting up she began to suffer from frequent attacks of abdominal pain resembling labor pains. These increased in severity, so that for the past week she had to keep to her bed. The temperature had been normal until the week previous, since when it ranged from 100° to 101° F. The flow had not recurred since the curettage. While she was under the anæsthetic, the doctor detected behind the uterus a roundish tumor of varied consistence and about the size of a large orange. This tumor had increased in size during the four weeks she was under his observation.

I found a thin, wiry-looking woman, with a face having the expression of acute suffering. She stated that prior to this illness she had been free from any pelvic symptoms. On examination I found the uterus slightly above the normal size, and with the cervix rather large and somewhat patulous. Behind the uterus and closely attached to it lay a tumor about the size of a cocoanut, which was moderately fixed. It was of varied consistence, being partly soft and elastic and partly moderately hard. The left adnexa could not be palpated, owing to great rigidity of the abdominal wall and sensitiveness of the patient. The diagnosis lay between a retro-uterine hæmatocele complicated with pelvic peritonitis, as a consequence of a ruptured tubal pregnancy, or a dermoid cyst with some

[1] "Die Krankheiten der Frauen." Berlin, 1894. p. 486.

local peritonitis. The absence of any symptoms prior to the present trouble, and the fact that the tumor had appreciably increased in size since it was first detected four weeks previously, favored the diagnosis of extra-uterine pregnancy occurring simultaneously with the intra-uterine. On opening the abdomen a few hours later I found a dermoid cyst of the right ovary with considerable adhesion. There was a cyst of the left ovary about the size of a mandarin orange. Both cysts were removed, and the patient made an uninterrupted recovery.

An additional feature of interest in the case is the circumstance of the woman having conceived so recently when both ovaries were evidently completely disorganized. At the time of their removal there was absolutely no ovarian tissue appreciable to the naked eye.

It occasionally happens that the abdominal and uterine walls are so thin that the normally situated fœtal sac is felt as if it lay in the abdominal cavity. I met with a remarkable instance of this kind.

In the summer of 1897 a physician came to my office to tell me he had that day referred to my service at St. Mark's Hospital a patient who had an abdominal pregnancy at about the fourth month. He considered an operation imperative, as the woman was suffering severe agony. He informed me the diagnosis had been made at a special hospital in this city which the patient had entered, but that she refused to be operated upon after remaining there a week. The woman herself told me she had been shown to a number of doctors in the hospital, all of whom came to the same conclusion and urged her to submit to an operation.

What immediately struck me upon palpating the abdomen was the remarkable thinness of the anterior wall. It did not seem thicker than ordinary skin. The fœtal parts could be mapped out with surprising distinctness. On vaginal examination I found a large, flabby, and thin uterus, which was difficult to outline. After an extended examination I came to the conclusion that the pregnancy was uterine. To verify my opinion I had the woman anæsthetized, dilated the cervix so that I could introduce my index finger, when I unmistakably felt the fœtal parts within the uterus. The patient was put to bed and small doses of opium were administered. The expected abortion did not occur, and she was discharged from the hospital three days later. She went to full term and had a normal delivery, as I was afterward informed by her physician.

I can account for her not aborting only by the usual irony of fate—she was in extreme poverty and already had a large family.

This was the only instance in which I resorted to dilatation of the cervix and direct exploration of the uterine contents with the fingers. The measure is justifiable only in very obscure cases and when we can arrive at no definite conclusion by other means. Had it not been for the great respect I entertained for the opinion of the gentlemen who had made the diagnosis of abdominal pregnancy, I should not have thought it necessary to resort to it on the above occasion.

Even the small collection of cases outlined in this paper teaches us that there is no symptom or group of symptoms upon which we may place absolute reliance in the differential diagnosis between early abortion and ectopic pregnancy. The symptoms that are usually given by writers on the subject as pathognomonic of the latter state are: (1) irregular hemorrhages following a longer or shorter delay of the menstrual period; (2) the discharge from the uterus of decidual membrane; (3) colicky pains. We have seen that irregular hemorrhages, resembling those encountered in ectopic gestation, may occur in uterine pregnancy, as in Case VII. There is nothing in the appearance of the blood which is indicative of the one condition or the other, unless it be that in uterine abortion the flow is apt to be much more profuse.

It is true that an irregular flow or a mere spotting coming and going in a woman who has always been regular, but who has now gone one, two, or three days over time, should make us suspicious of ectopic pregnancy. The symptom, however, should only put us on the alert, for we ought not to attach too much importance to it singly.

The question whether a uterine hemorrhage consequent upon a ruptured tubal pregnancy or tubal abortion may occur before the onset of the next menstrual period—in other words, without amenorrhœa—must be answered in the affirmative. Quite a number of such cases have been placed on record by reliable observers. In these cases rupture of the tube takes place before the time elapses for the next menstruation. Of thirty-eight cases that I have seen during the past five years, operated upon by myself and by others, there were four in which there was no amenorrhœa. In one case the uterine hemorrhage occurred seventeen days after the last regular menstrual period. In two cases the menses recurred at the usual time, but after they had continued for a day or two in the usual manner, the flow became irregular, being profuse one day, absent or scant on the next, and again profuse on the third day, and so on. In a fourth case (Case I.) the menses set in at the usual time, but lasted only one day. Four days later the irregular flow occurred.

Great stress has been laid by many writers upon the discharge of decidual membrane or tissue from the uterus. There can be nothing more misleading than this symptom. In the first place there is no membrane discharged in a great number of cases, the decidua either being cast off in shreds or undergoing degeneration. In the second place it may be expelled unnoticed in the blood clots. Thirdly, when questioned, the patient will often reply that she has passed a membrane, when what she actually passed was a semi-organized blood clot. Lastly, and most important of all, is the fact that even the most expert microscopist cannot distinguish between the decidual tissue of a uterine pregnancy and that of a tubal gestation. This fact nullifies the advice given by some authors to curette the uterus in a suspicious case and examine the tissues removed for decidual cells. Not alone would the finding of decidual cells form no proof of the existence of tubal gestation, but it would be no proof even of uterine pregnancy,[1] for so able a microscopist as Carl Rup[2] has stated that in the absence of the pregnant state he found decidual cells in diseased conditions of the uterus.

We have heard a great deal about colicky pains as being characteristic of extra-uterine pregnancy. This is another misleading statement. The pain attending rupture of a tubal pregnancy and of the subsequent intraperitoneal hemorrhage is as variable in its character as the color of the chameleon. At one time it may be sharp and lancinating; at another it may resemble the bearing-down pains of dysmenorrhœa; at a third it may simulate ordinary colic; in a fourth (most commonly met with in my experience) the patient will tell you that the pain is exactly like that of labor; in a fifth it may be of a throbbing nature, like that occasioned by an inflamed ovary.

The one symptom in my experience that has afforded me the strongest clew has been the occurrence of fainting-spells with the attacks of pain. But this symptom is frequently absent, and may occur even in

[1] Of course the discovery of chorionic villi in the discharged products would be proof evident that the gestation was intra-uterine. But such a fortunate occurrence is exceedingly rare and is not likely to be met with in the cases under consideration.

[2] Centralblatt für Gynäkologie, 1881.

uterine abortion in a nervous or hysterical subject. I have frequently met with Russian and Polish women who stated that they had had several fainting-spells, when on examination I found they were suffering only from an ordinary miscarriage. But in women not belonging to these nationalities and who are not subject to fainting-attacks, the occurrence of this symptom in association with irregular uterine hemorrhage and pain should always lead us to suspect very strongly intraperitoneal hemorrhage.

Neither the scope nor the purpose of this paper will permit a description of the objective signs of tubal pregnancy. The classical cases with slight enlargement of the uterus and readily distinguishable mass of a globular or egg shape lying behind or to one or other sides of the uterus do not concern us. It is the difficult and obscure case in which these conditions do not obtain that must engage our attention.

The detection of these cases by examination cannot be learned from any description, no matter how full or lucid. One practical point may be mentioned now which has already been touched upon. In a given case of supposed uterine abortion calling for a curettage, the patient should be fully anæsthetized, both for the purpose of enabling one to make a thorough and satisfactory examination and for the proper performance of the curetting.

I have not been able to present you with any pathognomonic sign or symptom which would enable you to differentiate in a given case between early abortion and a ruptured tubal pregnancy of an early date. If, however, I have been able to furnish you with a few points which may serve as mere finger posts in the intricate mazes of the differential diagnosis between these two conditions, I will remain satisfied.

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DERMATITIS VENENATA: A RÉSUMÉ OF ITS ETIOLOGY, SYMPTOMS, DIAGNOSIS, AND TREATMENT.

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While in the strictest acceptation of the term, dermatitis venenata comprises numerous cutaneous inflammations of different degrees and extent, which are produced by the action of medicinal, chemical, animal, and vegetable substances, still, as it is used today in the unmodified sense, and as I shall endeavor to discuss the subject, it refers to the skin lesions resulting from the irritation of the rhus toxicodendron or poison ivy. Inasmuch, however, as other plants of the Rhus family (Rhus venenata, poison sumach; Rhus diversiloba, poison oak), as well as cowhage, nettle, mezereon, and arnica, may give rise to similar inflammatory conditions, it may not be altogether amiss, before entering into the subject from an etiological, symptomatic, diagnostic, and therapeutic standpoint, to describe briefly the main characteristics of these plants, and also to make mention of a few others with which they may be confounded.

The Rhus toxicodendron of American authors is a shrub vine of North America, sometimes low and erect (Rhus radicans, Linné), but more commonly a climber along trees, rocks, fences, etc. It consists of alternate dull green leaves with three leaflets, the flowers hanging in loose green panicles, the fruit smooth and pale brown. The whole plant, especially the root and leaves, contains a poisonous, caustic, milky juice, which becomes black when exposed to the air.

"The Rhus toxicodendron is distinguished as the three-leaved ivy from the innocuous Virginia creeper or five-leaved ivy. It is often confounded with the common clematis, but the trifoliate leaves of that plant are opposite and not alternate as in poison ivy."[1]

Rhus venenata, or poison sumach (poison elder, poison dogwood, poison ash), is a small, handsome tree, growing in the swamp borders of eastern North America. It is even more poisonous by contact or vicinity than the poison ivy.

"The leaves have from seven to thirteen leaflets, and, like those of other sumachs, become brilliantly red in autumn. In this condition they are unwittingly gathered for ornaments. It is distinguishable from other sumachs by its smooth leaves, entire leaflets, axis not winged between the leaflets, and the white fruit."[1]

"The poisonous sumach bears white berries; the red-berried varieties may be handled without harm."[2]

The Rhus diversiloba, or poison oak, found in Pacific North America, is similarly poisonous but not high climbing.

Etiology.—The disease stands in direct causative relation to the ivy plant, but the exact nature of the poison has thus far not been definitely determined. Whether it be, as has been generally accepted, the volatile toxicodendric acid discovered by Maisch, of Philadelphia, or whether an oil, the toxicodendrol of Pfaff,[3] be the real etiological agent, still remains an open question, which must be left to the future investigations of pharmacists and physiologists.

Pfaff, believing that the poisonous oil, found in varying amounts in the roots, leaves, fruit, branches, and stems, is the prime factor in the production of the disease, naturally maintains that direct contact with the poison ivy must occur, in order that infection may take place. He states that during the course of his laboratory experiments, none of the many hundred persons who passed in and out were affected, unless they handled the plant or the free oil. It would manifestly be unfair to say that all these persons were not susceptible to the poison; still, experience seems to teach that in many cases actual contact is unnecessary.

Dr. Louis Frank, of Milwaukee, who has devoted considerable attention to the subject of Rhus toxicodendron, has on two occasions thoroughly applied the free oil to his arms and to those of his druggist, without any inflammatory reaction. However, he says: "Possibly neither of us is susceptible to the poison, and further experiments are necessary."

At the outset, mention must be made of the very wide limit within which the susceptibility of different persons varies. That such a thing as a predisposition to ivy poisoning exists, no one who has had very wide experience with the condition will deny. While one may come with perfect impunity into the closest contact with the plant (handling it, rubbing against it), another has but to be in the neighborhood of its growth to become the subject of a most extensive infection. In the latter cases it seems as if the very winds themselves waft the poison to the victim. Not ony does this susceptibility vary qualitatively, but there are quantitative differences, if I may use the term. Some predisposed individuals will have but mild attacks, again and again, while others will present a most pitiable sight at every recurrence. This variable extent of the lesion would seem to depend upon the susceptibility of the person, the condition of the patient's health, the virulence, concentration, and amount of the poison, and the length of exposure to its influence. The inflammation may be limited to a very small area or diffused over the entire body. The individual lesions may be discrete or confluent. Some will have but an erythema with a few scattered vesicles on the extensor surfaces of the hands, especially at the interdigital folds; others will present an extensive outbreak of vesicles, pustules, and bullæ

over the extensor surfaces of the hands, arms, the face, breasts, and genitalia.

The period of incubation varies from a few hours, as a rule, to three or four days in rare instances. The disease lasts from one to six weeks, according to the severity of the attack, the condition of the patient, and the promptness with which treatment is instituted. The acute symptoms last from four to five days, the majority of cases ending in recovery in a fortnight.

There is a popular belief, held by some, that a first predisposes to subsequent attacks, because the poison is "still in the system." This is a view certainly based upon faulty premises, and recurrences under these circumstances are due either to a second exposure to the plant, or to clothing which had been worn at the time of the first infection. As Hyde[4] remarks, "It should be remembered, however, that articles of clothing may, for brief periods of time certainly, furnish sources of further trouble, being worn at the moment of contact with the plant, then laid aside, and, the occasion being forgotten, being subsequently employed. Thus a pair of undressed kid gloves have sufficed to re-awaken the disease." However, it is quite possible that the initial attack has rendered the skin peculiarly susceptible to an eczematous inflammation, which may recur with regularity at certain periods of the year and which may resemble in appearance the dermatitis of poison ivy.

Under this heading, the influence of season on the causation of the disease might be mentioned. There are periods of maximum and minimum intensity; the former corresponding to the flowering season, the latter to the autumn and winter months.

Symptoms.—After a visit to the park or cemetery, or a trip to the country, or during a stay at the summer resorts, the patient experiences an itching between the fingers or on the back of the hand. At this stage there may be no change in the skin or only an erythema with a few scattered papulo-vesicles. The itching and burning continue, and in a few hours there appear vesicles, pustules, bullæ; in severe cases, abscesses and gangrene subsequently develop. The vesicles are generally very numerous, situated on an inflamed and œdematous base, and vary in size from that of pin points to that of split peas. They may remain discrete, coalesce to form bullæ, or become pustules. This is accompanied by redness, heat, and swelling of the parts, with the subjective sensations of itching, burning, pain, pricking, and smarting.

The fate of the vesicles varies. With care they may remain intact and their contents dry up. More frequently, however, they rupture spontaneously or on account of violence (scratching, removal of dressings, etc.), and the contents desiccate into yellowish crusts.

The eruption spreads to a great extent by auto-infection, the poison being conveyed to other regions of the body by means of the hands, which are the parts usually first affected. Consequently the face is often the seat of eruption. In some cases the eyelids are œdematous even to complete closure, the lips thickened, the cheeks swollen, reddened, moist, and crusty. Aside from this secondary infection, the face is frequently the primary and only part affected. Attention to the necessities of nature causes the penis, and the breasts and genitalia in the female, to be favorite sites. The discomfort is for the most part local, and constitutional symptoms rarely develop. A moderate elevation of temperature (100°–101.5° F.), constipation, coated tongue, headache, and general malaise may form prominent features.

Diagnosis.—As a rule, instances of irritation caused by chemical or animal substances offer little difficulty, because the history is clear. Among the numerous substances which may give rise to cutaneous inflammation resembling ivy poison are croton oil, cantharides, turpentine, iodoform, mustard, chrysarobin, mercurial ointment, tartar emetic, arnica, aniline dyes, and excessive secretion of sweat.

In poisoning by Rhus toxicodendron the diagnosis is generally easy, the patient frequently coming with the statement: "Doctor, I have ivy poisoning"—or, as the dispensary patient often puts it, "ivory poison." Here, as in other forms of dermatitis, the history is an important factor. Possible exposure, followed by the occurrence of an eruption, as already described, between the fingers, on the extensor surfaces of the hand and forearms, and involvement of the face, breasts, and genitalia, form a typical picture. In the very early stages the involvement of the lateral surfaces of the digits aids in the diagnosis, as has been pointed out by Dr. J. C. White, of Boston.[5]

There are a few skin lesions with which dermatitis venenata may become confused.

Eczema is distinguished by the history, the localization of the lesions, the involvement of exposed parts and those most likely to be touched by the hands, the greater number of minute vesicles and bullæ, the greater amount of the swelling and œdema. The occurrence of the lesions on the inner surfaces of the fingers, the breasts, and genitalia is corroborative of ivy poisoning. In eczema the eruption is more polymorphous, whereas in dermatitis venenata there is more uniformity of vesicles or pustules. In the latter the lesions are sometimes "ridged" or in linear distribution, giving the impression that the patient brushed up against and along the plant.

Dermatitis ambustionis, or sunburn, presents a more diffuse redness, the degree depending upon the length of exposure. The eruption is more localized to the exposed parts, viz., the face, back of the neck, shoulders, arms, and hands. The breasts and genitalia are free. In this condition vesicles and bullæ are rare, unless the exposure is prolonged.

Scabies, which on account of its localization to the under digital folds, penis, and breasts, may be confounded with ivy poisoning in its pustular stage, is differentiated by the history, the presence of the cuniculus or burrow, and the discovery of the acarus scabiei under the microscope. The face, which is frequently involved in Rhus toxicodendron poisoning, is never affected in scabies, except perhaps in infants and children. Should doubt still exist, one may have recourse to the therapeutic effect of powdered sulphur. If it be scabies, the itching will be relieved; if we are dealing with dermatitis venenata, the condition will be aggravated or not influenced.

In erysipelas there are an initial chill, a rise of temperature (102°–104° F.), and more marked constitutional disturbance. The disease begins at one point and progresses by a well-defined, raised margin. There are greater tension and infiltration in the part, the skin is bluish-red and shiny, and only when the inflammation is pronounced do vesicles and blebs form over the patch. In erysipelas the blebs are usually larger and the fluid contents are more yellowish.

When the vesicles and bullæ have burst, the resulting yellowish crust may suggest impetigo; but the crusts are less friable and less "stuck on." The coexistence of pediculosis capitis and the absence of any great degree of inflammatory action are points to be remembered in differentiation.

Treatment.—There are perhaps few skin diseases in which a greater array of remedies has been recommended and tried than in the one under discussion. A great many of them have this point in their favor—they do no harm. Dermatitis venenata is a self-limited disease in most cases, it is true, and often subsides satisfactorily when the parts are protected from external irritation. Still, while we may not always be able to cut short or diminish the severity of the attack, we

can at least alleviate the sufferings, which at times are severe. One has but to observe the marked relief afforded by some of the remedies now to be enumerated in order to become a firm believer in therapeutic effort. It is not my intention to tabulate all or yet most of the remedies which have been vaunted, but simply to mention those which I have personally used or seen used at the Good Samaritan Dispensary, in the dermatological service of Dr. Charles Warrenne Allen.

Treatment is both prophylactic and palliative. None of the remedies is curative, in the sense of being a specific. Prophylaxis is all-important for the prevention of the attack, as well as for the spread of the disease to other parts of the body. Patients about to leave for a prolonged stay in the country, or even those taking single-day outings to the parks and neighboring summer resorts, should be instructed to avoid all "ivy-looking" shrubs, even though they be the innocent Virginia creeper. This fact is to be especially impressed upon the minds of those who have already suffered from one attack.

The cases observed by me gave a history of having contracted the disease at Cypress Hills and Washing-

Fig. 1.

ton cemeteries, Central, Bronx, and Bay Cliff parks, Riverside, Fort George, and Bayonne. Prophylaxis, then, would also require that the city authorities eradicate the vines from all places which prove sources of infection. A person with a susceptible skin should thoroughly wash his face and hands with warm water and soap or baking soda on returning from a walk in which contact with poison ivy might have occurred.

To preserve the vesicles and bullæ from rupture, to soothe the burning, itching, and smarting, to diminish pain and restlessness, are the chief aims of the remedies to be enumerated. I will first mention them in the order in which they have proven most efficient, and then enter into the special indications and conditions under which they are to be used. The list which has served me well is liquor Burrowi, picric acid, lotio nigra, salol, lotio plumbi et opii, liquor plumbi subacetatis dilutus, Allen's L. L. L. (formula given below), ichthyol, permanganate of potassium, bicarbonate of sodium, and lime water.

Liquor Burrowi (also known as liquor aluminii acetatis) is an astringent cooling lotion, which acts remarkably well in this condition, as it does in all contusions, sprains, and superficial burns, especially sunburn. The solution when properly prepared is clear, colorless, with a faint odor and a sweetish astringent taste. It is practically a solution of acetate of lead and alum, and may be prepared as follows:

Formula No. 1.

℞ Plumbi acetatis cryst. 100
Aquæ destill 300

Formula No. 2.

℞ Aluminis. 66
Sodii sulph. 12
Aquæ destill 500

Mix 1 and 2 cold, and let stand for two days at a temperature of 10° C. Filter, without washing the precipitate.

This liquor Burrowi is not kept in most drug stores, and, therefore, I have been accustomed to prescribe a "modified" Burrow. I generally write:

℞ Plumbi acetatis ..... ʒ i.
Aluminis ..... ʒ iij.

M. S. Add to one quart of water and use as a wash, after stirring well.

When this powder is placed in a quart of ordinary water, a very cold white solution is procured, which proves soothing and agreeable as soon as it is applied. The disadvantage of this modified Burrow, however, is the formation of a precipitate (the insoluble sulphate of lead), if it be allowed to stand for any length of time. To avoid this, it is advisable to tell the patients to filter the solution or stir it well before using. Some have cautioned against using liquor Burrowi over extensive surfaces, but I have never seen any ill effects from its use, either in the original or the modified form. Wherever and whenever I have had occasion to use this solution, it has always proven far superior to the time-honored lead-and-opium wash. It is not advisable to use the modified Burrow when extensive bullæ exist, for if the powder be not thoroughly dissolved the dressing is apt to cling to the part and tend to burst the blebs upon removal. The original or the filtered modified Burrow may be used in any form of the disease with perfect safety, and will, I am sure, give the greatest satisfaction. It is in those cases with marked œdema and swelling of the face that liquor Burrowi has been productive of the best results. The face is to be covered with a gauze mask and the solution continuously applied.

As far back as 1889, Calvelli[6] recommended a solution of picric acid (6 to 1,000) as a useful lotion in erysipelas, eczema, and lymphangitis. It was reserved, however, for the French school of dermatologists, and for Dr. Paul Thièry, of Paris, in particular, to bring this drug more prominently before the profession and to insist upon its great usefulness in superficial burns, erythemas, and other skin lesions. Among the latter, acute eczema and dermatitis venenata occupy conspicuous positions. As in burns, the main effect of this drug in ivy poisoning is the almost immediate disappearance of the pain and smarting. It is interesting to observe how instantly some patients are relieved by a single application. A one-per-cent. solution should be used; a stronger one is unnecessary. Esbach's reagent for the quantitative determination of albumin is the solution which I use. It is composed of picric acid, 10; citric acid, 20; water, 1,000—in other words, a one-per-cent. picric and two-per-cent. citric acid solution. Dr. E. M. Alger has lately suggested this method of application in the treatment of burns of the first degree.[7] In the use of this fluid, it may be spread over the parts by means of a large camel's-hair brush or a swab, or the regions may be enveloped in soft gauze bandages which have been dipped into the solution. Applications are to be made once in two days. Like so many other efficient remedies (methylene blue, permanganate of potassium, etc.), its greatest disadvantage lies in the fact that it stains everything with which it comes in contact. On account of its staining qualities, it is also rarely to be used on the face. As the acid is readily decomposed by heat, accidental stains may be removed from the undercloth-ing by boiling. In staining of the body, a subsequent washing in alcohol will often remove all traces. A previous smearing of the hands with vaseline or lard

frequently lessens the disadvantage of staining, if it does not entirely obviate it. Poisonous symptoms were never observed after its use, even though large surfaces were medicated. Authentic instances of poisoning have been reported,[8] and therefore extensive medication must be guarded against.

Lotio nigra or black wash is one of the oldest and most efficient remedies. Consisting as it does of calomel and lime water (ʒ i.–O i.), one can readily understand its action. Calomel is frequently given for the itching diseases—pruritus ani et scroti, lichen planus, etc.; lime water for burns and superficial erythemas. Therefore, in giving this solution we relieve the itching and cause the burning and smarting practically to disappear. The parts may be bathed with this three times daily for twenty minutes at a time, or a wet dressing may be lightly applied. This is one of the favorite remedies of Dr. J. C. White, who cautions against its use in extensive cases. In affection of the extremities this solution was used with excellent results. Should the officinal preparation (ʒ i.–O i.) prove too irritating, it may be diluted to suit the exigencies of the case.

A remedy for dermatitis venenata which I have learnt to respect during the past summer months is salol. I was taught to use it in three-per-cent. solution by Dr. Allen, and can now speak in the highest terms of its efficacy. While this drug did not afford so great and so prompt relief as the former remedies, still it seemed to act more favorably upon the course of the disease. In most cases in which it was applied it fulfilled all anticipations. A three-per-cent. solution is the best; four per cent. was found a little too strong, two per cent. not quite strong enough. As this drug is insoluble in water, it is necessary to add a sufficient quantity of alcohol in order to procure a proper solution.

Lotio plumbi et opii and liquor plumbi subacetatis dilutus often prove useful in relieving the unpleasant sensations and making the patient more comfortable.

Allen's L. L. L. ointment for burns is a very serviceable remedy in the disease before it has gone beyond the erythematous and papulo-vesicular stage, or in

Fig. 2.

the declining period of a severe attack, when the bullæ have broken and crusts have formed. It is a soft white ointment, composed of lanolin, 1; lard, 2; lime water, 3. It is indeed a soothing application, as one can convince himself by using it in this condition.

Ichthyol was used exclusively in the form of a ten-per-cent. collodion solution and only in cases which were seen at the very beginning. As in impetigo contagiosa, its greatest advantage was the formation of a

Fig. 3.

protective dressing, which sometimes prevented the dissemination of the virus to other parts of the body. This method of application has limited the disease to definite regions, and the eruption has healed kindly beneath the dressing.

Permanganate of potassium (one per cent.) was used principally on account of its deodorizing properties in pustular eruptions, and in cases in which the parts had not received proper attention and which presented an ulcerated, foul condition.

Bicarbonate of sodium (one teaspoonful to a glass of water) and lime water are inexpensive, easily obtainable, and very beneficial in affording prompt relief.

I am aware that there are a number of drugs which I have not mentioned: grindelia robusta, hyposulphite of sodium, chloride of ammonium, sweet spirits of nitre, creolin, bichloride, decoction of chestnut leaves, aristol, and hamamelis. These have all found their champions, but I have wished to confine myself to those which have proven of worth in my hands.

The constitutional symptoms are rarely of such a degree of severity as to require attention. Should indications arise, however, the restlessness and general malaise may be relieved by bromides, chloral, and sulphonal.

In conclusion, I desire to express my thanks to Dr. C. W. Allen for placing his clinical material at my disposal.

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OPERATIVE CURE OF INGUINAL HERNIA IN MEN.[1]

By E. D. FERGUSON, M.D.,

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When we reflect that on a reasonable estimate there are in this country over four million cases of hernia, the majority of which are in men and inguinal in location, the importance of the subject is manifest. A risk of incarceration or strangulation belongs to each case, in addition to varying degrees of discomfort due to the infirmity itself or to the wearing of retentive apparatus. To these risks and discomforts should be added the fact that each person having a hernia must be classed as unsound, and is prevented from entering some vocations by reason of that unsoundness. It is hardly necessary to advance arguments to show the importance of measures that produce a permanent relief of the malady whenever operative interference is indicated for any cause. Since the risk attending herniotomy has been so largely reduced, the indications justifying the operation have advanced until now many subjects of hernia are ready to submit to operation to avoid simply the disability due to the trouble, provided we can offer them a reasonable expectation of cure.

Those of us who are free from hernia can hardly estimate the sense of disability that comes to many who are thus afflicted. The depth of this sense of affliction is strikingly illustrated by the readiness of many to submit to the extremely painful and dangerous expedients resorted to by itinerant "rupture surgeons" one and two centuries ago. Castration, the actual and potential cautery, and many kindred devices were used for ages before the invention of efficient mechanical retentive devices. This shows in an unmistakable manner the great desire of these patients to be rid of hernia. With the invention of efficient trusses the occasion for operation in most cases was so reduced, and the mortality and uncertainty of favorable results in cases requiring operation were such, that operative interference came to be regarded by the profession as justifiable only when conditions existed directly threatening life. This aversion to operation still exists, for it is difficult to throw off the traditions connected with our professional training. This is particularly manifested in the prolonged and often forcible manipulations resorted to under the abused title of taxis. Recently I was requested to operate in a case in which "taxis" had been used from Saturday until Tuesday evening, and the results were decidedly touching. It is hardly necessary for me to describe the condition of the structures in the groin following such abuse. While I am not prepared at present to advise that all cases of hernia that cannot be reduced should submit to operation, I am sure in my own case I would feel that fifteen minutes of even gentle manipulation would be sufficient to justify herniotomy as the lesser evil.

It is not probable that we can at present properly urge the possessor of a hernia which is comfortably retained by a truss to submit to an operation, even in view of the very slight risk that is incurred; but when we consider the tendency of most hernias contracted in early adult life to become "direct" in their course and with enlarging rings to become less and less under the control of retentive apparatus, we can appreciate the probable widening of the field for operative interference. In those cases which have reached the stage where trusses are useless, or uncertain in action, it seems there should be no hesitation to advise operation if there be no concomitant circumstance to contraindicate it. In view of the experience of the past few years it is hardly in the nature of a prophecy to affirm that the proportion of patients who will properly submit to operation will materially increase. If such be the case it is manifest that we should carefully consider the elements entering into the operation, with a view of giving those who confide their interests to us the best opportunity for successful results.

The steps which have led to the present status of herniotomy do not mark a straight line, but show a devious route, and in fact often lead into closed lanes whence it has been necessary to countermarch, though often not until considerable confusion had arisen as to the true route to the highway.

This uncertainty as to course was often due to want of appreciation of the value of the different structures entering into the abdominal walls in preventing hernia where it has never existed and in curing it where it did exist. The amount of discussion on that point and the scholastic learning often shown are amazing, in view of the comparatively simple view that now seems justifiable. Not a tissue entering into the layers of the hernial tumor, which are laboriously studied and proudly repeated in our student days, but was considered at different periods as a more or less important factor in the prevention or cure of the disease.

Even at the present time some of our highest authorities place an importance on certain structures which seems hardly justifiable. I refer in particular to the muscular element of the abdominal walls. That muscle is an important factor in giving strength to the belly walls is manifest, but the readiness with which the fibres can be longitudinally separated illustrates how slight the protection would be against hernial protrusions if muscles alone were the boundaries. Whoever will consider carefully the different tissues concerned in retaining the abdominal contents can hardly fail to conclude that the main factor in protecting against hernia is that firm, strong, and dense aggregation of connective-tissue cells known as fascia or aponeurosis. The rarity of hernia at any point except where this layer is weakened or absent is evidence of its value as a preventive agent, aside from its known physical qualities. In my judgment a full appreciation and consideration of the value of strong fascia in protecting against hernia is the beginning of genuine success in the cure of these cases. And right here let me urge the importance of the fact that no scar tissue possesses the protective influence of normal fascia. Scars may be so deep and strong, and so blended with normal tissue, as to afford for a time a good and even efficient protection, but the usual tendency of scar tissue is to change gradually to the character of ordinary connective tissue, a condition manifestly not adapted to prevent hernial protrusions.

The history of the measures adopted for the cure of hernia is filled with evidences of the truth of this criticism of the scar. Let us go back only to the Heaton method of treatment, whereby it was sought to introduce into the tissues about the ring, and occasionally probably within the neck of the sac, some extract of oak bark, which would induce the deposit of "plastic lymph," and by the bulk of this exudate, its adhesive or contractile properties, so lessen or close the ring as to cure the hernia. That a temporarily favorable result was secured in many of the cases so treated is well known, but it is also a matter of history that with time the exudate thus produced was quite generally absorbed and the parts usually relapsed into the original condition.

All operations which leave the peritoneal pouch in the inguinal canal fail to secure the coaptation and intimate blending of tissues calculated to bear the strain of forcible pressure on the abdominal contents, though the method of Wood, who sought to approximate the pillars of the ring by a buried suture, applied

[1] Read at the annual meeting of the New York State Medical Association, October 18, 19, and 20, 1898.

often without any incision, was the best of all the "blind" methods of operating, and in fact gave in the hands of the originator a large percentage of cures.

The fact that this method was developed in pre-antiseptic days gave it a value it does not now possess. Many of the operations, even down to very recent years, have included the preservation of the sac, which was treated in various ways, *i.e.*, simply shoving it back into the abdominal cavity, infolding it, and making a "buffer" of it, as in McEwen's method, or quilting it backward and forward as proposed by Kocher and J. D. Bryant. While opening the sac was regarded as notably increasing the operative risk, such a course was justifiable; but now that proper care removes that risk the sac is to be looked upon as pathological, and as such is to be removed, except in instances in which it is so small that it can readily be replaced within the abdominal cavity, but even in such cases adhesions to viscera may thus be overlooked, so that it seems wise to open the sac in practically all cases submitted to operation.

The "open" method of McBurney was based on the idea of a deep and permanent scar which would effectually close the canal, but time has shown that even scar tissue constructed aseptically (which could not occur as a rule, for open wounds in the inguinal region will usually become infected) would finally be absorbed and the hernia would recur.

It seems now virtually settled that if we are to expect wounds to heal with a restoration of practically normal conditions, we must comply with four considerations: 1st. Parts of identical structure must be coaptated by an amount of surface to equal or exceed the normal thickness of the tissues. 2d. They must be maintained in apposition a sufficient time to allow the preliminary stages of repair to pass over into a thorough blending of the parts. 3d. The material used to secure coaptation must be so applied as to retain the parts without disturbing the nutrition, and not interfere with repair. 4th. Septic processes must be prevented, for they imperil and usually prevent a normal union, and in the case of hernia, if related to the deep structures, are usually followed by a recurrence of the descent of the bowel or omentum.

Many things enter into the application of these four principles, but we will briefly consider some of the more important. As to the first item, "that tissue must be united to identical tissue," it seems hardly necessary to adduce arguments; nor, again, is it needful to insist that the aponeurotic tissues of the belly are the strongest of the abdominal layers. There is one point, however, which is practical and should not be lost to sight, *i.e.*, that if we are to approximate identical tissues in a deep wound, we must make our incisions in extent and location so as to have thorough access by sight and touch. A too short incision is a common fault. A needlessly large cut is to be condemned, but let us not try to do our work in so small an incision that we must work in the dark.

In estimating the surgical value of the several parts that form the abdominal parietes in the inguinal region it is quite possible that needless division and subdivision have been made. The essential elements to consider are related to the fact that the fibrous or aponeurotic layers are so situated and divided that in the normal condition the structures constituting the cord enter the transversalis fascia above Poupart's ligament, receive an investment from that fascia, pass downward and inward along the upper border of Poupart's ligament with the fascia transversalis within and the aponeurosis of the external oblique without, and finally escape from this "tendinous" canal through a division of the fibres of the tendon of the external oblique at what is known as the external ring. It is proper to know of the conjoined tendon the intercolumnar fibres, etc., but the general facts concerning the course of this canal are the important elements, for it is evident that in a normal condition intra-abdominal pressure tends to close the canal rather than to dilate it, and it is only when a "thin wedge" is entered at the inner extremity of the canal that the conditions favoring hernia may be said to exist. Should the inner extremity of the inguinal canal approximate to a position opposite to the external ring, a condition favoring the occurrence of hernia manifestly exists, and it seems probable that this state of affairs occasionally occurs.

The steps to reconstruct this canal when it has been changed by hernial protrusion will vary according to circumstances, but in general terms may be said to include the placing of the tissues of the cord at the extreme upper and outer portion of the internal ring, *i.e.*, the outlet through the transversalis fascia. The external layers of tendinous structures having been opened so far as needed, and then after clearing from the opening all extraneous material by scraping so as to expose the fibres of the tendons, unite from below upward and outward the posterior and superior portion of Poupart's ligament with the conjoined tendon and transversalis fascia to a point just short of injurious constriction of the cord, a point manifestly only to be settled by the judgment of the operator, but usually defined by closing so as to include firmly the cord and a portion of the finger of the operator, which on removal will insure against undue constriction.

The tissues entering into the tendon of the external oblique should then be closed over the cord so as to reconstruct the canal, though in some old hernias the relations of these layers may not be clear, in which case we have to depend largely on the thoroughnesss with which we approximate the fascial borders of the tendons about the normal opening; and the leaving the cord at the upper and outer portion where the pressure will be at a minimum, though it is hardly wise to extend the incision in the fascia transversalis so as to displace the internal ring further outward and upward (as has been suggested by Potemski and others), or to place the cord in an opening in the bone, as has been recently proposed. In cases in which the testicle may properly be removed the closing becomes a very simple affair, and the cure should be definitive, for no place is left to begin the "wedging" process. In some cases I have found it justifiable to excise the testicle, and I must confess that I felt a certain satisfaction in doing it, in that the remaining steps of the operation were rendered so simple and efficient. Of course in all this it has been assumed that the sac has been closed at the general peritoneal level and excised.

The second element of success noted was that the tissues "must be maintained in apposition a sufficient time to allow the preliminary stages of repair to pass over into a thorough blending of the parts." It is scarcely possible to give definite metes and bounds to this period, though it is probable that it extends over several weeks, possibly two or three months. As the subject presents itself to me, the risk of recurrence varies at different periods according to the procedure adopted. If the fibrous tissues are well coaptated by good suture material, the risks of recurrence immediately or soon after the operation are practically *nil*. If the suture material is of a character soon to weaken or disappear, say in a week or two, then there comes a period of great risk, to be bridged only by rest and the good fortune that for some weeks no strain from cough, constipation, etc., has resulted in the trickle that will eventually make a flood.

If on the other hand the approximation has been maintained until a thorough blending has occurred, time will probably only serve to render the parts more and more like unto those which have never known the surgeon's knife.

Should the closure be by inflammatory exudate, the protection will be the greatest at a short period after the operation, but will soon begin to diminish, possibly to disappear.

On the other hand if permanent suture material be used, and tension is put on this with the idea of holding the parts together by non-living material, then one of two conditions is liable to arise: first, if the parts are held by the tension of the stitches, the stitches will cut into the tissues until they no longer hold the parts securely; or, second, by virtue of being a foreign body they furnish a convenient locality for the home of some wandering bacillus from the blood current, and an inflammatory process arises that changes the new union into ordinary scar tissues, with a tendency to absorption and weakening.

This selection of suture material is manifestly an element of first importance, in fact more important than many of the elements that go to make up so much of the recent "improvements" in curative herniotomy. We may vary somewhat the steps of the operation without very materially affecting the results, but without good suture material we must fail in attaining the highest practicable degree of success.

Experience has convinced most operators that suture material to be used in uniting tendinous structures should possess strength sufficient to bear all possible strain, a durability of at least two or three weeks in a state of fair tensile strength, with absorbability within a reasonable time, and the ability to render it aseptic. Few operators now leave metallic sutures buried in herniotomy wounds, so that practically we are reduced in our choice to silk, catgut, and animal tendon.

If silk were more readily absorbed it would be an ideal suture material, but the spontaneous reopening of wounds, months after closure, for the discharge of ligatures and sutures of silk is too common an occurrence to be ignored in making our selection. The difficulty of sterilizing catgut and the uncertainty of its durability under any method of preparation are grounds for hesitation in accepting it, in particular for closure of the aponeurotic tissues, though we may concede that recent improvements in its preparation have added to its safety and efficiency.

At present, however, the tendon from the tail of the kangaroo appears to afford the best suture material, particularly in herniotomy. It does not seem improbable that in the domain of synthetic chemistry lies the possibility of the manufacture of a material that will yet serve us when sheep and kangaroos may fail, and in the sterility, strength, and absorbability of which we may have perfect confidence.

In my own work I now use kangaroo tendon, but should I be unable to secure that I would resort to catgut carefully sterilized and "tanned" by chromic acid or formaldehyde, and only in emergency would I use silk, though it is readily and extemporaneously sterilizable, and hence occasionally to be used.

Our third condition, to wit, "the material used to secure coaptation must be so applied as to retain the parts without disturbing the nutrition and not interfere with repair," gives us possibly a certain choice of methods, and yet there is undoubtedly a good, a better, and a best way, though I will not assume that the best way is yet discovered. The interrupted suture, if applied so as to bring the entire line in apposition, must either be introduced at such short intervals as to be technically objectionable, or drawn so snug as to strangulate when placed farther apart. The running or overhand stitch does not coaptate well where strain is to come, though the rapidity of its application is a commendable feature.

The cobbler's stitch when placed well back, say, a full quarter of an inch from the edge of the incision, and drawn with just sufficient force to coaptate the tissues, will secure a broad surface of union, for the suture should not cross over the edge at either end, but begin sufficiently back in the uncut tissues to give an unconstricted strip along the edge of the incision. If this "band" should gape at the edge, a light running stitch will suffice to hold the edges in apposition, but the "cobbler" will bear the strain. Not to cross over the line at either end seems to me important, and to make this certain introduce the needle (with an eye near the point) without threading, thread, withdraw, reintroduce, unthread, and thread with the other end, and so on to the end.

Stitches of a third to a half inch in length or even longer will secure excellent adjustment of the parts; but above all draw so as only to apply well the surfaces to each other before tying the final and only knot. I always add an extra loop to the knot to insure against untying. The remaining portions of the wound above the aponeurosis may be brought together in any way, but a to-and-fro use of the suture material with a final subcutaneous strand seems to me the preferable method. If done carefully the parts will be left in a state favorable to thorough union.

Our fourth condition, that "septic processes must be prevented," seems hardly worthy of insistence at this stage of surgical development. I do not bring it forward to insist upon the details of sterilization in instruments, operators, assistants, and material, for that is all accepted. It is only in view of the fact that the skin of this region is especially liable to septic contamination, both before and after operation, that I call attention to the necessity for the thorough use of all reasonable measures to cleanse the surface and follicles of the skin before operation, and to urge the usefulness of sealing the wound, after it is closed, with some impervious and secure material.

The use of a thin layer of sterile cotton, saturated with iodoformized elastic collodion, over the entire extent of the incision, is my usual course. It is possible that other means or measures may serve, but this is easy of application and fairly efficient. In view of my experience, whereby I have known many wounds in the inguinal region to have been aseptic so far as operation was concerned, only to become contaminated by the patient in the care of his person, I feel a certain sense of comfort and security when the seal is placed and thoroughly dry. This seal can be readily placed over an interrupted suture if that form of closing of the skin is preferred, though it seems more satisfactory to apply it to wounds closed subcutaneously.

With a good seal on a wound in aseptic tissues, closed aseptically, we may confidently expect normal union. The principal quantity in our work now relates to those germs which hide in the follicles of the skin, and are liable to work to the surface some time after our work is done. These enemies are still existent, though fortunately our cleansing is becoming more destructive to them; but if a colony of them come to the surface just at the margin of the wound within, two or three days after the operation, they will generate mischief. If, however, the wound has been closed in layers and at the first evidence of trouble the seal is removed, the deeper structures will probably not be involved, and hence the final success of the operation will be only slightly imperilled.

In view of recent work in herniotomy, we may now assert that in uncomplicated cases the danger to life from the operation is very slight, less than one per cent., and we may almost say the patient recovers with less liability to hernia at that point than exists with one who has had no hernia.

Before closing the subject I wish to add a few words on the history of the operation. Though medicine knows no nationality, still there is among us a sense

of justice and "fair play" that creates in us a desire to see credit given where credit is due, and in addition there is just enough of right and use in a proper sense of patriotism to justify our claiming for our country that which is her due. It is not necessary for us to be constantly requiring the statement that "I am of Paul" or "I of Apollos," but during several years my attention has been so repeatedly attracted by reference to herniotomy under the name of some person credited with having devised the operation, when the facts failed to justify the appellation, that it seems a duty to enter a formal protest. Leaving out of the question at present the slight modifications that are connected with certain names, I wish to call attention to the fact that it is usual now to hear in our discussions and to read in our text-books and journals of "Bassini's operation for the cure of hernia." Now what are the facts? Bassini's operation embraces three points: 1st. The use of animal suture (though he applies it as a continuous suture) after excision of the sac. 2d. The closure of the internal ring from below upward. 3d. The closure of the remaining fibrous structures over the cord, so as to reconstruct the inguinal canal.

The relative importance of these items is in direct order of their statement, and priority may properly be claimed in use and publication for American surgery.

Bassini first made his method public in 1888, and a statement that he had been operating by that method since 1886 is hardly admissible in a claim for priority in view of the following facts:

In October, 1871, Dr. H. O. Marcy, of Boston, read a paper on "A New Use of Carbolized Catgut Ligatures," which was printed in the *Boston Medical and Surgical Journal* for November 16, 1871. Lister had recently given to the world his experiments on the ligation of arteries with catgut, the ligature being buried and allowed to remain for absorption. This paper by Dr. Marcy included the advocacy and description of the use of catgut to approximate the walls of the ring, so as to secure by buried sutures the healing and lessening of the hernial opening.

This was supplemented by a paper before the American Medical Association at its meeting in 1878, and printed in its transactions, in which he advocated the use of animal sutures to close or diminish the hernial openings, giving his reasons for such use from a practical and experimental standpoint.

So far as the evidence is available, these publications are by several years the first that bear directly on the subject, having as an object the teaching of the use of buried animal sutures in closing or reducing the hernial opening.

I think it was in the same year that Tilanus and Lucas Championnière read papers at the Amsterdam meeting of the International Medical Congress, in which they advocated the use of animal sutures, and Championnière gradually developed his method of mattress suturing of the tissues about the ring and canal, a method still used by him in several hundred cases with excellent results.

About the same time Czerney gave to the world his views in favor of excision of the sac and the approximation of the pillars of the external ring with animal suture.

Again in 1881 at the meeting of the International Medical Congress in London, Dr. Marcy presented the subject[1] and advocated the excision of the sac and to "refresh the pillars of the ring or walls of the opening and to close by sutures" of carbolized catgut, though he also used tendon suture from the moose and caribou.

At the meeting of the American Medical Association in 1887, and again in 1889, he discussed the subject, and in the two papers brought out all the points now regarded as important, to wit, the excision of the sac, the use of buried animal sutures, the closure in layers, the restoration of the obliquity of the canal, and the sealing of the wound.

It is possible that some references which would be germane have escaped me, I have omitted some as unnecessary, and I have entirely neglected to refer to the many expedients which are not directly related to the three points considered as essential, or have been dropped as inexpedient or useless.

As the record stands it is not just to American surgery to designate modern herniotomy by the name of a foreign operator. The wisdom of applying the name of any man to a procedure is open to some objection, but convenience often justifies it; and should it be applicable in this instance, we should not speak of the Bassini operation for inguinal hernia, but of the Marcy operation, for Bassini in no single item of importance has preceded other operators, while Marcy was manifestly first in advocating and using buried animal sutures, in the use of cobbler's stitch, in the subcutaneous suture, and in sealing the wound by an impermeable and adherent dressing.

Many operators are now using these expedients in total and unjustifiable ignorance of their origin and under a false appellation.

[1] Transactions, London International Medical Congress, vol. ii., p. 446.

REMARKS ON ANTITOXIN, DIPHTHERIA, THE PRACTITIONER, AND HISTORY.

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When diphtheria antitoxin was supposed to be obtainable in that degree of perfection which seemed to justify laboratory workers or scientists, in their own estimation, in proclaiming it a scientific product of surprisingly great curative value, it was forced rather than argued into the hands of practitioners. The force exerted was not that of legislative action, but that of public opinion. This opinion was created and developed by the influential voices and pens of many prominent scientists and clinicians, and not the least by the lay or political press. The amount and extent of hopeful expectancy thus aroused generally among practitioners and the laity made it extremely impolitic for most practitioners to entertain, and much more so to practise, views and convictions of their own not in accord with the teachings of Behring and Roux and others. The jubilations of some practitioners amounted to—in some instances do so still—claims of infallibility for the remedy and their own individual wisdom. Those who did not and do not think and do as they think and do, they accused and accuse of dulness, even of crime. These enthusiasts always meant and mean well. Infallible people always mean well.

Concerning the use of antitoxin as a remedy in individual cases of diphtheria, the practitioner has rights as well as duties to urge him on. It is not a question of right only or of duty alone, but of both duty and right. He deals not only with cases of disease; he deals with his patient and the patient's friends. And his first-all-around duty is to do all the good he can, and, if possible, no harm of any kind. In doing so it is not necessary for him to be either a tyrant who must have unquestioning submission, or a martyr who fails to have his will recognized and applauded. It is also a duty of his to give observations and facts, opinions and fancies, considerate attention and study, even though such do not fall in graciously with his own observations and with facts

as he sees them, etc. But it is his right to trust his own senses and his own reasoning powers. In attending to his duties, and in generously maintaining his rights, he should be actuated by a modesty and objectivity that will leave him too proud to be vain and wise above his stature.

After observation and experimentation have done all they can to give us facts we are obliged to build up ideas with our facts. Our facts are useless unless something is made of them. But facts are odd things and hard to understand sometimes. To some people a fact is valid because some influential person claims it to be fact. Others would call "a fact" anything that can gain the assent of a majority of competent judges. Thus, to gain a fact a minority of competent judges is pushed aside, and satisfaction is got. Facts of this kind have been abundantly accumulated on the doings of antitoxin in diphtheria. History teaches over and over again that neither a great name, nor a majority of great names, necessarily determines the reality and validity of fact definitely, or once for all. Great names demand attention, and a unanimity of many great names demands from us a greater amount of attention and consideration. But great names should not command submission and self-abnegation. Neither do minorities monopolize all wisdom. Minorities often go wrong no matter how select their make-up may be. The wrong interpretation of facts, so-called, on the one hand is due to incomplete or partial perceptions, and, on the other, is made when much preconception or theory has been projected into the fact which is really not justified in being there. Diphtheria is a fact, and so is antitoxin. But both these single words comprehend not a single fact, but in many respects a rather intricate mass of fact and theory which is struggling into a final disentanglement and definition. The simple eloquence of some writers and debaters who glibly use these words—diphtheria and antitoxin—is as charming as it is illusory. They use substantialized abstractions that have no real properties. They refuse to argue. They are sure of their fact, and they feel that they need not analyze it. Men of genius and extraordinary talent have erred in this respect. The unknown elements that are a part of all facts—like the ashes of chemical analyses—are lightly thought of. It took nearly a half-century of hard laboratory work and fervid discussion finally to demonstrate that Liebig was not altogether wrong and Pasteur not altogether right concerning the facts of bacteria and fermentation.

Although many able practitioners and scientists claim that antitoxin for diphtheria has ceased to be a question, and that all argument concerning the fact of its utility is futile labor, other equally able observers and equally well-equipped practitioners claim that it is a fact that the remedy is useless and at times harmful.

Whatever the inclinations and tastes of practitioners may be concerning the contentions of opposing authorities, they have three sources open to themselves from which to gather facts and opinions for justifying their own ways of thinking and practice: 1, history; 2, laboratory reports; 3, clinical experience.

I do not purpose to deal in this paper with either the laboratory aspect or particularly with the clinical character, quantities, and facts of diphtheria-antitoxin questions. All that is intended now is to direct attention to what may be called the historical or traditional conception of diphtheria, and in a way to compare it with present-day notions. We may thus get rid of some misconceptions and attain to some certainty of meaning, of definition, and, to a certain degree at least, be enabled thereby to judge—for we all must finally judge in these matters—to what extent, if at all, we may or may not be justified in accepting what some authorities claim for antitoxin in the treatment of diphtheria. All definitions are something more than a mere statement or epitome of leading facts. They also imply theories concerning the facts. The bare facts are unchanging. The theories, the explanations, are tentative only. Looking at the history of diphtheria reveals to us that the interpretation of the phenomena of this disease resolves itself into a dissolving conception, which for a time again solidifies into a fixed and standard conception. The facts, the phenomena of diphtheria we are always willing enough to believe to be true; and the will to believe is often stronger than the energizing theory.

What is diphtheria supposed just now to be? It is defined as being an acute infectious disease. It was always considered to be that. But our modern teachers—many if not all—supplement their definition and statement of leading facts with a theory. They say that diphtheria is caused and developed by the growth of a specific bacillary organism. This specific bacillary organism is a revolutionist. It has changed and modified the concept of this disease. The bacillus claims almost undivided attention. We knew in days before the bacillus was pilloried that diphtheria was chiefly and generally limited to the upper respiratory tract. We also knew that abraded surfaces of the skin sometimes became affected with membranous deposits. In the present day we are taught that the disease first appears as a local disorder. This local disease is characterized by inflammation and a false membranous deposit. This was not the generally accepted doctrine in prebacillary days. The disease was supposed to be primarily constitutional. Whether it be considered primarily constitutional or primarily local, much theory goes mixed with the facts. There is such a condition as a predisposition—the constitutional or organic condition that makes the specific cause a possible rioter—a successful cause and developer of disease. To-day our teachers say that the system is secondarily affected—a general disease is produced which is a consequence of the local one. Older and antibacillary theories made the facts consort the other way. First came blood changes, and then local manifestations developed. And yet even before bacilli became important facts in our reasonings, some observers had leaned toward an impression that diphtheria is first a local disease and then a constitutional trouble. In days gone by the eye made the diagnosis. An inflamed throat with peculiar patches on the pharynx, palate, or tonsils, or on all three together, in connection with constitutional symptoms more or less marked, justified a diagnosis of diphtheria. Bretonneau had stated that when there was no pseudo-membrane there was no diphtheria. From this type—from mild cases to severe ones—the variations have been, since the days of Bretonneau, very considerable. The chief factors giving rise to the variations from a mild type are enveloped in such notions as that epidemic influences hover in the air or are secreted in the earth. Individual predisposition is another factor. In times gone by much stress has been laid on these factors in giving definition and clearness to the diagnosis of diphtheria. Older physicians also noticed that diphtheria was sometimes complicated by gangrenous and septic processes. They had observed too that the constitutional symptoms were sometimes grave, out of all proportion to the local signs; and the obverse was sometimes the case. But in whatever manner the local and constitutional conditions consorted, as to character and degree, epidemically or individually expressed, the diagnosis was determined by the pseudo-membranous deposit. No deposit, no diphtheria. All the records of this disease, from Bretonneau to Behring and Roux, are based on this conception of diphtheria—a disease which varies from a

benignity so mild as to escape attention to a malignancy which is as disgusting as it is disheartening. The conception was not formed in the course of a single epidemic, or in the course of a single endemic cycle; it is the result of centuries of observation and correction, and is the final entity of thought and being resulting from dissolving contradictions of all kinds which make up the natural phenomena of a disease and the phenomenon of the concept of that disease as it establishes itself in the minds of successive generations of men.

The modern definition of diphtheria differs very much from the historical definition as it existed up to five or ten years ago. Laboratory scientists, who more or less rigidly fix conditions to fit what they hope to prove, get a disease which they call diphtheria. Accepting all their preconceptions, and the conditions they surround them with, the result of their labors and cogitations must necessarily be accepted as being logical. But logic is only method; logic is not nature. Nature, too, is logical, but on a broader basis than can be found in our laboratories at the present time. Our scientists, and those who aspire to compel us to concur in their notions of exceptional exactitude, tell us that we have diphtheria when we have a sore throat in which the Klebs-Loeffler bacillus is found. The bacillus and the sore throat settle the diagnosis. The presence of a pseudo-membrane is of secondary importance only in so far as diagnosis making is concerned. The membrane may or may not be diphtheritic. This conception of diphtheria is clinically inadequate. It does very well for the laboratory. In the laboratory excellent results are obtained by treatment with antitoxin. We clinicians cannot but admit that these laboratory observations, experiments, and successes have added a factor to our conception of what diphtheria is. The factor is the Klebs-Loeffler bacillus. This minute factor also carries a good deal of theory with it, which is too often accepted as fact. Henle used to say that a theory is to be valued not so much by what it can prove, as by how much or how little it assumes. The scientist theory proves everything and demonstrates only a modicum, and leaves a good deal unaccounted for which it lets shift for itself. The scientist overlooks the importance of the historical conception of diphtheria—and he overlooks the importance of other bacilli at work in the local uproar. Neither oversight acts kindly toward the theories of specific antitoxin therapeutics, either in the specific and limited methods of logic characteristic of laboratory workers, or in a practical demonstrative way.

From a study of definitions or conceptions—the historical or traditional, and the scientific or laboratory conceptions—we may conclude, and properly so, that they are, taking everything into consideration, unlike, although similar in a few respects; and it must follow as surely as the day the night that what will cure in the one case cannot cure in the other, except perhaps in such a limited way as the few points of similarity may justify or give hope for. Furthermore, when the results of treatment of historical diphtheria are taken as a standard for showing off the superior virtues of antitoxin in the treatment of modern or laboratory diphtheria fallacies are committed. How great the contrast becomes when we change our methods of diagnosis because we change our conceptions of a historical disease is glaringly illustrated by Dr. McCallom, of the health department of Boston. His figures are no doubt honest and scientific. He tells us that from 1891 to 1894—a period of four years—ten hundred and sixty-two cases of diphtheria were reported. These cases were diagnosticated by the eye and by other traditional methods. But from the 1st of September, 1895, to the 1st of October, 1896, nineteen hundred and seventy-two cases of diphtheria were reported. He explains this great increase thus: "The number of cases of diphtheria reported was largely increased on account of the larger number discovered among the pupils of the public schools, by the medical inspectors of the schools, and the bacteriological tests in the otherwise unrecognized cases." Thus laboratory methods discover the disease which eluded the eye. This may be bacillary diphtheria, but it is not diphtheria in the historical sense. It is not the diphtheria in the old clinical sense. In contrasting these nineteen hundred and seventy-two cases of bacillary diphtheria, collected within a period of thirteen months, with the ten hundred and sixty-two of clinical diphtheria observed in four years unlike things are contrasted. The difference is almost as great as between eight and one. He gives the rate of mortality of diphtheria diagnosed by old methods as being forty-five per cent. The rate of mortality of bacillary diphtheria—that is, the diphtheria diagnosed in the laboratory on scientific principles—is thirteen per cent. What do these percentages prove? Dr. McCallom naively claims in his report that they prove the beneficent curative qualities of antitoxin. They do nothing of the kind. Not only are unlike things contrasted, but, if his contrast is allowed to pass as a comparison, he conveniently fails to credit the four years' collection of diphtheria with the proportion of cases that were not recognized because school inspectors and bacteriological tests were not on the track of the bacillus. According to Dr. McCallom's figures, clinical diphtheria falls in point of frequency about eight points from a standard of one which is the Boston, or scientific diphtheria. All other things concerned in the comparison fall in a like manner proportionately. Thus, if all things are taken on a basis of equality, historical or clinical diphtheria is, according to Dr. McCallom's honest figures, seven times less frequent than that of the health department of Boston, or scientific diphtheria. Science so-called has done this much—it has increased the figures of an old disease sevenfold. But what science means, and what clinical observation has meant, are two different things. The scientific inflation deals with new definitions which do not cover the older ones, and, comparing these exaggerated figures—exaggerated in comparison with those obtained by traditional methods—they can only be said to have a nominal, but not a real relevancy. If the scientific methods (Dr. McCallom's) of obtaining a superior death-rate percentage were equal to the scientific methods of increasing the numerical morbidity, then Dr. McCallom's death rate ought to be about five or six per cent. and not thirteen per cent. And then *the* argument in favor of antitoxin would not be remarkable, or even worth serious attention. Dr. McCallom has confounded elementary conceptions, unlike in kind, and has arrived at results that are unlikely.

In a subsequent essay I shall discuss the practical arguments and supposed facts which some clinicians and scientists claim do prove that antitoxin is the remedy for diphtheria. Aside from all speculative and theoretical considerations, and dissimilarities of definition, these practical arguments and proofs resolve themselves into an enumeration of authorities and cases.

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Hegar's Method of Diagnosticating Fibroma.—The finger is passed into the rectum and pressed against the tumor; at the same time the uterus is drawn downward by a volsellum. If the tumor be ovarian, it will not move; if uterine, there will be great resistance to drawing down the cervix, which will clearly be continuous with the morbid growth.

Progress of Medical Science.

Pathogenesis of Delirium Tremens.—Dr. P. Hertz concludes as follows: A kidney affection is a constant accompaniment of uncomplicated delirium tremens, and this simultaneous occurrence seems to show that the kidney affection is primary and the delirium secondary. The anatomical basis of the kidney disease is an acute nephritis, which develops in all probability into a chronic nephritis. The course of this kidney affection corresponds so exactly to that of the delirium that we can with certainty assume a pathological connection between these two phenomena. Inasmuch as delirium and uræmia present so much in common, we may look upon the former as an acute auto-intoxication psychosis due to renal insufficiency, which is dependent upon the acute nephritis. A special form of the delirium is seen in chronic alcoholism. It is very likely that the delirium of pneumonia is not due to the pneumotoxin, but to the existing kidney affection. —*Deutsche Medizinal-Zeitung*, September 29th.

Addison's Disease in Children.—Dezirot (*Klinisch-therapeutische Wochenschrift*, September 18th) has observed three cases of Addison's disease in children, at Variot's clinic during the past year, and has collected from literature forty-eight instances, all told, which occurred in children from seven days to fourteen and one-half years of age. This disease rarely occurs in childhood; the etiology in almost all of the cases was tuberculosis of the suprarenals. The onset was frequently overlooked and the first symptoms appeared slowly. At first general weakness and fatigue without apparent cause showed themselves. The children had no desire for play, but were rather weak and apathetic. In other cases gastro-intestinal symptoms —nausea, vomiting, diarrhœa, and constipation—ushered in the disease. The latter seems to be the general mode of onset in children. Discoloration of the skin was rarely observed at the beginning. Inasmuch as many of the symptoms of Addison's disease occur in the course of a tuberculosis, a localized tuberculosis was not infrequently found in the lungs, kidneys, glands, joints, and bones. In other cases the disease assumed a galloping type, similar to a poisoning, so that in a few months the characteristic symptom complex of asthenia, gastro-intestinal symptoms, pain, and skin coloration was fully developed. The asthenia proved the most characteristic sign of the disease; it was practically never absent. The intellect was clear, but the patients could hardly answer questions on account of the fear of fatigue. The gastro-intestinal symptoms were important. At first there was loss of appetite; the children showed a special desire for certain food stuffs, especially meat; nausea and vomiting of a uræmic nature occasionally occurred. At times there was constipation, and again diarrhœa. The pains were less constant. They were for the most part spontaneous, and were situated in the back, abdomen, hypochondriac or epigastric regions. The hyperæsthesia of the abdomen may be so great as to give the impression of a peritonitis. Some patients complained of severe headache and pains in the bones. The pigmentation of the skin was frequently overlooked, the parents thinking that the child was sunburnt or icteric. The discoloration was more or less uniform over the entire body; less frequently was it partial. On the exposed parts—face, neck, hands—and in those regions where pigmentation is normally greater—navel, genitals, axillæ—the eruption was darker. The mucous membranes always presented disseminated brown spots, which are for the most part so characteristic that they form a pathognomonic symptom, at least in children. Besides the cardinal signs of this disease, other symptoms, such as rise of temperature, rapid pulse, convulsions, and epileptiform attacks, were observed. The course of the disease showed remissions and exacerbations. In some cases death occurred suddenly. Death usually occurred within a year, as a result either of cachexia or of intercurrent disease.

A New Tricophyton.—Drs. Matruchot and Dassonville, working at the Sorbonne under direction of Gaston Bonnier, have isolated, cultivated, and re-inoculated both in the guinea-pig and in man with positive results a fungus similar to but not identical with that described by Sabouraud and Bodin. The observations were made to determine the nature of an epidemic attended with a herpetic eruption affecting some forty horses of a cavalry regiment.—*La Tribune Médicale*, September 28th.

Splenomegalia.—The question of enlargement of the spleen in association with hepatic cirrhosis has been made the object of some new studies by Banti (*Policlinico*, No. 5, 1898). In commenting upon three cases, he designates three stages: that of anæmia, an intermediary period, and a period of ascites. It seems probable to the writer that the spleen gives off certain substances or products, which, in passing through the liver, produce in this organ connective-tissue hyperplasia. If the spleen be removed the anæmia disappears and the cirrhosis ceases. In an instance observed in which pronounced febrile attacks were preceded by violent rigors, a marked diminution in volume of the spleen was made out during the attack, and it was thought that the organ had emptied its contents into the splenic vein and that the symptoms were due to the rapid penetration of toxic material into the circulation. In one case splenectomy arrested the cirrhosis in its incipiency. This radical measure is warranted and advised by Banti, since medical treatment is of no avail.

Arterial Sclerosis. — Local scleroses are but the beginning of general sclerosis, always to be found by those who look for it. The chief characteristics of syphilitic sclerosis are: (1) It is nodular and not diffuse. (2) It has a tendency to invade portions only of a vessel wall. (3) Its onset is usually chronic. (4) The points of attack in order of frequency are: (*a*) Cerebral arteries; (*b*) aorta, especially ascending portion of arch; (*c*) arteries of heart; (*d*) arteries of pericardium. (5) It has a tendency to obliterate vessels. (6) It has a tendency to form aneurisms. (7) In analogy with tuberculosis it has a tendency to obliterate arteries, to form aneurisms, and to become localized.—Dr. C. A. Penrose, *Johns Hopkins Hospital Bulletin*, June.

Amaurotic Family Idiocy. — The characteristic symptoms of this condition, according to Sachs, are: (1) A psychical defect, which is observed in the early months of life. (2) Weakness of all the extremities, even to complete paralysis, with or without spasm. (3) Normal, increased, or diminished reflexes. (4) Diminution of vision, which eventually leads to total blindness. The disease usually ends fatally, with symptoms of marasmus, within two years. The first symptoms appear between the third and eighth month of life. Lack of interest for its surroundings and inability to hold up its head direct the attention of parents and physicians to these little patients. Toward the end of the first year the children are usually complete idiots, and present a more or less intense diplegia. The electrical reaction of muscles and nerves is practically always normal. The disease occurs in families; whether or not it is hereditary cannot as yet be definitely stated.—*Deutsche medizinische Wochenschrift*, 1898, No. 3.

MEDICAL RECORD:

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VEGETARIANISM.

THE old controversy between those who term themselves vegetarians and those who pin their faith to meat as a necessary article of food has once again broken out, and with renewed energy, in England. The pending discussion was initiated by an editorial in *The Times*, apropos of a vegetarian congress recently held in London. The writer of the article in question animadverted in a decidedly vehement and sarcastic strain against what he designated the faddism of vegetarians, thereby bringing down upon his devoted head the ire of all that well-meaning but misguided class. Other English journals have taken part in the wordy fray, and in language more or less emphatic have scored the upholders of a vegetable diet. *The Times* presents the case for the antivegetarians in the following well-considered words: "The truth is, if there be any question which has been thoroughly threshed out by physiologists and physicians, it is that of diet. By scientifically conducted experiments, sometimes upon individuals under laboratory conditions, sometimes upon masses of men in barracks or prisons, and sometimes upon nations by observation of their habits and of development, whether physical or mental, which these habits have produced, we possess complete information upon all questions relating to food and the influence which it exerts. We know that the maintenance of a high standard of bodily and mental capacity requires the consumption of proteids, hydrocarbons, and salt in definite quantities and proportions, and that so far as the effects are concerned it is a matter of indifference in what proportions these are furnished by the animal or by the vegetable kingdom. The vegetarians have a somewhat unpleasant habit of seizing upon any opinions in the slightest degree favoring their views, expressed by high authorities, and immediately claiming these men as out-and-out supporters of their creed. The remarks made may have simply been to the effect that the majority of people consume more meat than is good for them, but it matters not; the author is forthwith enrolled a member of the army of vegetarians and his name is cast in the teeth of disbelievers, as a convincing proof of the soundness of the arguments. In this manner Sir Henry Thompson has long been cited as a thoroughgoing adherent of the flesh-abhorring band, and his name has been used as a battle cry to strengthen the faith of waverers and to rally fresh recruits to the ranks. So much has this been the case that Sir Henry Thompson has in self-defence been compelled to state clearly his true opinions and thus set himself right with the public at large. This he has lately done in the *Nineteenth Century* in no uncertain tones; and his words are so excellent an exposition of the whole subject that we quote a portion of them."

Referring to the influence of climate upon the question of diet, Sir Henry says: "For climate is an important factor in relation to food. Man, wherever he exists, has to maintain his body at a constant temperature of at least 98° F.; and it is obvious that an enormous difference must exist between the needs of the individual who lives near the equator, with all surrounding objects at a constant temperature of 85° to 95° F., and those of one who inhabits northern latitudes, where it is continuously below the freezing-point, 32° F., often to the extent of many degrees. In each case the body must be maintained at 98° F., or a little more, or man will cease to exist. In the large and populous zone we inhabit, which forms so extensive a portion of Europe, Asia, South Africa, America, and Australia, and is known as the 'temperate zone,' there are very few persons, indeed, who can sustain their health and a fair amount of strength for many years on a strictly vegetable diet. . . . Hence it is only possible to regard man—considered as an inhabitant of the world at large and manifesting as he does a strong and increasing impulse to explore and colonize in any part of the globe—as now naturally omnivorous; in other words, possessed of a constitution which requires for his well being a mixed diet of animal and vegetable foods in relative proportions, varying according to temperature and activity of life." There is no doubt that more flesh is eaten by many persons than is necessary, especially by those persons who are in easy circumstances and lead a sedentary life. These persons should live on a lighter animal food than beef or mutton, and use plenty of vegetables. On the other hand, those who take much exercise or perform hard manual labor, exposed to all weathers, are able to digest and thrive on meat in larger quantities. The whole matter resolves itself into a question of environment and manner of life, not forgetting the constitution of the individual. If a man finds that he is in better health on a vegetable diet, he should by all means use that description of food, but it is absurd to contend that with all persons, under all conditions of life and in all climates, such a procedure is most suitable.

A New Hospital in Havana.—The Nuestra Señora de los Angeles was opened on October 16th, on the site of the old La Integridad Hospital, where the unfortunates from the fosos find a refuge. The bishop of Havana presided at the opening exercises. The civil governor and his wife were present at the ceremony, as were the mayor, the staff of the hospital, many prominent families, ten sisters of charity, the three house surgeons, and the visiting physicians.

THE STUDY AND TREATMENT OF CANCER.

The crusade now being carried on in all parts of the world against tuberculosis is deserving of all praise, and it appears that, with our knowledge of the disease and with our efficient means of combating it, it is not too much to hope that the day is not far distant when its ravages will be effectually checked. But although consumption is a fearful scourge, the fact that cancer is an even worse one has been pointed out on many occasions recently by several acute observers. It therefore behooves scientific investigators to endeavor to probe the mysteries which at present envelop this dread disease. To the man who proves conclusively the origin of cancer, no honor will be too great. The *British Medical Journal* of October 1st has an article treating of the subject and discussing the point as to whether it is advisable to operate for the relief of cancer. Dr. Severin Robinski has lately written an important work, in which he states as his opinion that in cases of cancer operative measures are not indicated. The *British Medical Journal*, referring to this statement and after drawing attention to the two theories—the embryonic and parasitic—now held as to the cause of cancer, says:

"If we assume for the sake of argument that cancer is, in at least some if not in all cases, parasitic in origin, then there must unquestionably be a time when the growth is localized at the point of inoculation; and, if so localized, there can be no doubt that early operative and medical removal is a means of cure—so far at least as that inoculation is concerned. Robinski's statement that operation is not justified in cancer must therefore be decidedly and strenuously negatived. It lacks the smallest shred of evidence or observation, clinical or experimental, to support it. The local deposit of cancer is diffused, as we know, mainly through the lymphatic system. If, then, it is at first local and becomes constitutional by diffusion through the lymphatic system, it is further necessary that the complex system of the lymphatics should be studied with greater accuracy than before. . . . The question, then, as to the propriety of the use of the knife in malignant disease can be considered permanently settled. Our efforts must now be directed to a close study of the earliest manifestations of malignant growths in their various sites, and to a laborious and exhaustive investigation of the intricate lymphatic channels. With knowledge thus perfected, we can until the day of inoculation arrives feel justified—nay, rather compelled, to advocate the most prompt and intelligent active surgical interference in all cases of accessible malignant growth."

We cordially agree with the writer of the above remarks that the prompt use of surgical measures is decidedly the proper course to be pursued in cancer, and also that the sooner the knife is brought into play the better; but we would also point out that there are many difficulties in the way of an early diagnosis of malignant disease. The chief obstacle is the sufferer and relations. No one likes to believe—indeed, in too many instances will not believe, until it has made great headway—that the disease with which he is afflicted is cancer. If the fact could be impressed upon the minds of individuals that the safest and wisest path to follow is in any case in which cancer is suspected immediately to seek the advice of a competent physician, there can be no doubt that the death rate from this cause would be immensely decreased. It would be well, too, that the ordinary medical practitioner should make himself better acquainted with the manifestations of malignant disease than he usually is, or, if he doubts his own knowledge, that he should advise his patient wherever possible to obtain the opinion of a specialist.

THE TREATMENT OF THE INSANE IN THE LAST CENTURY; AND THE WORK OF PHILIPPE PINEL.

It is difficult to realize now the position of an inmate of an asylum for the insane in the old days. Even under our improved and enlightened conditions, the lot of those unhappy beings from whom the light of reason has fled is—in some civilized countries and in parts of the United States—not altogether what it should be. Yet, compared with the asylums of a hundred years ago, those of the present time are palaces of delight. To two men is largely due the great and enduring honor of bringing about this change. Dr. Philippe Pinel, the Frenchman, was the pioneer in this good work, closely followed by Tukes, the English Quaker. In this country, where the rational treatment of the insane has reached its highest development, a woman, Miss Dorothea Dix, was mainly responsible for introducing the beneficial reforms. To many the name of Pinel is unknown, while it is safe to say that few are acquainted with his life and work. From this oblivion Mr. Francis Tiffany has rescued the great French philanthropist, and in a small work recently published has given an illuminative sketch of his humanizing labors. It appears that Pinel was born in 1745, and that his father was a poor country doctor. In appearance he was small and insignificant, and of a painfully shy disposition. After failing as a country practitioner he went to Paris, and after many hardships and vicissitudes succeeded at last in making powerful friends and in obtaining the appointment of physician to the Bicêtre, the largest madhouse in Paris, and which is thus described by the great scientist Pariset, in his "Éloge de Pinel":

"Vice, crime, misfortune, infirmity, diseases the most varied and the most revolting—all were heaped together and treated alike. Men crouched there, covered with filth, in cells of stone—narrow, cold, dripping, without air or light, and furnished only with a litter of straw, rarely renewed and soon infected: hideous lairs, in which one would have hesitated to shut up the vilest animal. The insane thrown into these sewers were at the mercy of their keepers; and their keepers were malefactors from the prisons. The wretched patients were loaded with chains and tied with ropes like convicts. Handed over thus to the cruelty of their guardians, they were made the butt of insulting raillery or of blind and wanton brutality."

One of the first steps taken by Pinel, after for some

time he had endeavored to gain the affection and confidence of his patients by kindness, was to procure an order from the government to allow their fetters to be struck off. This request was after much hesitation conceded by the "powers that be," and in one day Pinel knocked off the chains from eighty insane of both sexes. To the surprise of all, this action was followed by no disastrous results, and soon the fact was recognized on all sides that Pinel had to a great extent solved the difficult problem of how madness should be treated, and that kindness and not brutality was the most effective method. It is satisfactory to be able to state that the great French physician—unlike so many benefactors of their kind—died full of years and honors.

News of the Week.

The Yellow Fever in the South has practically come to an end, the breath of frost which invaded the Mississippi Valley last week having destroyed the infectious principle. The Marine Hospital officials are not relaxing their precautions, however, and it has been ordered that the regulations governing the active Marine Hospital quarantine stations be amended to continue all such stations until November 15th. The necessity of this action is obvious, as the transports are still carrying troops between Cuba and our ports at home, with the consequent liability of infection being brought into our own ports. By the middle of this month, however, the disease will have practically disappeared in Cuba. Even after that time the inspection of all vessels at all quarantine stations will be continued, though merely as a precautionary measure.

The Plague in Vienna.—Fräulein Albine Pecha, one of the nurses who attended the victims of the bubonic plague at Vienna, died from the disease on Sunday morning. She was twenty-two years old, and was strong and healthy until infected by the plague. The physicians, sisters, and priests who ministered to those who have had the plague are detained in quarantine, but none of them has as yet shown any symptoms of the disease.

The Death of Colonel Waring.—Col. George E. Waring, Jr., died of yellow fever, on last Saturday morning, at his home in this city. Colonel Waring went to Havana a few weeks ago, as the head of a special commission of this government to find out the exact sanitary condition of that city, and to devise some plan for improving the condition of affairs. The plan of the commission was to place the city of Havana and the coast towns of Cuba in such a good sanitary state that the recurrence of yellow fever or its entrance into the Gulf cities of the United States would be prevented. The commission was also instructed to select sites for the camps of the United States troops that are to occupy the island next month. The work of sanitary inspection necessarily took Colonel Waring into the filthiest of Havana's slums, the choicest breeding-places of all manner of filth diseases. He showed no symptoms of the disease until just before his arrival here on the Tuesday preceding his death. No one even then suspected the nature of his malady, which was thought to be a slight cold or a malarial attack. He was to have gone to Washington the day after reaching here, in order to present a report to the President. Fortunately his report, which is said to contain an elaborate and detailed plan for the sanitation of Havana, was written before his arrival; but the loss of the master mind, by which all these details could have been developed into practical form after the evacuation of the city by the Spaniards, is a great public calamity. Colonel Waring was the first man in the country to whom every one naturally turned when it was known that Americans were to have an opportunity to clean out the Cuban pesthole, for every one knew that he could do it. Colonel Waring was born in Pound Ridge, N. Y., on July 4, 1833. His first work of public importance as an engineer was the designing of the drainage system of Central Park in this city. He first attained prominence as a sanitary engineer, however, at the time of the outbreak of the yellow fever at Memphis in 1878, when he changed the sewage system of that city by introducing methods of his own, which separated house drainage from surface drainage. His system has since been adopted in a large number of American cities as well as in some towns abroad. In 1882 he was appointed a member of the national board of health, a position which he held for a number of years, and in 1894 he became assistant engineer of New Orleans. In 1895 he was appointed street-cleaning commissioner of New York, and lifted from our city the stigma of being one of the dirtiest of the large cities in the world. The death of Colonel Waring is one of the saddest and most nearly irreparable of the casualties of our war against Spanish misrule and insanitation in America, but we have cause to rejoice that he lived to sketch the plan of campaign and to point out the means by which the yellow plague may be made a stranger to the coast towns of Cuba.

A Plague Ship at San Francisco. — The French bark *Du Chesscanne* arrived at the port of San Francisco from Hong Kong, on October 28th, with plague aboard, and has been detained in quarantine indefinitely. On August 20th, at sea, Captain Cervany died of the bubonic plague, and on September 20th Seaman Ange Menier died of the same disease. No further cases had occurred among the crew up to the arrival of the vessel, but there were fears that the disease was epidemic among the rats aboard the bark.

Yellow Fever in Mexico. — The officials of the State of Nuevo Leon, Mexico, report the occurrence of several cases of yellow fever at Monterey. It is not thought that the disease will spread, however, for the same cold wave that put an end to the disease in Mississippi has extended also into Mexico.

An American Physician Honored.—The Shah of Persia has recently conferred upon the veteran medical missionary, George W. Holmes, M.D., the highest decoration of the Order of the Lion and the Sun, except one which is reserved exclusively for the prime minister.

Dr. Holmes went to Persia in 1874, and is now in charge of the Presbyterian Medical Mission in Hamadan, Persia. Formerly he resided in Tabriz, where for a number of years he was the chief consulting physician to the present Shah, who was then crown prince. Since ascending the throne, the Shah has repeatedly invited Dr. Holmes to become his personal physician and to have charge of the health of the royal harem. In a land of intrigues, where a cup of coffee may contain a potion that will end all, the calling in of a physician becomes a very serious matter, and no higher compliment could be paid to Dr. Holmes by His Imperial Majesty than was paid when he invited him to become his physician.

In Memory of Dr. John Blair Gibbs.—By direction of the President, the general field hospital at Camp Hamilton, Lexington, Ky., has been designated as John Blair Gibbs General Hospital, in honor of Assistant Surgeon John Blair Gibbs, of New York, who died on June 12, 1898, from wounds received in an engagement with Spanish infantry at Guantanamo.

The Craig Colony for Epileptics.—The annual meeting of the board of managers of this institution was held at the colony on the 11th instant, and the following officers of the board were re-elected: Frederick Peterson, M.D., *President;* H. E. Brown, *Secretary;* John F. Connor, *Treasurer.* The annual report of the medical superintendent, Dr. William P. Spratling, was presented and read. The most gratifying feature of the report was the discharge of seven patients during the year as recovered. It was also reported that marked improvement had taken place in the majority of all cases admitted to the institution. The industrial showing for the year was very satisfactory, the value of all articles grown and manufactured by the colony during the year amounting to $36,889.03. Eighty-six per cent. of all male patients and eighty-three per cent. of all female patients were reported as engaged in labor designed to reduce the cost of maintenance. On the first day of October applications were on file for the admission of over six hundred patients, who could not be received on account of lack of room. The managers have decided to ask the coming legislature for a large sum for dormitory construction. In view of the demonstrated practical value of this institution the legislature will doubtless grant any reasonable request that the managers may make. The colony is one of the few medical charities worthy of a grant of the taxpayers' money, one of the few that may not be charged with pauperizing the people and impoverishing the profession. We trust the legislature will aid it to increase the measure of its usefulness.

A Tri-County Medical Association.—The members of the county medical societies of the counties of Warren, Sussex, and Morris in New Jersey met at Hackettstown, on Tuesday, October 11th, for the purpose of organizing a tri-county medical association. The officers elected were Dr. John S. Cook, *President;* Dr. E. Morrison, *First Vice-President;* Dr. Levi Farrow, *Second Vice-President;* Dr. C. B. Smith, *Secretary;* Dr. F. W. Flagge, *Treasurer;* and Dr. H. A. Henriques, *Reporter.* After the organization of the society and the adoption of bylaws the members listened to two very interesting papers, one by Dr. Philander A. Harris, of Paterson, on "Troubles of the Obstetrician," and the other by Dr. H. A. Henriques, of Morristown, on "The Diagnosis and Treatment of Appendicitis." The next meeting will be held at Washington, N. J., on the second Tuesday in October, 1899.

The Southern Surgical and Gynæcological Association.—The eleventh annual meeting of this association which was announced to be held in Memphis, Tenn., Tuesday, Wednesday, and Thursday, November 8th, 9th, and 10th, has been postponed till Tuesday, Wednesday, and Thursday, December 6, 7, and 8, 1898, on account of the quarantine regulations in some parts of the South.

Dr. L. J. Ladinski has been appointed visiting surgeon to Gouverneur Hospital.

Guarding against Leprosy.—The California State board of health has commissioned Dr. C. A. Ruggles, president of the board, to visit the Sandwich Islands, to learn the extent of the presence of leprosy, and to report measures to prevent its introduction into California. Unless Congress passes a special measure to prevent it, the inhabitants of Hawaii will be free to come to San Francisco and other Pacific ports, and it is the intention of the board of health to prepare a report for submission to the coming legislature which will suggest safeguards against the spread of the disease.

The New York Obstetrical Society.—At the last annual meeting of the New York Obstetrical Society the following officers were elected for the ensuing year: *President*, Dr. W. R. Pryor; *Vice-Presidents*, Dr. LeRoy Brown and Dr. Edwin B. Cragin; *Recording Secretary*, Dr. Joseph Brettauer; *Assistant Recording Secretary*, Dr. E. E. Tull; *Corresponding Secretary*, Dr. George W. Jarman; *Treasurer*, Dr. J. Lee Morill; *Pathologist*, Dr. George C. Freeborn.

A Palatable Meat Extract.—The *British Medical Journal* says that the authorities recently seized in London forty-four barrels of decomposing livers upon premises devoted to the manufacture of all kinds of "table delicacies" and a pure meat extract. All the livers were decomposed, although the manager is reported to have expressed the opinion that they were "all right." They consisted for the most part of pigs' livers which had been exported from Ireland to Hamburg for the manufacture of German sausage, and so much of the supply as was in excess of the demand was sent over to England, to be used in the preparation of a meat extract. The defendant was made to pay £100 fine and costs, and lost his much-travelled livers.

The Tri-State Medical Association of Mississippi, Arkansas, and Tennessee will meet in Memphis, on Tuesday, Wednesday, and Thursday, December 20, 21, and 22, 1898. Titles of papers to be read at this meeting should be sent to Dr. Richmond McKinney, secretary, Continental Building, Memphis, Tenn.

Correspondence.

OUR LONDON LETTER.

(From our Regular Correspondent.)

MEDICAL SOCIETY—ANTISTREPTOCOCCIC SERUM IN PUERPERAL SEPTICÆMIA—"CHRISTIAN SCIENTISTS"—MEDICAL DEFENCE—IN MEMORY OF GREIG SMITH—LISTER AT LIVERPOOL—CHADWICK LECTURES.

London, October 14, 1898.

Monday was the opening day of the one hundred and twenty-sixth session of the Medical Society of London. Mr. Edmund Owen took his seat as president for the year, and congratulated the fellows on the satisfactory state of the finances. He called attention to the value of the library, in which are many old and rare volumes. Among the manuscripts is the diary of Rev. John Ward, M.A., Oxon., from 1662 to 1681, in which there are references to Shakespeare's existence and death. This book the president passed round, and went on to remark that one of the early presidents of the society was several times fined for taking away journals, without making a proper entry of his doing so. Cheap printed matter in these days, Mr. Owen added, and the multiplication of journals left no inducement to run the risk of being fined for borrowing, and for his part he had never come across a journal which he was tempted to abstract. I commend this somewhat dubious compliment to the editors of the journals or to their contributors, according as they may feel oppressed with the "watering down of literary talent," which Mr. Owen thinks he sees in the inconvenient growth of medical journalism. Mr. Owen concluded by proposing to devote an evening to the discussion of "surgical failures," to which he promised to contribute. A journalist's aside to this suggestion is "surgeons' failures too."

Dr. Allchin then read a paper on "Considerations Preliminary to the Study of Dyspepsia," in which he deprecated the vagueness of thought and method with which the subject of indigestion has been described and investigated. He would include in the term digestion all the changes undergone by the ingesta throughout the alimentary canal. Gastric digestion he regarded as probably the least important, as its defects could be made up for at a later stage, a proof of which is the recovery of a patient after total extirpation of the stomach. He did not include absorption, which, he said, was quite different in nature from digestion, but later on he included defective absorption of digesta among the disorders of digestion from a causal point of view, the others being: (1) Errors of diet; (2) diseases of the digestive organs, whether structural, nervous, or dependent on blood or lymph changes; (3) improper bacterial action in the alimentary canal; (4) abnormal excretory processes. He objected to the term "functional disease," as the conditions so spoken of were associated with structural change. And yet his own classification hardly supports this dogmatic statement. Errors of diet and improper bacterial action do not suggest change of structure.

Dr. Maguire remarked that the several digestive functions disappeared in an order inverse to their development. Thus the power of digestion for fat was first lost, then for starch, last for proteids.

Dr. Allchin in reply said he could not accept this view without further evidence.

Antistreptococcic serum was talked of at the Obstetrical Society's meeting on the 8th inst. It was used in a case of puerperal septicæmia, related by Drs. I. and A. R. Walters, of Reigate. At the time of the first injection the temperature was 103° F.; pulse, 120. Some hours later the temperature fell to 98° F. Next day it rose to 100.4° F. and another injection was given, with a similar fall. This was followed by great depression, lasting several days, and there was transient albuminuria.

Dr. Amand Routh remarked that septicæmia was not always due to the streptococcus, and when this was not the case the injection of it would be dangerous.

Dr. Eden also urged the importance of restricting the use of this serum to cases caused by the streptococcus, and referred to Haultain's three cases, in one of which Loeffler's bacillus was found, and which ended in recovery under the use of antidiphtheritic serum. In the second, the streptococcus being present, the appropriate serum was used, and recovery ensued. In the third the bacillus coli was found and the patient died, no appropriate serum being known.

Dr. Drummond Robinson had not much confidence in precise differentiation or in this serum. His first five patients all died; the sixth recovered, but looked hopeful before the serum was resorted to.

Dr. Cullingworth considered that antistreptococcic serum ought to be given in every case of septicæmia, although many cases are due to a mixed infection. If not fully armed, we should use the arms we have. In reply to a subsequent question, he admitted that a member of St. Thomas' staff had had serious symptoms after an injection of the serum for a poisoned wound of the finger, but he said in that case the quality of the serum was doubtful and its age unknown. He had been informed by those with large experience that untoward results were very rare with fresh antistreptococcic serum.

Dr. J. Phillips had a case of acute septicæmia, in which the serum had immediate effect in calming wild delirium and the patient recovered, though she had a long convalescence. Various rashes followed the injections.

Dr. W. H. Tate had a case in which the first few injections relieved, but the response grew less and less and the patient died.

Dr. McCann urged the use of the serum as a preventive whenever there was extra risk of infection, as in parturient patients with foul discharges.

Dr. Herman related a case of removal of a large suppurating cyst, followed by collapse and apparently approach of death. On the rally from this there were a rise in temperature and fresh collapse. Serum being injected, temperature and pulse fell, and the patient made a good recovery.

The quacks who call themselves "Christian scientists" have had a rude shock in the exposure of their doings that took place last Saturday at an inquest concerning the death of Major Lester. This officer, only thirty-eight years old, was appointed in 1892 instructor in military topography at Sandhurst—a sufficient indication of his service. In August he was attacked with tuberculous peritonitis and attended by two surgeons-colonel, and two physicians were called in consultation. On September 5th the doctors were dismissed and a Mrs. Grant, said to come from America, was called in to give "Christian treatment." She said she began treatment on receipt of the wire, before seeing the major. This treatment she described as "taking up the right thought of the omnipotence and love of God." When asked how she would treat a broken leg, she said she "would ask a surgeon to treat it." She said she never gave any material remedy whatever, but continued her treatment when away from the patient. She added, "Christ never sent the sick to physicians," upon which the coroner remarked that "Christ had a power these people are trying to usurp—trying to make themselves out equal to God." Mrs. Grant stated her charge for treatment to be a guinea a week. The coroner in his summing up said that he could not help

thinking "some of these people would be better—and very much safer—in a lunatic asylum." The jury found that the major died of tuberculous peritonitis, and expressed their "strong sense of abhorrence of the so-called treatment by Mrs. Grant."

When we see people who seem to have a pretence to education trusting to such quackery, we need not so much wonder at the "peculiar people," who are mostly very ignorant and can understand only the text on which they rely as a literal command. But if education has such results, there must surely be something amiss in the manner of carrying it on.

The Defence Union lost a case last week. A midwife, said to be the niece of a judge, was sued under the apothecaries act. The defence was that any one could sell medicine as a chemist, except scheduled poisons, and any midwife could treat diseases.

The jury refused to convict. It would seem that both the Apothecaries' Society and the Pharmaceutical Society need to look after their privileges, if every woman who calls herself a midwife is to set them at naught. The Obstetrical Society should also again be hauled over the coals for selling its worthless diplomas.

The new operating-theatre at the Bristol Infirmary, built as a memorial of the late Greig Smith, was opened on Saturday, when all the local celebrities were present, as well as the president of the London College of Surgeons. Sir W. MacCormack spoke, and contrasted the losses in the Egyptian campaign with the awful mortality from sepsis in former wars.

Liverpool also had a gala day on Saturday, for there the Victoria University, with imposing ceremony and in the presence of a distinguished and gorgeously robed audience, conferred its honorary D.Sc. on Lord Lister, who delivered an address in which he showed the enormous value of research. His remarks have roused the ire of the antivivisectionists, and already certain newspapers are pandering further to the faddists. Lord Lister afterward formally opened the Thompson-Yates laboratories and in the evening was present at the lord mayor's dinner, where Virchow was also present and spoke of him as his "old friend of many years."

Prof. M. Foster, who spoke at this dinner, said the sight of the new laboratories had produced a double physiological effect on him. "They took away my breath and made my mouth water."

The first course of Chadwick lectures, inaugurated in memory of Sir Edwin Chadwick, was opened on the 12th inst. Prof. O. Chadwick, son of the great sanitarian, delivered an address, sketching the history of the foundation and the value of practical work.

THE DOCTRESS AND THE DOCTOR.

To the Editor of the Medical Record.

Sir: Having read the ambitious screed of Doctress Jarrett, printed in the Medical Record of the 22d inst., as one of the unfortunate male doctors against whom the lightning of her wit has been fulminated, by your courtesy I venture to call her attention to a fact or two, *in re* the female physician.

1. The practice of medicine is a business. Business knows no sex. No first-class male milliner would think for a moment of making capital out of the fact of his masculinity. *Per contra*, most doctresses do use their femininity as a part of the goods they have to sell; this is the crux of the whole matter.

2. No honorable physician can rightly object to honorable competition, be the competitor male or female; but when the accident of sex is included in the category of the professional attainments, and flaunted in the eyes of the public as a claim to a heaven-born right to treat the diseases of women and children more skilfully than a brother practitioner can, an earnest protest must be entered, not only on behalf of the profession but also in the interest of the laity; for, given two physicians of equal attainments and experience, the female cannot be granted precedence.

3. It is a sad truism that the world-wide conflict of "sex against sex" is continuously waged, alike in the hovel and in the palace. To be honest the doctress must deal with each side with impartiality. Does she do it? The reply must, in most cases, be in the negative. Her very inability to do this is the strongest reason for opposing her more general recognition as an honest competitor in the field of physic, and is the cause of her being, from time to time, regarded by the head of the family as a secret foe in the midst of his household fold.

In individual cases, when the doctress does not exploit her sex, her brother physician should always extend to her the hand of friendship and a courteous consideration, which her position demands. As a matter of fact he generally does.

H. G. MacKaye, M.D.

Newport, R. I., October 25, 1898.

THE MEDICAL PROFESSION IN HAWAII.

To the Editor of the Medical Record.

Sir: Your article on the health of Hawaii and the need of a commission appointed by our government to segregate the lepers, suggests to me that possibly you are not aware that for several years Hawaii has had a most efficient board of health, which has given special attention to leprosy. Dr. R. P. Myers has done splendid work for the board, and is active in an experimental bacteriological station already established in Honolulu.

Persons suspected of having early symptoms of leprosy are required to report to the station at intervals, and if found infected are at once banished to Molokai.

The profession in Hawaii is represented by men of the highest repute and ability, and, as in other lands, is full to overflowing. There are few or no openings for young doctors, save on the sugar plantations, where the isolation is extreme. J. C. Bowker, M.D.

Lawrence, Mass.

A VISIT TO WILLARD STATE HOSPITAL.

To the Editor of the Medical Record.

Sir: A few days ago I had the pleasure of attending the regular monthly meeting of the Willard State Hospital Medical Society and Journal Club. These meetings are held in the hospital, and are of the most interesting and instructive character. I understand that a project is in contemplation for making the various State hospitals, to a certain degree, educational centres for the general practitioners in their respective districts.

At the meeting referred to, exceptionally able papers on the subject of paresis were read and discussed.

While this subject belongs properly, perhaps, to the alienist, yet to me as a general practitioner its presentation on this occasion was most enjoyable. The members of the medical staff are untiring in their efforts to make the stay of their professional brethren pleasant and profitable; indeed, one visit will hardly suffice to get more than an outline of the work which is being done in this extensive and well-conducted institution.

Time and space limit me to the briefest reference to but one phase of the care and treatment of the more than twenty-two hundred inmates—the industrial.

This system is being developed more extensively than ever before. All the clothing, including shoes, is made on the premises; carpet weaving, basket and rug making, and various other industries occupy the time of the patients. Several hundred men are employed on the farm, which consists of eleven hundred acres, thus subserving a double purpose in the health-restoring and economic problem, which is being solved by this model institution. But the point which I wish to emphasize is that the general practitioners in this district should avail themselves of the opportunity for instruction offered by Willard in these monthly meetings.

In the intelligent commitment of the insane we, as general practitioners of medicine, need something of the special training here afforded. Then, when we have acquired all this, let us hope that the law may be so amended and modified that the findings of the duly accredited physician in relation to the insane may not be reversed by the say-so of neighbors, or even by the *ipse dixit* of a judge who has no especial qualifications for the work.

E. W. Bogardus, M.D.

Poplar Ridge, N. Y.

APOMORPHINE.

To the Editor of the Medical Record.

Sir: In Dr. Visanska's article of July 2d in the Medical Record were stated many facts. With the partial exception of the remark on epilepsy, not a step was taken upon uncertain ground. Furthermore, he stopped far short of giving full justice to this most valuable friend of the physician. We who have dealt long with the hysterical, the epileptic, the malingerer, and the criminal insane have learned to look upon apomorphine as a friend in need. Among these and kindred unfortunates it is a relaxant, a disciplinarian —yea, even a reformer of matchless potency. The writer has yet to find a case of hysteria that refused quickly to bend the pliant knee to its soft, persuasive charms. No matter how rigid the muscles, or how rapid and hard the breath be drawn, a hypodermic injection of one-fifth of a grain of apomorphine will brush aside our cobwebs of doubt in diagnosis and place a pedestal under us in the estimation of the anxious family.

In those cases of epilepsy in which the convulsion is produced immediately by deleterious matters in the stomach, apomorphine goes hand-in-hand with the stomach tube; sometimes one should be chosen, sometimes the other. When hysteria is an element, the tube is a veritable *bête noir*.

Let us give an example in speaking of the malingerer. A cowboy from the West had come East for his neighbor's health, and, finding here different conditions of life—that wishes no longer made saddle horses, only nightmares ready to hand—he conceived the bold idea of becoming epileptic and being somewhat "buggy" afterward. Once too often did he tempt fate, and caught a Tartar in the shape of one-fourth of a grain of apomorphine. To-day he breaks stone on the public road.

To the Matteawan State Hospital, by natural gravitation, in 1896 there came an Antigua negro, six feet two inches, weighing two hundred pounds, a typical bully, who began at once to exercise his choice amusement upon the weaker ones about him. One day two one-fifth-grain doses of apomorphine entered his pachyderm; and now he obeys willingly any one who carries the symbol of authority.

The utility of this drug is but little known, the gentleman from South Carolina to the contrary.

The gentleman from Oregon should have saved his dose till the next day, as he had already allowed more than an hour to pass before giving it.

Edgar J. Spratling, M.D.,
First Assistant Physician, Massachusetts Hospital for Epileptics.

ZOLA A NEUROPATH.

To the Editor of the Medical Record.

Sir: In the article "Zola a Neuropath," published in the Medical Record of September 17th, a statement is attributed to Max Nordau, which is completely contrary to the entire spirit and letter of his masterly work, "Degeneration." The sentence to which I refer is this: "Max Nordau's startling theory that genius is only a form of degeneration, although not accepted in its entirety, is yet regarded by many as worthy of some consideration." This happens to be just exactly what Nordau does not say. He says that a degenerate may be a genius or an imbecile, but distinctly asserts that a genius is not necessarily a degenerate.

In comparing the same genius with the gifted degenerate he uses these words: "Take from the former the special capacity through which he becomes a genius, and there still remains a capable, often conspicuously intelligent, clever, moral, and judicious man, who will hold his ground with propriety in our social mechanism. Let the same be tried in the case of a degenerate, and there remains only a criminal or madman, for whom healthy humanity can find no use." He proceeds to contrast the healthy genius Goethe with the degenerate Schopenhauer, and, farther on in the book, the sane Tennyson with the mystics Swinburne and Dante Gabriel Rossetti. Pray let me refer you for reperusal page 23, from which I have quoted the above sentence. A hearty admirer of both the Medical Record and Max Nordau, I am content to leave to you the decision of my case, and trust that you will pardon a criticism ventured with all modesty.

T. E. Nott, Jr., M.D.

[Perhaps the statement to which our correspondent objects, that Nordau's theory is that "genius is only a form of degeneration," was a somewhat too emphatic assertion, and not altogether in accord with the spirit of Nordau's work. The word "often" in the place of "only" would possibly better express his meaning. Still it cannot be denied that Nordau implies that there is a decided affinity between degeneration and genius.—Ed.]

DIPHTHERIA PREVENTIVE OR DIPHTHERIA ANTITOXIN?

To the Editor of the Medical Record.

Sir: It is becoming very clear that diphtheria antitoxin is in no sense an antidote for the poison of diphtheria, its only effect being to inhibit the activity of the bacillus producing the poison. Like vaccination in small-pox, it is a preventive and not an antidote, the only difference being that in the case of diphtheria infection is usually present before inoculation is made, so that it becomes a question of lessening the dose of the toxic material instead of preventing its formation enirely. In other words, the toxins once formed cannot be neutralized or their effects modified by the injection of the serum; only their quantity is lessened by controlling the activity of the bacillus producing them. This being the case, the use of the word antitoxin, which, unexplained, seems to imply, to the general public particularly, the possession of antidotal attributes, is unfortunate. If instead of using this term the physician will say that he pro-

poses to use a preventive, he will get his cases under observation and treatment much more readily and at a very much earlier stage, and people of average intelligence will be very much better satisfied, whatever the results. So plainly is this the fact that the writer has quite fallen into the habit of calling the serum the diphtheria preventive when talking to patients, instead of using the much more formidable and confusing term antitoxin. In short, just as soon as it is explained that it is a preventive and not an antidote the thing goes very much better.

M. A. VEEDER, M.D.

LYONS, N. Y.

HAWAII FROM A HEALTH POINT OF VIEW.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: The editorial in your issue of October 15, 1898, entitled "Hawaii from a Health Point of View," is based upon such erroneous information that it is calculated to mislead opinion regarding the salubrity of our recent acquisition, the Hawaiian Islands. As a fact, no more delightful or wholesome climate exists in any other part of the world. Owing to the insular position of the territory and the peculiar circuit of the currents throughout the Pacific Ocean, the extremes of heat and cold are unknown, and the hurricanes and typhoons that devastate the West and East Indies never occur. Prior to the wars of conquest a century ago, the native population was redundant. Since the advent of Captain Cook that population has steadily diminished, not in consequence of insalubrity of natural environment, but by reason of certain infectious diseases to which the aborigines were utter strangers before their contact with foreigners. Chief among these were syphilis and tuberculosis, which were propagated among the people with fearful rapidity as a consequence of their promiscuously affectionate habits. The introduction of measles from California in 1848 is usually cited as having decimated the population. This statement is not exactly correct. The disease spread so rapidly that nearly every one sickened at the same time, but it was not unusually severe. The natives, however, knew nothing of the proper treatment of the uncomfortable fever, and sought relief in frequent baths in the waters of their mountain streams and alluring surf. Almost immediately they were attacked with inflammations of the respiratory tract and alimentary canal. While thus struggling, a world-epidemic of influenza reached the islands, and attacked every person there resident. Before this infliction had passed away, the Californians sent them some choice specimens of whooping-cough, which started a third epidemic that raged with great severity among the children. Scarlatina was also imported, but did not prevail extensively.

The result of this fourfold incidenee within the space of a few months was, of course, disastrous to the native people. Foreigners, their children, and the aborigines under the personal care of the foreign residents, suffered no more severely than Americans and Europeans in their own countries. But the native Hawaiians paid the penalty of inexperience, and one-tenth of the population perished.

Small-pox was introduced from California into Honolulu in the year 1853. It spread just as far as it could till arrested by vaccination. Owing to the difficulty of procuring vaccine virus, the disease prevailed for a number of months here and there throughout the islands. But it produced no such mortality as you have quoted from Dr. Morrow's ill-informed statement. The total number of cases was 6,405, and the number of deaths was 2,485. Scarcely any of the foreign residents contracted the disease, being protected by previous vaccination. As for "burying half the population of Honolulu," nobody has ever done that, unless in his dreams over an empty wine bottle.

The ravages of tuberculosis and syphilis have been already mentioned. Of these diseases Americans and Europeans in Hawaii have little experience, unless they adopt the habits and mode of life of the aborigines.

Leprosy, also, has furnished a similar history. While its propagation has been provoked and stimulated by the childish innocence of the primitive people, very few foreigners of continental birth have ever been infected; and then only when their own habits have been dangerously assimilated to those of the aborigines. The inside history of these experiences has never been fully published. As a result of the ruthless system of inspection and segregation in vogue, the disease is now rarely seen outside of the leper prison; and as the progress of civilization elevates the community the prevalence of leprosy diminishes.

I have said nothing of the tolerance of infection that is growing among the islanders as a consequence of continued incidence of infectious diseases. That forms an interesting chapter in their medical history.

I quite agree with you in the desire that our wealthy nation may be induced to make a thorough investigation of the diseases that exist in salubrious Hawaii. No more interesting biological station for such research can be found in any part of the world.

HENRY M. LYMAN, M.D.

CHICAGO, October 20, 1898.

Society Reports.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, October 17, 1898.

GEORGE TUCKER HARRISON, M.D., PRESIDENT.

Abdominal Hysterectomy; Resection of Ileum by a Modification of Maunsell's Method; Appendectomy; Recovery.—DR. FREDERICK HOLME WIGGIN reported the following case: A girl of eighteen years came under his care last July, suffering from pyosalpinx. There was also a history of specific infection, and at the time of operation she exhibited certain secondary symptoms. She was suffering a great deal. The usual abdominal incision was made through the right rectus muscle, and further examination showed that a portion of the ileum was adherent to the fundus of the uterus. During the separation of the adhesions a large portion of the peritoneal coat of the bowel was injured. The appendix was included in the mass. After amputation of the uterus the appendix was removed, and then the damaged portion of the ileum was resected. The ends were joined together by a modification of the Maunsell operation. The speaker said that for a long time it had seemed to him that the chief value of the Maunsell method was the demonstration of the possibility of passing the sutures through all the coats of the bowel without causing septic infection. Working upon this theory, he had found that the invagination and slit employed by Maunsell were unnecessary. In the modified method, which he now employed, the first suture was passed through the mesentery, the second directly opposite, and then one suture on either side. The others were inserted in a similar manner, with the exception of the last two. Here Lembert sutures were substituted. Before they were tied, one or two ounces of saturated solution of sulphate of magnesium was injected into the bowel to

secure an early movement. In his case, the patient rallied well from the operation, and felt so comfortable on the third day that she cried because she was not allowed to get up. Dr. Wiggin said that in several other abdominal cases he had employed this modified method, with equally good success. If the sutures were properly inserted and were tied sufficiently tightly, they would be hidden from view.

Two Large Abdominal Tumors.—Dr. Wiggin also presented two large abdominal tumors. The first one had been removed from a woman, about fifty-nine years of age. She was in a very feeble condition at the time, and operation had been declined by several surgeons. An exploratory laparotomy had been done by one surgeon, but as the incision had been made low down and the intestines found adherent, it had been deemed impracticable to remove the tumor. The woman accepted the risk of the operation, and accordingly, after she had been stimulated freely for several days, the operation was done on July 14th. An incision was made from the ensiform cartilage to the pubes. It was found that there were no adhesions whatever above. The pedicle was quite broad, and seemed to spring from the fascia of the pelvic muscles on the right side. From the time of making the first incision to turning the tumor out of the abdomen, about fifteen minutes elapsed. The large abdominal wound healed by primary union, and the patient did well for a considerable time. About three weeks after operation the speaker had gone off duty at the hospital, but he had learned that after five or six weeks the vomiting had returned and the woman had died. The autopsy showed that death was due to kidney disease. The pathological report by Dr. Leon T. Le Wald, of the Carnegie Laboratory, showed that the tumor weighed twenty pounds and measured thirty-two inches in its greatest circumference. The general surface was irregular, with a few small round elevations. The pedicle was situated in the depression between the two main masses of the tumor, and contained a large artery with greatly thickened walls. The tumor had a thin but distinct capsule. On section, the mass presented a nearly homogeneous smooth surface. Microscopical examination showed it to be made up for the most part of smooth muscular fibres and connective tissue, the former predominating. There were areas of infiltration with fat, and others of infiltration with lime. The anatomical diagnosis was myofibroma, probably arising from the intestinal tract.

The second specimen had been removed two weeks previously from a woman, forty-one years of age, who gave a history of an abdominal growth having existed for many years. The tumor grew from the anterior wall of the uterus, and when it was taken out there was free venous hemorrhage. In the efforts to control this, a large portion of the base of the bladder was accidentally cut across, and it was also wounded low down on the right side. The bladder was carefully sutured from the inside with catgut, and a peritoneal flap from the tumor dissected up and used to cover over the sutured portion of the bladder. A catheter was fastened into the bladder and left there for the first twenty-four hours. It was then removed, but the patient was catheterized every two hours. Four days ago the lower angle of the wound had opened, and some urine had escaped therefrom. A self-retaining catheter was then inserted. To-day she had passed fifty ounces through the catheter, and she was now making a very excellent recovery. The pathological report from Dr. Le Wald showed that the tumor weighed seventeen pounds, and measured nine and one-half inches vertically, seven inches antero-posteriorly, and nine inches laterally. Its surface was slightly irregular, with rounded elevations. It had a distinct capsule, which was continuous with the outer surface of the anterior uterine wall. The tumor was very hard, owing to extensive calcification. The posterior wall of the uterus was greatly thickened, owing to a myomatous growth. The ovary was fibro-cystic.

Dr. J. A. Wyeth asked what kind of a needle Dr. Wiggin used in making the end-to-end anastomosis, and whether he had observed any sepsis in these cases.

Dr. Wiggin replied that he preferred to use a straight, round milliner's needle, about No. 7 or 8. He had not observed any sepsis in the cases in which the modified method had been used, and he was of the opinion that it considerably shortened the time of operation. He had done the operation in ten or twelve minutes.

Rapid Formation of Plastic Exudate.—Dr. Wyeth said that this was much more rapid than suture by the Lembert-Czerny method. He had used the latter for the mucous membrane and the Lembert for the outer sutures. Working as rapidly as possible, it had taken him from half an hour to one hour. Although he had never had the courage to undertake it, he had often thought that, as certain perforating wounds of the bowel were not necessarily fatal, it might be safe to use a suture passing through all the coats. Experience had shown him that plastic exudate was thrown out very soon after suture of the intestine. For instance, in one case, in which a patient had died three hours after operation, the autopsy showed that the sutures were entirely concealed in plastic exudate. This was remarkable, considering that the patient was practically moribund at the time of the operation.

Dr. Wiggin said that passing the sutures entirely through the bowel seemed to him to give firmer suturing than the Lembert method. In one case that he had had, the peritoneal coat had been entirely regenerated in sixty hours. Three days ago he had undertaken to close a fæcal fistula by means of the through-and-through suture. Finding at the time of the operation that there was involvement of the stomach, he had operated upon this organ with the same through-and-through sutures. The day previous the patient's temperature had been 100° F. and the pulse 110, and this evening the temperature was 98.6° F. and the pulse 98.

Dr. Thomas H. Manley said that, while theoretically operation was the proper treatment in uterine fibroids, the necessary risks of the treatment and the sequelæ made it proper to defer operation unless very troublesome symptoms were present. It seemed to him perhaps better to treat these cases electrically by the Apostoli method. He had noticed that insanity was not a very infrequent sequel of the removal of fibroids; he had had one such case in his own experience.

The Large Tumor a Rare One.—Dr. Leon T. Le Wald said that the very large tumor presented by Dr. Wiggin must be a very rare one, for in two thousand specimens in the Carnegie Laboratory he had been unable to find anything exactly similar. As there was no connection with the uterus or bladder, it was reasonable to suppose that the growth sprang from some portion of the intestinal tract.

The President said that from his own experience he felt inclined to believe that the tumor had really originated from the uterus, as a subserous tumor with a long pedicle, and that it had become detached from the uterus subsequently and attached elsewhere. He had had such a case, and had followed it during life and to the autopsy table.

The Medical Side of the Alcohol Problem.—Dr. T. D. Crothers, of Hartford, read a paper with this title. He said that one of the inexplicable things in life was the fact that the study of alcohol and its effects on the human race had been left to the laity, and particularly to philanthropists. The injuries from

the use of alcohol had always been a dark, unexplained shadow.

Baneful Effects of Moderate Use of Alcohol.—The ingestion of alcohol accelerated the heart's action ten or fifteen beats a minute at first, but after a while the circulation became slower, so that the pulse rate dropped at least as much as fifteen or twenty beats below the normal. Vision was always diminished and rendered unreliable by the ingestion of alcohol. The acuteness of the sense of hearing was likewise impaired. The increase in the pitch of the voice of persons under the influence of alcohol was due to impaired hearing. Hallucinations of hearing were frequent under such circumstances. The senses of taste and smell were also influenced by alcohol. The sense of touch was always exaggerated or diminished, and careful measurements of muscular force showed that the muscular system did not escape the deleterious action of this poison. If the temperate man suffered from the use of one or two ounces of alcohol in this appreciable way, then the continual or frequent drinking of alcohol must exert a distinctly deleterious influence. All experimenters agreed that when alcohol was taken in excess the result was a profound tissue and cell degeneration and general starvation of the tissues. Alcohol, by its anæsthetic action, soothed the irritable nerve centres, and the effects were so pleasing that the individual desired to repeat the experience. Often this desire to seek relief by its anæsthetic effect was really an indication of a diseased condition, which perhaps was disclosed only by a post-mortem examination. A century ago the anæsthetic action of alcohol created dementia and idiocy, but to-day it was more apt to cause delirium and paralysis. Heredity seemed to be one of the most prominent causes of inebrity.

Treatment.—The removal of all spirits at the beginning of treatment was always followed by the very best results, and unpleasant effects could be neutralized by the use of strychnine in doses of one-twentieth of a grain every three hours, together with the bromides to produce sleep. A calomel purge and a hot bath were useful adjuvants, and coffee was sometimes very beneficial. There was no danger of delirium being produced by this abrupt withdrawal of alcohol. In many cases dementia, well-marked paresis, or tuberculosis appeared when spirits were withdrawn. The special exciting causes should be discovered, if possible, and removed. In some of the periodical cases the attacks were preceded by certain premonitory symptoms which enabled the physician to use preventive measures, such as the use of calomel or saline cathartics, rest or exercise as the case might be, along with acids and vegetable tonics. Apomorphine and mixtures of atropine and hydrastine were always dangerous, on account of their narcotic properties and depressant action on the organism. Cases which had been subjected to active so-called specific treatment always displayed a very marked enfeeblement. Practically strychnine should never be given alone, except immediately after the withdrawal of spirits. At other times it should be combined with cinchona or similar preparations. The coal-tar preparations were of very uncertain value. The various mineral and vegetable acids were exceedingly valuable, and it was often necessary to alternate these tonics at short intervals.

Best Remedy for the Drink Craze.—The most effective remedies for the drink craze were strong solutions of cinchona or quassia bark, given in doses of one or two ounces every hour. It quickly produced a disgust for drink. The action of such remedies was, of course, temporary, unless followed by a regular course of treatment. Hot baths and massage were exceedingly useful. Many cases were curable in the early stages, and the family physician should qualify himself for this important task.

Dr. Wickes Washburn said that the reader of the paper had not told when these cases were beyond the reach of treatment. Personally he believed that the pathological condition which obtained late in the disease was caused by the tortuous and hardened state of the arteries impinging upon the brain tissue, and the consequent interference with the nutrition of this organ, and when this condition existed one could hardly expect much improvement from medical treatment.

Dr. Manley said that it was a noteworthy fact that the victims of alcoholism were now sent to hospitals for medical treatment, instead of being looked upon as criminals and punished therefor. Alcoholism was certainly a disease which came within the province of the physician, and was amenable to medical treatment.

"Wine for the Stomach's Sake."—Dr. Henry Illoway said that the statement had been made in the paper that constipation was one of the causes of the drink habit. He had had a large personal experience with constipation, but had never been able to observe any direct connection between the two. It was rather an antecedent dyspepsia. The drink craze was not infrequently brought about by the medical adviser recommending the use of alcoholics "for the stomach's sake."

Dr. Crothers, in closing, said that there was no time in which the alcoholic disease could be considered curable or incurable. The drink craze was simply a symptom or sign, and its suppression did not mean a cure of the underlying disease. In a rough way it was proper to say that in a certain number of cases constipation was closely associated with the drink craze, and that when the constipation was relieved the drink craze was removed or benefited. Nearly all the periodical cases were practically epileptics—they were storm centres—and their causation was most interesting. The mistake was constantly made of considering these causes as moral rather than physical.

Foreign Body in Uterus.—Dr. A. E. Gallant exhibited a uterus which had been removed post mortem, and which presented certain unusual features. The subject was a colored woman, who had been referred to him by Dr. Avac Cutujian. On September 18th she had had a temperature of 103.5° F. The highest temperature on each day was in the morning, and the pulse constantly remained above 130, notwithstanding the temperature. Intra-uterine curettage and packing had no effect. There were no symptoms or signs of peritonitis. Hysterectomy was advised, but was not consented to. If it had been, it would almost certainly have saved her life. At the autopsy, in the very much softened and gangrenous fundus uteri a foreign body was found, which proved to be vegetable fibre, but further than this nothing had been learned regarding its nature. There was no history of any foreign body having been introduced, but the speaker thought it not improbable that the mass discovered at the post-mortem examination was the remains of a tupelo tent.

False Labor Pains.—As soon as false labor pains are suspected a four-quart enema should be given at once and then a quarter of a grain of morphine hypodermatically. The morphine may be repeated by the mouth in an hour or two if the pain lessens but does not disappear. Nothing stops the pain so rapidly as an enema. Do not think of cathartics. They take too much time and may increase the irritation. In some cases it is impossible to stop the colic until after hot drinks, as ginger and peppermint, or inhalations of chloroform, and even hot fomentations and flaxseed-meal poultices have been used.—Dr. T. Mitchel Burns, *Journal of the American Medical Association*, September 17th.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, October 20, 1898.

EDWARD JANEWAY, M.D., PRESIDENT.

The Wesley M. Carpenter Lecture: "Modern Views of Certain Symptoms and Causes of Renal Diseases."—DR. CHRISTIAN A. HERTER delivered the lecture. Regarding dropsy, the lecturer said that it was necessary to account for the entire absence of dropsy in some cases of nephritis in which there was suppression of urine for several days, if we were to accept the hydræmic theory of dropsy, propounded by Bartels. He believed that the view first advanced by Cohnheim, which attributed renal dropsy to alterations in the walls of the smallest blood-vessels, would ultimately be proved to be the correct one. In support of this theory was the fact that a very large proportion of cases of acute and subacute renal dropsy were associated with well-defined glomerulous lesions in the kidneys. The glomerulous lesions were of two kinds, viz.: (1) a variety distinguished chiefly by proliferation of the endothelial cells; and (2) a variety characterized by an accumulation of cells in the capsular spaces. The first was the more common. The albumin found in the urine in cases of renal calculus could be proved to have had its source, in part at least, in the glomeruli. While the vascular hypothesis of dropsy was the most satisfactory for the œdemas of acute and subacute nephritis, it was not so generally applicable in its simple form to chronic nephritis. Another element in the production of dropsy in many cases of nephritis was the high arterial and low venous pressure which often existed. From a study of a large number of autopsy records he had discovered that dropsy was almost twice as frequent with kidneys of large size than among patients with contracted kidneys, and that renal dropsy was much greater in cases having large kidneys than those with medium-sized kidneys.

Delayed Excretion.—Delayed excretion might be defined as the postponement of the work of the kidney in ridding the blood of its excretory solids, owing to renal disease. Methylene blue was the substance employed in making the test for this condition. Urea formed within the body in a definite period, and was excreted in a given time under normal conditions. In cases of chronic nephritis it was important to know the percentage of urea in the blood, and this information might be gained from the examination of an ounce of blood. When one grain of methylene blue dissolved in ten minims of water was injected into a muscle, it appeared in the urine in a period varying from ten minutes to half an hour, and it continued to color the urine for a period varying from fifteen to forty-eight hours. When injected into the muscle of a patient suffering from nephritis it appeared usually as promptly as in health, but the time required for its disappearance varied greatly in different cases of nephritis. It had been claimed by some writers that in interstitial nephritis the permeability of the kidneys to methylene blue was diminished—in other words, that excretion was delayed; whereas in parenchymatous nephritis the permeability to methylene blue was increased, or excretion was accelerated. However, his own experiments with methylene blue in ninety-eight cases in the City Hospital did not bear out this view. It was also noticed that in the same individual at different times the period required for excretion of the methylene blue varied. The following deductions regarding the methylene-blue test seemed to be warranted: (1) A distinct delay in excretion was evidence of the inability of the kidney to do its work on time; (2) such delay, when prolonged (four days or more, and repeated), was probably associated with an increase in the urea in the blood, and was to be taken as a sign of latent uræmia; (3) periods of delay in excretion might alternate with periods of normal excretion; (4) the prompt disappearance of the color (within thirty-six hours) was a tolerably accurate indication that the kidneys were excreting the ordinary urinary solids in a normal manner, although the urine might contain albumin and casts. Well-defined uræmic symptoms should be considered a contraindication to the employment of the methylene-blue test. When it was not desired to give the methylene blue hypodermically, it might be safely administered by the mouth in the dose of one grain, but it should be remembered that it was excreted more rapidly than when given subcutaneously—eighteen to forty-eight hours.

Bacteriuria.—The presence of bacteria in the urine was, of course, no proof that they had reached the urine by way of the kidneys, but frequently renal lesions were set up during the passage of micro-organisms through the kidneys. It was now conceded that bacteria might pass through the kidneys in considerable number, without leaving any evidence behind. The manner of their passage was probably comparable to the diapedesis of the blood cells. The kidneys were capable of removing from the blood only a limited number of bacteria. The acute degenerative nephritis of typhoid fever probably depended more upon the action of bacterial products than on the organisms themselves, but it was doubtful if such a nephritis was ever absent when the bacilli were found in the urine. A peculiar variety of bacteriuria was characterized by the presence of a large number of colon bacilli. The urine in such cases was turbid when first voided, and did not clear up on standing. It was acid in reaction and often had an indescribable odor. Albumin was absent unless there was some associated pathological state. Short rod-shaped bacteria were found in large numbers, and they developed the cultural characters of colon bacilli. It was probable that the bacteria reached the blood through some breech in the intestinal tract, and the fact that the bacteriuria was often associated with more or less diarrhœa or other gastro-intestinal disturbance would seem to bear out this view. This form of bacteriuria often proved most obstinate to treatment, but the best results were obtained from the internal administration of salol and the free ingestion of water. Many of the lesions of acute nephritis were the result of combined infections. A large proportion of all cases of acute nephritis were due to infection with the pneumococci, pathogenic streptococci, or staphylococci, the bacilli of typhoid fever, or the plasmodia of malaria.

Amyloid Kidney.—The amyloid kidney had long been a highly interesting enigma, but clinical observation had associated with this disease three conditions, viz.: (1) prolonged suppuration; (2) tuberculosis; and (3) syphilis. Recent experimental studies made it clear that the filtrate of cultures of the staphylococcus aureus were capable of producing amyloid degeneration, especially in the spleen and liver, but also in the kidneys. The long-continued action of the toxins of the staphylococcus seemed to have the power of setting up amyloid degeneration.

Alcoholism and Kidney Disease.—As a result of a study of four hundred and sixty-eight autopsies, Dr. Herter said that he had arrived at the conclusion that there was no special relation between alcoholism and the small granular kidney, and that alcohol was influential in the production of nephritis with the large rather than with the small kidney. This was in accordance with the findings in autopsies on drunkards, *i.e.*, that the kidneys were usually large and congested. Modern investigation had taught us, the speaker said, that kidney disease was not a local process, but was intimately connected with various diseased conditions of the system as a whole.

SECTION ON GENERAL MEDICINE.

Stated Meeting, October 18, 1898.

LOUIS FAUGÈRES BISHOP, M.D., CHAIRMAN.

The Evolution of Scientific Medicine.—The chairman, DR. LOUIS FAUGÈRES BISHOP, read a paper with this title, as follows:

"The fact cannot longer be ignored that great changes have taken place in the economic relations between physicians and the public. It has long been apparent that as a means of earning a livelihood and of winning a desirable position in a community the profession of medicine does not offer the inducements to us that it offered to our forefathers. It would seem that the work of the average man has become more definite and clearly defined. We have come to do, each of us, some particular branch of our art better than in former times. In other words, the physician and surgeon has become more of an artisan and less of an artist. The artist constructs from his imagination—he idealizes. The artisan performs a definite defined work from carefully drawn plans. Even in departments of medicine that it would seem impossible to render scientific, such as mental diseases, the classification has advanced and recorded experience been accumulated, until even the alienist can work according to rule.

"But the evolution of the profession has also been affected by forces from without. The relation of the physician to the community has been profoundly modified by the general progress of knowledge and the extension of science and learning to so many fields of human activity. The number of professions, in the true sense of the word, has been enormously extended. The management of special commercial enterprises, such as railroads, electric systems, great financial corporations, and manufacturing companies, is no longer intrusted to chance employees, who have acquired skill merely through experience, but is conducted by persons especially trained in engineering and technical science. Professional training has become so diversified that the physician finds himself only one of a great many who are set apart to do a particular work because of special education. In the beginning the trades and business were far removed from science and the systematic improvement which comes through development along the lines of exact observation and inductive reasoning. Medicine also was involved in superstition and supported by authority rather than reason. As time has gone on the conduct of all human affairs—commercial, social, and even religious—has come under the dominion of the scientific tendency of the age which leads to simplification of method and organization of effort. At the same time medicine has thrown off mysticism, secrecy, and reliance upon authority. So the public at large and physicians as a class have come near together, and the physician finds himself one of a large number of specialists and subservient to much the same laws as the others. As a laborer, he must find a market like his friends, the electric engineer, and the rest, and must be governed by the same laws of fitness, supply, and demand. Pressure of circumstances will compel him more and more to conduct the business side of his work in conformity with scientific business methods. In fact, to be unbusiness-like is to controvert the order of the just relations of man to man. Business in its best development is more highly moral than many a system of theology.

"A great disturbing element in the business relations of physicians is philanthropy. The physician has more opportunity than others to exercise this faculty, and he also must be acknowledged as having more chances as an individual for gain by the wrongful exercise of the privilege of gratuitous service. He benefits himself but injures the business possibilities of other members of his profession. The same selfish principle is seen in the commercial world when large department stores sell without profit a class of merchandise which they do not care to handle except to induce crowds to come to their bazaar, but which represent the means of livelihood of a large number of small shopkeepers. In this way, for the sake of prestige and experience, the older physician may injure the younger man, as witness the hospital and dispensary abuse. But fortunately philanthropy has not escaped the modern scientific fact that charity must be controlled by fixed principles, and not left solely to the impulse of the emotions. Organization cannot long be deferred. Philanthropy is seeking more and more the guidance of principles and facts developed by scientific method in observation and experiment.

"A suggestion was made by General Sternberg in his address as president of the American Medical Association, that physicians should educate the intelligent public up to the point where it can discriminate between science and charlatanism. His words are so apropos that I cannot do better than to quote them. He says: 'The old saying is that the pen is mightier than the sword. This is, no doubt, true in politics, but in science the pen is a feeble instrument compared with the test tube, the microscope, the chemical balance, etc. Nevertheless I am about to advise well-informed physicians to make greater use of the pen, not for the elucidation of those problems which remain to be solved, but for the purpose of calling the attention of the non-medical portion of the community to the recent achievements of scientific medicine. It is a remarkable and lamentable fact that many persons, belonging to the so-called educated classes, are grossly ignorant as regards the present status of medical science. They not only speak of us as "old-school doctors," but intrust their lives and those of their children to pseudo-scientists, who, taking advantage of popular interest or the great discoveries of the day, make extravagant claims as to the curative power of electricity, the *x*-ray, oxygen, ozone, or some wonderful microscopic destroyer.'

"It is certainly true that a physician can no longer even practise without taking his more intelligent patients into his confidence. A smattering of medical knowledge has become a part of a general education, just as a certain amount of mathematics, astronomy, geography, etc., is a part of the mental furniture of the average thinking and reading man. The dignity of the profession is well maintained when patients are taught that a knowledge of medical facts is common property, that there is some difference in the power of men to observe symptoms, but that the great difference between physicians and between the physician and the layman is in the trained judgment which determines the relative importance of facts and the quantity, time, and character of treatment.

"The tendency in America is to give up all sects in medicine and allow physicians to choose their professional associates purely on the ground of integrity and personal preference. This liberal and scientific spirit has found its chief growth in New York State, with the result that the controversial side of medicine has been abandoned for the scientific. New York may well be regarded as the centre of influence of a modern school of scientific medicine, and a monument has already been raised to it, in the amount of good work in investigation and analysis which has been done. The modern school of scientific medicine relies for its recognition and support upon a public educated in modern philosophy, a public dominated by the scientific spirit of a scientific age. It claims as an advantage that medical knowledge should be open to any curi-

ous seeker, and that many medical facts should be of the common knowledge of the people. The public has already acquired that little knowledge which is so dangerous. It will not give it up. Our only salvation is to go boldly forward and educate the masses to a point where they themselves can discriminate between knowledge and imposition. The enemies of medicine have already entered upon a flank movement, and the newspapers are blackened with advertisements of serums, extracts of organs, and germ killers, some of which assume the names of great discoverers. This movement of charlatanism was only to be expected, and must be met by training the people to distinguish between science and fraud.

"The Academy of Medicine has played its part in justifying medical knowledge and disseminating medical truth, but it cannot rest on its oars. The conclusions of the discussions of yesterday have become the actual practice of to-day, and it must move on constantly to new fields, or must recultivate old fields which have for a time lain fallow. Medical truth can never be attained, but must be constantly sought. It would seem that unconsciously and with many forebodings of evil the profession has worked up to a more scientific plane in the broadest meaning of that term. In the process—as has ever been the case in progress—many old idols have been shattered and the discipline of newly recognized laws has had to be learned."

The Relation of Chemistry to Practical Medicine and Some of the Methods Available in the Daily Work of Physicians.—Prof. R. H. Chittenden, professor of physiological chemistry in Yale University, read this paper. Twenty years ago physiological chemistry had only commenced to occupy a proper place in the scheme of medical studies, when the first independent laboratory had been established in the Strasbourg University under German *régime*. Every new fact that had been brought to light in the laboratory had contributed something to that fund of knowledge which had been of practical value to the general practitioner. A widespread advance in the application of chemistry, physiology, and pathology had been noted in the past twenty years, and the speaker believed that the most important advances in scientific medicine for the next twenty years would be along chemical lines. The micro-organisms were not directly responsible for the ills which they produce; the characteristic symptoms were but the outward manifestations of the physiological action of the specific substances produced by the growth and multiplication of these micro-organisms within the tissues of the body. We now knew that the Loeffler bacillus produced a soluble poisonous substance of a proteid nature, which, when injected, gave rise to the characteristic symptoms of diphtheria, followed by death. Combined chemical and physiological study had made possible the production of an antitoxin which owed its antidotal action to chemical substances. On the strength of Ehrlich's researches it was assumed that the diphtheria toxin was a single definite compound with definite physiological and antitoxic properties only at its origin; in reality it was an unstable substance and there were great variations in the neutralizing power of a fatal dose in different toxins. Toxins readily underwent deterioration. Chemical study had shown that the growth of micro-organisms, both pathogenic and non-pathogenic, was attended by the development of proteolytic enzymes, which were responsible for the soluble proteid products resulting. It was now known that wherever micro-organisms grew the most prominent products which resulted were albumoses or proteoses, akin to those formed by the proteolytic enzymes of the digestive juices. These latter products were quite toxic when introduced into the blood current. Further, when the soluble products of digestion were introduced into the blood current they were rapidly eliminated through the kidneys, just as other poisons were. The point which the speaker wished to emphasize was that in the decomposition of proteids by an ordinary digestive fluid enzyme we had to deal with a progressive hydrolytic cleavage, in which the first-formed products (primary proteoses) were transformed into secondary products (secondary proteoses) and these finally into true peptones. The primary products were much more active than the secondary products, as a rule. The speaker then proceeded to call attention to the many arguments which supported the view that in the zymolysis produced by many pathogenic micro-organisms we had to do with a corresponding hydrolytic cleavage with consequent formation of a now more or less toxic substance, the one formed from the other by successive hydration and accompanied by corresponding changes in toxicity or physiological power. He made the statement that all pathogenic bacteria produced a row of chemical substances endowed with more or less toxic power, and these were chiefly responsible for the characteristic symptoms of a disease. There was clear evidence of the existence of a row of chemical substances elaborated by the several ductless glands, which exercised, as the secretions from the thyroid, a controlling influence over the nutritional processes of the body, either counteracting, or, more likely preventing the formation of toxic substances of great power. To-day we obtained from the thyroidal tissue a specific substance, the iodothyrin, characterized by its containing iodine and being marked with certain physiological properties. In the suprarenals, chemical work had given evidence of the presence of a basic substance, a pyridin base or alkaloid, upon which well-known blood-pressure-raising powers depended. Internal secretions from the hypophysis cerebri, ovaries, testicles, etc., contained chemical substances of undoubted physiological power.

The speaker then referred to the practical value to the physician of the chemical study of food, urine, and fæces, and its bearing upon the general problem of nutrition. He spoke also of the quantitative analysis of the urine and fæces, as well as of the food, with a view to ascertaining the true nutritive value of the latter and the extent of proteid and other forms of metabolism; the data thus obtained would, he said, prove of inestimable value in many questionable cases and afford a basis for accurate diagnosis. The fact that our markets were flooded with food preparations showed how little thought was given to the exact nature and composition of food. He believed that the time would soon come when as much care would be given to this matter as was now given to the remedies prescribed. The chief problem in the determination of the nutritive value of food centred around the proteid or albuminous foods; this required only a determination of the amount of nitrogen. The method of Kjeldahl was readily applicable and yielded accurate results. These matters must, sooner or later, demand the attention of the conscientious practitioner.

Much could be learned in studying the different forms in which nitrogen was eliminated through the urine. To determine with any accuracy whether uric acid was being excreted in large or small quantities, the quantitative method of Hopkins was sufficient for clinical purposes. Uric acid had an origin quite independent of urea. Kossel had pointed out that true nuclein was characterized by yielding on decomposition a row of xanthin bases, all of which contained an alloxin group and a urea group. Uric acid was an alloxin body. The feeding of nuclein-containing foods tended to increase very markedly the output of uric acid. The continued excretion of uric acid during prolonged fasting was mainly due to katabolism of the nuclein-holding cells of the organism. In leu-

kæmia the great increase in the excretion of uric acid was undoubtedly due to the destruction of leucocytes rich in nuclein. For the determination of urea, one should remember that the sodium hypobromite decomposed not only urea but also the other nitrogenous constituents; for clinical purposes, however, this error was not prohibitive, since the object was to obtain the nitrogenous waste.

Very little was known about creatinin aside from the fact that it was increased with a meat diet and decreased with a milk diet and one rich in vegetable matter.

Leucin and tyrosin appeared in the urine as purely pathological constituents. These were the normal products of pancreatic digestion. In the urine they were supposed to be pathognomonic of acute yellow atrophy of the liver; to prove this to be fallacious the speaker cited an instance occurring in his own family in which these substances appeared without being dependent upon this disease. He did not believe the presence of leucin and tyrosin in the urine to be a proof, or indication even, of this disease. He saw no reason why leucin and tyrosin could not appear in the urine whenever the functional activity of the liver cells was interfered with, especially when it was noted that leucin and perhaps tyrosin were antecedent stages in the formation of urea. He recommended a careful examination of the urine for these substances in severe cases of jaundice.

The detection of melanin in the urine was no positive proof of the existence of a melanotic tumor. Melanins were the products of the transformation of proteids. Urines which tended to become dark or black on standing were always open to the suspicion of containing melanogen, which on oxidation gave rise to the dark pigment, melanin.

Ehrlich's or the diazo reaction was originally thought to be pathognomonic of typhoid fever. The speaker believed that when properly tried and with sufficient experience, it had considerable clinical value. The chemogen, which was the cause of the reaction, was met with in other febrile diseases, notably in pulmonary tuberculosis. Simon was quoted as stating: "While the reaction may be observed in other diseases as well as in typhoid fever, it is usually not difficult to distinguish between these and the latter condition except in certain cases of acute miliary tuberculosis. As the reaction, however, is obtained not later than the twenty-second day of the disease, and is usually present as early as the fifth or sixth day in typhoid fever, and while it generally does not appear earlier than the beginning of the third week and then persists almost to the end in acute tuberculosis, its occurrence may be of decided value in diagnosis in many instances."

Indican took first rank, the speaker said, among the normal chemogens of the urine. It was the product of oxidation of the indol formed in intestinal putrefaction. He believed that micro-organisms in the intestinal tract were solely responsible for the formation of indol and its ultimate appearance in the urine as indican. Therefore, the amount of indican to be detected in the urine might be taken as an indication of the extent of intestinal putrefaction, and indirectly as to the acidity of the gastric juice. Indicanuria was almost invariably observed in all cases in which there was hyperacidity of the gastric juice. Skatotyl, coming from the oxidation of skatol, phenol, and paracresol, might also be used as a measure of the extent of intestinal putrefaction.

Of special significance to the clinician was the presence of acetone and diacetic acid in the urine; these owed their origin to the breaking down of the proteid matter of the tissues, and hence were most conspicuous in those conditions in which inanition was pronounced. In the testing for sugar, *i.e.*, glucose, the speaker laid emphasis upon the advantage of using the Böttger-Almen-Nylander test as well as the Fehling's solution. He thought all physicians should be familiar with the phenyl-hydrazin test for sugar; the test was free from all fallacies and was absolutely reliable. He also referred to the chemical tests for the detection of albumin in the urine. The tests usually applied merely testified to the presence of albuminous matter, without indicating the character of the proteid. He briefly outlined the tests for serum-albumin, serum-globulin, albumoses or proteoses, etc. True peptone was never present in the urine, so-called peptonuria being in reality albumosuria. Gastric digestion was next referred to. This might depend upon increased or decreased secretion of hydrochloric acid, more generally the latter, and sometimes upon decreased secretion of pepsinogen or pepsin. Ewald's test meal furnished another illustration of the intimate relation between chemistry and practical medicine. The determination of total acidity, of the relative proportion of free and combined hydrochloric acid, of the presence of lactic or other organic salts, etc., was now carried out by proper chemical tests; the methods at present available were numerous, but were by no means perfect.

Physiological chemistry and pathological chemistry stood in close touch with physiology and pathology. A full understanding of the normal must be had in order fully to appreciate the significance of the abnormal; the line of demarcation between the two was exceedingly thin and wavy. Chemistry could make clear many of the deviations from the normal, which were the forerunners of disease and death. The speaker hoped for a fuller appreciation of the intimate relation which chemistry bore to scientific medicine and for a more extended usé of the many practical methods which chemistry offered as an aid to diagnosis.

Dr. Beverley Robinson said it was his wish to further scientific research. Laboratories should be established in this city as well as throughout the country. Although he recognized that the best possible work was to be done in laboratories, yet there were limits to the amount of work that could be done. At the College of Physicians and Surgeons the student, unless he had had previous training, must acquire a knowledge of chemistry in the first two years. The speaker recognized the importance of this subject, but thought that there were other things in college that should receive more attention; exercise, for instance. The general practitioner of to-day was too busy in his efforts to provide for his family to undertake the tests mentioned by Dr. Chittenden. There was a limit to the amount of baggage that the practising physician could carry; unless a man was an anchorite or a hermit he could not learn all these things. He believed the solution rested in the endowment of laboratories in hospitals; this was the best possible way to provide for the learning of these sciences, which were so important and most essential for the advancement and practice of our art. Great credit was due to the man who gave money enough to equip hospitals so that young men could carry on laboratory research. He did not believe there was any direction in which money could be more profitably expended than in the acquisition of a thorough knowledge of chemistry.

Dr. William H. Thomson said that the great subject of infection had become a chemical one. He referred to the problems that had confronted the profession in regard to the contagium vivum, and its effect when introduced into the system. As soon as it was thought that the symptoms were due to the growth of germ life with the development of toxins, then the subject fell into the domain of chemistry almost exclusively. Vital

chemistry was to organic chemistry as complex as organic chemistry was to inorganic chemistry. Dr. Chittenden had entered upon the subject of urine analysis and the methods of discovering certain ingredients in the urine; the speaker asked if the doctor could promise that chemistry would come to our aid in answering questions connected with uræmia. He had failed to receive a single point on this subject. There was nothing that so frenzied him as that vicious organ, the kidney. We might remove from two-thirds to three-fourths of that organ and the remainder would pass more urine and more urea than before; but we were apt to have rapid emaciation and death from solution of muscular tissues. How was it explained? Again, he asked how one could explain cases in which there was a disorganization of the kidneys and yet not a drop of urine was sent into the bladder. A patient had had a previous impaction of calculus in one kidney; he had a calculus impacted in his remaining kidney; how was he going to die? The speaker had been called into consultation and informed his questioners that the patient would die with symptoms of uræmia. There was no coma and the patient died from pure asthenia. If the ureters of animals were tied they did not die with symptoms of uræmia. These were no small questions, and it was to be hoped that chemistry would render aid in solving them. Pale urine occurred in subjects of nervous disorders, such as hysteria, neurasthenia, etc.; yet cases had occurred in which there was marked textural change in the kidney and here there was pale urine with low specific gravity. He had seen this day a patient with pale urine, of good specific gravity, whom he had watched for several years for uræmic symptoms; there was no albumin and the last specimen showed a specific gravity of 1.025. In diabetes, pale urine he regarded as a danger signal. He asked how we could explain intermittent functional disease, with the sudden nervous explosions and convulsive attacks. In epilepsy and migraine no one could predict when an attack was going to occur. There was no neurologist who could go into company in the evening, and predict that the vivacious lady talking to him would soon be seized with one of these attacks. There were many men going about with kidney disease, carrying on their business, who did not know when convulsions might seize them, because there was no warning. All this, the speaker thought, pointed to toxic origin. To chemistry we must look for an explanation. The speaker had found hydrochloric acid in ulcer of the stomach, occurring in a young woman. He had found it present at times and absent at other times in this disease. In typhoid fever the absence of pepsin was almost invariable if it had run for twenty days. He was much gratified at the emphasis made by Dr. Chittenden in regard to indicanuria. Indican in the urine he considered a danger signal.

Dr. Morris Manges spoke of the diseases of the stomach in relation to chemistry. There was no organ in the body more indebted to chemistry than the stomach. He thought the ordinary analysis of the stomach contents was within the grasp of every one, and that such analyses should be more frequently made, not so much to learn about the acids present, but to learn more about the ferment, pepsin. In typhoid fever he had found pepsin present. If pepsin was to be given he advised giving it in large doses by itself, or in combination with sugar. If it be given with hydrochloric acid, it showed that we had forgotten our chemistry, since hydrochloric acid rendered pepsin absolutely inert. Elixirs of pepsin were also inert. There was no such thing as a specialty in diseases of the stomach any more than there was in diseases of the heart, lungs, or kidneys. He thought that if, in schools, the student should devote as much time to test-tube reactions as he did to the relations of arteries and the course of nerves, we would have more practical physicians and better practitioners.

Dr. A. Rose thought the chemistry of respiration should be studied more. It was well known that the inhalation of CO_2 gas would relieve most of the symptoms of phthisis. There was less cough, the fever was reduced, and the patient's condition was bettered. How was that to be explained? If one inflated the rectum with CO_2 gas, this gas was eliminated through the lungs according to the law of diffusion of gases; more CO_2 was eliminated, more O was introduced. This interchange of gases took place in the alveoli in the lungs, being independent of respiration but governed according to the law already referred to. The final result of introducing CO_2 gas was to improve the nourishment of the body. The speaker had experimented with CO_2 gas in a young girl, sixteen years of age, who was a sufferer from chlorosis. Knowing the effect of CO_2 gas, he induced her to use it by inflation of the rectum. For years she had suffered greatly from insomnia, but under this treatment she recovered.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Abstract of the Proceedings of the Twenty-Fourth Annual Meeting, Held at Nashville, Tenn., October 11, 12, 13, and 14, 1898.

(Concluded from page 639.)

Second Day—Wednesday, October 12th.

The Importance of Early Diagnosis in Surgical Cases.—Dr. J. C. Morfit, of St. Louis, Mo., read a paper on this subject. The diagnosis of a disease ought to be the most attractive feature in the practice of medicine or surgery. It was the foundation on which any plan of treatment was applied. The physician should promptly and exhaustively weigh every indication of cause and effect and apply his therapy accordingly. The speaker had recently seen two cases of pyosalpinx which were cured by surgical interference. Each case had been treated by a good practitioner, yet in neither had there been a complete physical examination, and consequently the real trouble was not detected. One was treated for indefinite inflammation of the bowels, the other for malaria. He cited these cases to emphasize the duty of the physician to himself and his patients of utilizing every available means to arrive at an early and positive decision as to what he was treating.

Gonangiectomy and Orchidectomy for Hypertrophied Prostate in the Aged.—An excellent paper on this subject was read by Dr. George W. Johnson, of Dunning, Ill., in which he reported five cases, and made a second report on twenty-eight cases previously recorded. After referring at length to the literature of the subject and reporting his cases in detail, Dr. Johnson arrived at the following conclusions: (1) All cases of prostatic hypertrophy should be given at least two weeks of palliative treatment, with rest in bed. This treatment should be regulated according to the conditions. (2) If no relief was had from this line of treatment, a thorough and systematic examination should be made for vesical calculi and polypi, as well as structural and malignant disease of the prostate and bladder. Cystitis, acute prostatitis, and prostatic abscess should always be borne in mind. The urine should be frequently examined. In cases of cystitis the ureters should be catheterized to determine the condition of the kidneys. This could now be easily done by the Harris instrument. If by digital examination per rectum the prostate was found to be en-

larged, its approximate dimensions should be noted and urethral measurements taken. The patient should then be as well prepared as possible for operation. Having decided upon operative interference, the operator alone must decide upon what operation he will do. Gonangiectomy or orchidectomy offered less risk to life. (3) Chloroform should be used, as it required less time and was not so irritating to the kidneys. The operation should consume as little time as possible. Gonangiectomy or orchidectomy could be done quicker and with less shock than any other operation. Strict attention should be given to the after-treatment. (4) The time for relief after operation was irregular. In the speaker's experience the relief had not been so clearly defined as to hours and days, or so immediate as in most cases reported. In but two cases had the catheter been required after operation. Enuresis was constantly present in his cases for from one to six weeks after operation. (5) More immediate relief was given to cases of orchidectomy, and the prostate grew softer and diminished more rapidly in such cases than when gonangiectomy was done. (6) The kidneys should be carefully watched and supported after operation. Mental symptoms appeared in three of his cases, two of which were due to renal disease. (7) Long-standing and troublesome herniæ could be successfully treated in the aged. He had successfully treated eighty-four such cases, in none of which had a recurrence taken place up to this time. Of this number he had encountered the condition of congenital with acquired hernia in six cases. In five of the cases the acquired sac was outside of the congenital one. In one case it was within it. (8) Bassini's operation was resorted to in all but five cases, and in these Fowler's method was used. (9) Cystic degeneration of the testicles was met with in twenty-five cases. These usually had chronic hydrocele also, and were always cases with hernia of long duration. (10) When the intestines occupied the scrotum in a large mass, they were returned to the abdominal cavity three or four days before the operation. In many cases there were adhesions preventing reduction. (11) Examinations were always made for vesical calculus, but none was found. (12) The somatic condition was greatly improved, and when bilateral orchidectomy was done the patients became obese. (13) A thorough line of palliative treatment of from two to six weeks' duration, with rest in bed, was given each patient. (14) In cases of herniotomy the patient was kept in bed from three to five weeks, unless very asthenic, with the hope of getting better organic union and thereby minimizing liability to recurrence.

Third Day—Thursday, October 13th.

Address on Surgery.—Dr. George Ben Johnston, of Richmond, Va., delivered the address on surgery. His subject was "The Progress of Renal Surgery." Renal surgery was altogether a matter of the past three decades, it having had its commencement with the successful nephrectomy performed by Simon in 1869. Dr. Johnston dealt with nephrotomy; floating and movable kidney; renal and ureteral calculi; neoplasms of the kidney; tuberculosis of the kidney, when not a part of a general miliary tuberculosis, which he said might either have its origin in the kidney or be an ascending affection from the bladder. Hydronephrosis also received attention. He made no attempt to arrive with anything approaching completeness at the progress or present status of surgery of the kidney. He had endeavored merely to point out some of the advances which had been made in this field of surgery, and to indicate the present views of surgeons upon some of the most important points. Especially did he emphasize the conservatism which had developed along this line, and which now marked the attitude of the surgeon in this as in other branches—a conservatism which realized that the glory of surgery was not in amputation and in mutilation, but in saving important organs.

"Why I Perform Vaginal Ablation in Pelvic Inflammatory Cases."—Dr. William R. Pryor, of New York City, stated that when he performed hysterectomy in pus cases, he preferred the vaginal route, and gave his reasons. He dealt with the subject under the heads: Incision, separation of adhesions, direction of effort in the enucleation, hemostasis, drainage, hernia, accidents, instruments, narcosis, and time, convalescence, and results. Up to October 1st of this year he had performed vaginal hysterectomy for pelvic inflammatory lesions, exclusive of fibroids and cancer, in eighty cases. Since then he had done the operation a number of times. No patient had died, either from the operation or from complications. He had no fæcal fistulæ to report, no sinuses, no vesico-vaginal fistulæ, and no hernias. There had been no cases of phlebitis and no intestinal obstructions. The vagina had in no case been shortened. (For the technique of the operation he referred the reader to the *American Journal of Obstetrics*, vol. xxxviii., No. 6, 1898.)

A Consideration of the Limit to Operative Gynæcology.—Dr. Shelby C. Carson, of Greensboro, Ala., read this paper. The purpose of the speaker was to emphasize the importance of medical gynæcology; to show that surgery could not advance a legitimate claim even to the larger portion of this great field. A beautiful tribute was paid to this branch of medicine by applying to it the eloquent eulogy of Daniel Webster upon justice. Surgery as a science was pronounced as practically without limit, but as an art it had probably reached the summit. What constituted true surgery was then discussed, the author quoting not only from text-books, but from the latest utterances of such men as Wyeth and Annandale, to prove that surgery, of all other branches, was based upon principles and hedged in by fixed laws; that when these were disregarded there was no true surgery. The folly of the ablation of the ovaries and tubes in many cases was made manifest. The nerve element in woman was closely considered, the anatomical connection between the nervous system and the genitalia being defined. As a consequence of this connection, neurasthenia was frequent, for which surgery afforded no relief.

The Therapeutic Value of Leaving Large Quantities of Decinormal Salt Solution in the Abdomen.—The author of this paper was Dr. J. Wesley Bovee, of Washington, D. C. He reported six cases to illustrate the usefulness of this procedure. In a number of cases the effect was not so marked, and in a few but little benefit was apparent. The first case was one of papillomatous broad-ligament cyst; with fifteen litres of decinormal salt solution left in the abdomen there was marked increase of urine. In Case 2, large multiple uterine fibroma and large ventral hernia, a secondary operation, three litres of decinormal salt solution in the abdominal cavity and one litre under the breast produced a marked urinary increase. In Case 3, papillomatous fibro-adeno-cystoma of the right broad ligament, eight litres of decinormal salt solution was left in the abdomen; there was considerable urinary increase. In Case 4, multilocular ovarian cyst, five thousand cubic centimetres of decinormal salt solution was left in the abdomen; there was increased excretion of urine. In Case 5, multiple fibroma of the uterus and pelvic adhesions, with great shock, two litres of decinormal salt solution left in the abdomen increased the urinary excretion. In Case 6, multilocular chondro-cystoma of the left ovary, seven litres of decinormal salt solution was left in the abdomen, and the urinary excretion nearly doubled during

the following six days. The marked stimulating effect of the solution on the kidneys was noticeable in all these cases. Penrose had found that the average amount of urine excreted during the first twenty-four hours after operation in one hundred cases was 13.4 oz.; for the second, 14.6 oz.; and for the third, 19.8 oz. He also found that for the first day the maximum amount of urine was 27 oz. In many of the cases of the essayist this maximum was much more than doubled. While the number of cases in which he had used these large quantities of decinormal salt solution was small, the effect should encourage a further application of the remedy in proper cases. Not one evil effect of the solution was observed in any of the cases.

A Plea for Pelvic Cellulitis and Peritonitis.—Dr. F. F. Bryan, of Georgetown, Ky., read a paper with this title. He reported twenty cases, and drew the following conclusions: (1) Cellulitis and peritonitis were important manifestations, leading to the greatest amount of suffering that woman was heir to. (2) Their recognition and the retention of their nomenclature should keep physicians constantly on the watch for them. (3) Their proper treatment in the early stages would obviate these latter evils to a great extent, as cellulitis and peritonitis were easily curable in the early acute stages. (4) Should opportunity for an early cure not be offered, then the chronic cases should have the medical and minor gynæcological treatment mentioned, under which many would be cured and others obtain relief. A respectable quota would of necessity have to turn to surgery for their cure.

Surgical Treatment of Paralysis in Children.—Dr. Alex. C. Wiener, of Chicago, read this paper. A clear distinction should be made in diagnosis as well as treatment between cerebral and spinal paralyses. A common symptom in both diseases was muscular paralysis, and yet there was a great difference between the two affections. In spastic paralysis one group of muscles became rigid and overpowered its opponents, rendering them overstretched and useless, but still their innervation was by no means disturbed. In spinal paralysis there was a true degeneration of the lower neuron and the dependent muscular groups. This being borne in mind, the treatment was to equalize the balance between the spastic and the overstretched muscular groups by lengthening the rigid muscles. This was accomplished either by tenotomy, resection of tendons, or loosening the attachments of the muscles from the bone, as was done in a spastic condition of the adductor muscles of the pelvis. The after-treatment consisted mainly in not allowing the extremity to leave its overcorrected position too soon, and in strengthening the functionally weakened opponents by massage, baths, and electricity. Apparatus in these cases was utterly useless and should be entirely discarded. Any other peripheral cause of reflex irritation, as phimosis, occlusion of the prepuce, or of the clitoris, of course was to be removed. In anterior poliomyelitis we had to deal with a true paralysis of certain muscular groups. This might be overcome by apparatus which supplanted the paralyzed muscles, or by operative procedures. These consisted in dividing the belly of an active muscle up to the place of its insertion, and sewing the corresponding part of the tendon into the cleft of the tendon belonging to the paralyzed muscle. The inactive muscle was thus supplied with the vigor of the innervated muscle. Care should be taken, as Milliken had pointed out, that the sheath of the tendon was preserved. By this artificial change in the arrangment of muscles the function of one muscle was transmitted to another. There took place an alteration of the reflex activity in the nerve centres of the muscles; hence the importance of the function of the extremity was by no means in its merely mechanical action.

The Diagnosis of Gonorrhœa in Women.—Dr. Joseph Rilus Eastman, of Indianapolis, read this paper. The diagnosis of this affection in women was comparatively easy, even without the microscope. With a history of impure coitus, free purulent secretion from the vulva, vagina, and urethra, intertrigo, burning on micturition, and vesical tenesmus, the diagnosis was not far to seek. Upon inspection one usually detected a discharge of tenacious pus, or greenish or yellowish streaks upon the linen might alone be in evidence. The symptoms of gonorrhœa in women were dwelt upon at great length. The gonococcus grew fat upon flat epithelium. A comprehensive examination of the discharge was not complete until the secretions of the urethra, Skene's lacunæ, the glands of Bartholin, the vagina and cervix had been searched through; and in chronic cases several preparations should be made from each of these. To secure unmixed gonorrhœal pus from the cervix uteri, care should be taken that the platinum wire did not come in contact with the vagina. It was best first to rinse and then dry the vagina with cotton, to free it from mucus. It would be concluded after many examinations for gonococci that the urethra was the seat of predilection of gonorrhœa in women, and that the vulvitis and vaginitis were secondary, being caused by the bathing of these parts with the discharge from the urethra and cervix. The diagnosis of acute gonorrhœa might be made by contemplation of the clinical phenomena alone. For example, if acute urethritis was present, it was almost certain that the gonococcus was to blame. Observation for a few days would establish the diagnosis beyond conjecture, since the symptoms of non-specific urethritis would disappear rapidly. In chronic gonorrhœa too much dependence upon clinical manifestations was hazardous. Condylomata were often present, but appeared also often independently of gonorrhœa. Débris-laden discharge from the vulvo-vaginal glands was usually an expression of old gonorrhœa, but other germs, as the staphylococcus aureus and saprophytic forms, might occasion just such a discharge. Among the more common indications of chronic gonorrhœa were the maculæ gonorrhoicæ of Sänger, red papules about the openings of the vulvo-vaginal glands, sclerotic inflammation of these glands (in which the glands were felt as hard, non-sensitive nodules, under the examining finger), cysts of these glands, and scars and erosions in the vulva. All of these conditions might be caused by other germs than gonococci. Here, as in acute gonorrhœa, the most reliable indication was the urethritis.

Posterior Displacements of the Uterus.—Dr. A. M. Cartledge, of Louisville, read this paper, in which he dealt with the subject from a clinical standpoint. He discussed the causes, symptoms, and diagnosis of these displacements. Treatment should be divided into measures which corrected the cause and methods of support by suturing and shortening the round ligaments. Sometimes it was necessary to employ both methods in the same individual, in order to make the result durable. In the first category were to be included thorough curettage, repair of cervical lacerations if present, perineorrhaphy and restoration of the pelvic floor, with the use of tonics, laxatives, and rest. These methods, if carried out persistently, would ultimately relieve the vast majority of posterior displacements. They were not so dramatic or sudden in their relief as ventro-fixation and the Alexander operation, but were more in accord with rational ideas. In order to succeed they required time—six to eight months—for the structures to resume their normal tone. They also usually required to be supplemented during some weeks or months following their performance by anterior and posterior tamponade, or a well-fitting pessary should be employed to hold the uterus in position

until the repaired parts regained their strength. It was irrational surgery to use any form of support until existing causes had been as far as possible removed. As between ventro-fixation, vagino-fixation, and the Alexander operation, preference should be given the latter, if no accompanying disease was suspected. When such disease existed the operation of ventro-fixation should be practised, as it gave opportunity for inspection and correction of the pelvic disease. It was the best operation in all cases of adherent uteri.

Some Phases of Intestinal Obstruction.—Dr. A. H. Cordier, of Kansas City, Mo., followed with this paper. The causes of this condition were many and varied. Modern methods of diagnosis in skilled hands had led to the saving of many lives, which, heretofore, would have been lost by delay in resorting to the proper treatment. While the diagnosis of intestinal obstruction could usually be made early, there were some cases in which the pathological manifestations were so insidious or vague that their detection required time and much careful clinical analysis. The symptoms of intestinal obstruction were thoroughly outlined. The speaker said that the falsehoods uttered by pain and the truths left untold by opium had been very expensive to human life in the management of intestinal obstruction. Surgical treatment for the relief of this condition should be resorted to early. It should be thorough and quick. No protracted delays or chronic surgery should enter into the management of an acute intestinal strangulation, as these cases stood prolonged anæsthesia and slow surgery badly.

Dr. F. F. Lawrence, of Columbus, Ohio, followed with a contribution entitled "Essentials to Success in Abdominal Surgery."

The Surgical Treatment of Exophthalmic Goitre.—Dr. Bayard Holmes, of Chicago, read a very interesting paper with this title. He said the surgical treatment was based on the theory that in this disease the direct morbid factor was an increase in the normal excretion of the thyroid gland. He gave a synopsis of the physiology and pathology and an outline of the embryology of the thyroid, and also reported a case in which he had operated, the results in which were a very powerful argument in favor of surgery in dealing with this affection.

Some Forms of Gangrene and their Treatment.—Dr. J. S. Nowlin, of Shelbyville, Tenn., read this paper. The term gangrene meant death of a part, and was applied to the soft tissues. The blood was always involved in this disease. If the blood was performing its functions, there could be no local death. The blood channels being destroyed, gangrene necessarily followed. Gangrene appeared sometimes suddenly after injuries to the spinal cord. A normal functional activity in the blood prevented the first step in the process of inflammation. Simple endarteritis might be the cause of gangrene; an inflamed artery was then surcharged with blood, stasis resulted, coagulation took place, the lumen was destroyed to a certain extent, and gangrene resulted. Sepsis was doubtless a most frequent cause of gangrene in the extremities. In traumatic gangrene the surgeon should look out for sepsis. If there was a simple endarteritis with tissue formation, amputation should be performed at the first evidence of failing vitality.

Fourth Day—Friday, October 14th.

Diphtheria and its Logical Treatment.—Dr. A. M. Osness, of Dayton, Ohio, contributed a paper on this subject. He said that the pathological process in diphtheria was caused by the serum albumin at the point of infection becoming modified from incorporation with the specific virus. It was then repudiated by the blood stream and exuded into the neighboring tissues, where it, plus necrotic cells and fibrin, formed the pseudo-membrane, a congenial nidus for the Klebs-Loeffler bacillus. The intoxication of the system depended upon the energy of the lymphatics, upon which devolved the removal of the exudate. In the treatment the use of antitoxin serum offered the risk of over-toxicity, from additional toxin or systemic impairment, and from invalidation of the centres; monosulphide of calcium had been given in three-quarter grain doses every half-hour for a period of thirty-six hours to children, with the best of results. Water should be taken internally quite freely to help elimination of the toxin, local swabbing being resorted to as well, with a mixture such as the physician should deem necessary.

The Early Diagnosis of Diphtheria.—Dr. William K. Jaques, of Chicago, followed with an excellent contribution on this topic. He said that outside of laryngeal complications the mortality from diphtheria was due to the toxin produced by the Klebs-Loeffler bacillus. No physician could successfully treat diphtheria unless he understood the nature of this toxin, how it was produced, and how the cells might be fortified against its destructive action. He must understand that the Klebs-Loeffler bacillus was a distinct living entity or vegetable organism; that one of the products of its existence was diphtheria toxin, just as the result of the life of the yeast plant was alcohol. To appreciate the danger of his patient, a physician must understand the rapidity with which these bacilli multiply under favorable conditions. The clinical symptoms manifesting their residence might give no indication as to the rapidity with which the fatal amount of toxin was being produced. It being understood that toxin was a product of these germs, their multiplication meant an increased amount of toxin, which soon reached the fatal point unless checked by the use of antitoxin. This demonstrated the importance of a physician knowing at the earliest possible moment what germs were present in an angina. In order to ascertain the value of direct diagnosis, by which was meant the examination of material taken directly from the infected area without waiting for incubation, the Chicago health department had introduced the following culture outfit for the use of physicians: A sterilized swab was placed in a glass tube; a slide carefully wrapped in paper was placed with this in an envelope, together with a culture box and directions for using the same. Physicians were requested to inoculate the swab from the inflamed site, spread a little of the mucus upon the slide and allow it to dry. The culture medium was inoculated from the same swab and it was returned to the glass tube. The whole outfit was then to be sent to the nearest incubator station or laboratory. When no antiseptic treatment had been administered before the culture was taken, and the disease manifested malignancy by stupor, hoarseness, or swelling of the cervical glands, it had been possible in about fifty per cent. of the cases to find sufficient bacilli to warrant a diagnosis of diphtheria, even before any trace of membrane was visible. When it had been possible to get a small portion of membrane to spread on the slide, there had been no difficulty whatever in about seventy-five per cent. of the cases in making a direct diagnosis. In the malignant form of diphtheria nearly fifty per cent. of the cases were fatal unless proper treatment was administered. Any physician who neglected to make a correct diagnosis during the time when the remedy was efficacious, *i.e.*, during the first two or three days, was responsible for the result. The technique of bacterial diagnosis of diphtheria was simple. The entire outfit for this work might be obtained for less than $100. The essentials might be acquired at home by any physician who was willing to devote no more than his leisure moments to it. To demonstrate the protective value of antitoxin, the following experiment had been

conducted: On October 10th, in the presence of Dr. F. W. Reilly, assistant health commissioner of Chicago, Dr. Wynekoop, assistant bacteriologist, the essayist, and Dr. Adolph Gehrmann injected nine guinea-pigs with four times the fatal doses of diphtheria toxin. The first three animals had been immunized two days previously by the injection in each of one-tenth of a cubic centimetre of antitoxin. The next three received two-tenths of a cubic centimetre of the same antitoxin each, following the injection of toxin. The third three had no treatment whatever after the injection of the toxin. The pigs were correctly labelled as to condition. They presented decided effects upon the fourth day. All pigs that received antitoxin were alive and apparently well. Of the three not protected, two were dead. The third three being still alive would indicate the possession of natural immunity against the toxin.

Pichi.—Dr. H. W. Whittaker, of Columbus, Ohio, read a paper on the therapeutic uses of pichi. In Chile, South America, pichi, he said, was found growing in abundance as a shrub. No doubt the active principle of the drug resided in the balsamic resin, but chemical examinations had so far been unsatisfactory in determining its chemical composition. The annoying symptoms of chronic cystitis with enlarged prostate yielded to the action of pichi, as was illustrated by the citation of a case. Cystitis complicating specific urethral infection, involving the prostatic urethra, was a combination which under favoring circumstances did not readily respond to treatment, and yet under the influence of this drug the conditions became more tolerable. This remedy was indicated in all of the various forms of diseases of the liver. In gallstones, pichi had proven a valuable remedy in assisting the secretion of bile and theoretically aiding the discharge of the stones. Uric-acid formations rapidly disappeared from the urine under the corrective influence of this remedy and the general condition of the patient improved.

Dr. J. H. Carstens, of Detroit, reported a case of rupture of the body of the uterus during confinement.

A Few Practical Points in the Treatment of Posterior Urethritis.—This paper was read by Dr. A. Ravogli, of Cincinnati, Ohio. The author recapitulated the principles of the treatment for this disease. (1) Irrigations with the Janet method in a recent case of gonorrhœa would in many cases prevent posterior urethritis. (2) Irrigation with the recurrent catheter with permanganate of potassium, followed by injections of protargol, would cure in a relatively short time a case of subacute posterior urethritis without complications. (3) When chronic posterior urethritis had lasted for a long time, and had caused infiltration of the submucous tissues, then the application of a sound with ichthyol salve gave the best results.

Dr. F. E. Kelly, of Lamoille, Ill., read a paper on varicocele. The author outlined the operation for radical cure and the indications for its performance. He considered Bennett's operation of resection of the veins and shortening of the spermatic cord the ideal radical procedure, which he described in detail.

Dr. R. A. Bate, of Louisville, read a paper entitled "The Arthritic Diathesis." The term diathesis was applied to an inherited predisposition to altered nutrition. He assumed in diathesis an inability on the part of the cells to produce oxidation. He mentioned the diseases generally conceded to be dependent upon the arthritic diathesis. He stated that he had experienced favorable results from antilithæmic remedies in glycosuria, nasal and bronchial asthma, lithiasis, albuminuria, obesity, eczema, paresis, rheumatism, angina pectoris, recurrent typhlitis, vertigo, biliousness, dyspepsia, neuralgia, and migraine.

A Trilogy of Diseases: Acute Articular Rheumatism, Endocarditis, and Chorea.—Dr. Albert E. Sterne, of Indianapolis, contributed this paper. He advanced considerations concerning the nature of these three affections and of the connection of chorea with manifestly infectious disease, namely, acute articular rheumatism. A case in point was reported. While he could report several instances of chorea associated with both arthritis and heart lesions, this was the only case known to him in which the sequence of this trilogy seemed distinctly connected with a suppurating injury, following a fairly incontestable portal for the invasion of the system by the ordinary pus microbes. If it was admitted that valvular disease was mainly rheumatic, or at least infectious in character, then the list of cases of chorea connected with the diathesis became much greater, inasmuch as from twenty-five to fifty per cent. (Osler) of cardiac patients gave a history of chorea. Looking at the question impartially, it seemed almost imperative to assume an intimate relationship between the three diseases.

Condemnation of Behring's Conduct.—The following preamble and resolutions were offered and unanimously adopted:

"*Whereas*, The general public, the medical profession, and the drug trade of the United States have long suffered extortion at the hands of foreign manufacturers of synthetic remedies; and

"*Whereas*, Our lax and indulgent patent laws bestow a triple monopoly upon the process, the composition, and the name of chemical products for medicinal use, thus excluding every possibility of a healthy competition; and

"*Whereas*, The same evil has been recently disclosed in the domain of biological medicine by the patent granted Prof. Emil Behring and the Hoechst Farbwerke on antidiphtheritic serum—a patent which could not be obtained in Germany, France, England, or Canada; therefore be it

"*Resolved*, By the Mississippi Valley Medical Association, that the seal of its condemnation be placed upon the unethical and unprofessional conduct of Professor Behring; that it is the duty of every member to renounce the use of the Behring serum; and that the American manufacturers who purpose contesting the patent in the courts are entitled to the moral and substantial support of every American practitioner;

"*Resolved*, That an earnest appeal be made to the members of the commission on the revision of our patent and trade-mark laws, appointed by President McKinley, and their assistance invoked for the modification of existing laws and the suppression of prevailing abuses;

"*Resolved*, That a copy of these resolutions be sent to every medical journal in the United States and to the members of said commission, as follows: Hon. Arthur P. Greeley, assistant commissioner of patents, Washington, D. C.; Hon. Peter Grosscup, Chicago; and Mr. Francis Forbes, New York City;

"*Resolved*, That the members of this society be urged to write their congressional representatives at Washington, and bespeak their support of any measures of relief ultimately proposed by the commission."

Officers.—The following officers were elected for the ensuing year: *President*, Dr. Duncan Eve, Nashville; *First Vice-President*, Dr. A. J. Ochsner, Chicago; *Second Vice-President*, Dr. J. C. Morfit, St. Louis; *Secretary*, Dr. Henry E. Tuley, Louisville, re-elected; *Treasurer*, Dr. Dudley S. Reynolds, Louisville, re-elected.

Chicago was selected as the place for holding the next meeting, the time of which is to be fixed by the committee of arrangements and the executive officers.

Toothache, arising from catching cold, sodium salicylate, gr. xv. every four hours.—Frederick C. Coley.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending October 29, 1898:

	Cases.	Deaths.
Tuberculosis	217	154
Typhoid fever	73	23
Scarlet fever	108	6
Measles	57	1
Diphtheria	132	18
Laryngeal diphtheria (croup)	8	9
Cerebro-spinal meningitis	0	6
Yellow fever	1	0

In the Klondike.—American physicians, it is said, are being debarred from practice in Dawson, and one is reported to have been arrested. There would seem, however, to be plenty of work for medical men, since typhoid is quite prevalent and the two hospitals are overcrowded.

Heredity and Disease.—Dr. Harry Campbell (London *Lancet*, September 10th), in an essay on the "Marriage of the Unfit," says: "I maintain that all diseases are hereditary; you cannot eliminate the influence of heredity from any disease, and I will prove it. What is disease? It is abnormal life. And what is life? It consists of an interaction between the individual and his environment. Therefore disease is an abnormal interaction between the two. It follows that you cannot possibly eliminate the part played by the individual from the causation of any disease, since it is his structure which determines whether he shall or shall not react abnormally to a given environment Now his structure is essentially determined by heredity. I have therefore proved my point. This is no mere logical quibbling, but a practical fact. I will test my position by taking a disease with which most people will probably say heredity has nothing at all to do—the wheal caused by flea bite. This affection depends upon the morbid interaction of the host and the specific environment constituted by the poison with which the parasite inoculates him. As every one knows, the liability to be flea bitten and the tendency to suffer from wheals when thus bitten differ greatly in different individuals. Some suffer little or not at all in this way; others grievously. Upon what does this difference depend? It depends upon differences in the organization or structure of the host, and these differences are essentially determined by heredity. Hence all parasitic diseases, from a flea bite to pulmonary consumption, from typhoid to malignant tumor, are hereditary. Such diseases depend upon defect in the organism as regards some specific environment; but others, such as chronic Bright's disease, diabetes, ovarian cyst, strangulated hernia, may occur independently of any specific environment, and it is obvious that these are, *a fortiori*, hereditary.

Aphasia in Relation to Testamentary Psychology.—Dr. William Elder (*British Medical Journal*, September 3d), in a discussion on this subject at the sixty-sixth annual meeting of the British Medical Association, drew the following conclusions: (1) That organic diseases of the brain may render a patient incapable of making a will, and that some form of aphasia may be produced also as one of the symptoms of the organic disease. (2) That some forms of aphasia may render a patient incapable of will making. (3) That auditory aphasia, if at all well marked, incapacitates a patient from will making. (4) That some other forms of aphasia, such as pictorial word blindness, pictorial motor aphasia, and graphic aphasia, may render a patient incapable of making a will, not necessarily from his being mentally incapable, but from the difficulty of carrying out the legal formalities. (5) That these difficulties in carrying out the legal formalities necessarily vary according to the law of the particular country. (6) That in simple uncomplicated cases of infrapictorial auditory, infrapictorial visual, and infrapictorial motor aphasia, the subjects are capable of valid will making.

Suicides, which have been rather frequent of late among returned soldiers, are attributed in some quarters to overdosing with quinine and other drugs. Perhaps a quack remedy, which is being widely advertised as recommended by Miss Clara Barton, may have something to do with it. We trust her published letter in relation to her use of this nostrum among the soldiers is a forgery.

Long-Distance Diagnosis.—Brilliant as is the accomplishment of making a diagnosis across the room or at first glance, the process is not always a safe one. According to the *Lyon Médicale*, Professor Renaut recently had occasion to pay a visit to a pharmacist, on a matter of substitution in a prescription the professor had written and said he would like to see him privately. The druggist invited his visitor, who was unknown to him, to enter his private office, and when closetted said to him with a smile: "I know why you have come to consult me; it is because of a *chaudepisse* which has gone down into the testicle. I saw it at once by the way you got out of your carriage."

Dreams.—Dr. A. Pilcz, in a very interesting psychological article, concludes as follows: (1) A periodicity in the intensity of dreams cannot be demonstrated. (2) There exists a relation between the subject of the dream and the intensity of the sleep, in this sense, that the deepest sleep is dreamless, or brings up only such groups of association as took place in the psychical life of the patient at some time long ago, and which in the waking state are more or less forgotten. Memory pictures of recent date, which belong to the actualities of life, are reproduced in dreams in only a minimum of deep sleeps—that is, in restless sleep. (3) This rule also appears to apply to the insane. (4) Chronic insane patients do not dream, as a rule, of the "diseased ideas" which in the waking state are uppermost in their minds.—*Wiener klinische Rundschau*, August 7th.

Embalming Crushed Members.—*Health*, July 30th, is responsible for the following: "A woman, eight and one-half months' pregnant, had her hand crushed in machinery. For several days the hand was plunged for hours at a time in phenicated and disinfected hot water. Then a few whiffs of chloroform were given and the toilet of the hand was accomplished with quantities of very hot water and solutions of sublimate and potassium permanganate, removing the loose projecting fragments of bone. Small squares of soft gauze impregnated with a polyantiseptic salve were carefully fitted into every crevice, covering the hand entirely, and the dressing was completed with a thick layer of cotton and a tight compressing bandage outside of all, to secure anastomosis of the vessels. She then left for a maternity, where she underwent a normal confinement. The embalming dressings were not touched for three weeks, and, when removed, under a thick layer of fœtid, chocolate-colored fluid the wounded surface was found covered with healthy granulations, with the necrosed parts entirely eliminated. An autoplastic operation was performed a week later, which healed rapidly."

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Original Articles.

TECHNIQUE AND USE OF SALINE INFUSIONS.*

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NEW YORK.

SINCE the physiology and pathology of the organism have become better understood there have been frequent attempts to influence its morbid conditions by direct medication of the blood.

In the earlier efforts blood itself was used, and successfully, to combat the anæmia of hemorrhage; but the difficulties attending its use were so many and the dangers so great that it could never come into general use. Milk was tried, but the results were not satisfactory. Although the use of the saline solution by intravenous injection is recorded as early as 1832, it is only since 1878–81 that its value in hemorrhage has been generally recognized. Even now, despite the fact that its wide range of usefulness has been so thoroughly established, it is very seldom employed by the general practitioner. In some quarters the fear is expressed that there will be difficulty in getting the solution to flow into the vein; in others, that some dire evil will result, should even a single bubble of air find its way into the circulation; and, like other remedies thought to be difficult of administration or dangerous in use, it is often delayed until all hope of success is futile.

Methods.—The methods by which the solution is introduced are: (1) the direct (intravascular); (2) the subcutaneous (hypodermoclysis). Under the direct may be included: (1) intra-arterial; (2) intravenous. The technique in the intra-arterial method is practically the same as in the intravenous, except that the solution is injected toward the periphery.

Dawbarn has successfully used a modification of this method, which consists of the injection of the solution into a large artery through an aspiration needle that is thrust directly into the vessel. On account of the danger of sloughing the intra-arterial method is seldom employed. Of the other two methods the intravenous injection has the wider range of usefulness. For direct results, for speed and painlessness of the procedure, it is easily pre-eminent. Furthermore, in toxic conditions when a depurative action is desired, the subcutaneous method is unsatisfactory, owing to the fact that after the tissues have taken up a certain quantity of the solution absorption ceases, for a time at least, and this cessation cannot occur when the solution is introduced directly into the vein.

In advanced cardiac disease, when the additional strain on the heart would be too great, or whenever a sudden rise in the blood pressure is likely to be attended by serious results, the intravenous method is contraindicated, and resort must be had to the other method.

However, if any prejudice exists against a skin incision and when haste is not a factor, the average physician will still prefer the subcutaneous method. For subcutaneous use an aspirating needle, attached to a Davidson syringe filled with the solution, is plunged into the loose connective tissue of the abdominal wall, the axilla, or, in females, under the breast, and the solution pumped in. In lieu of a Davidson syringe, an ordinary fountain syringe, elevated about six feet, will answer. Another valuable appliance, suggested by Dr. H. A. Kelly, is the reversed aspirator, for the use of which the solution is placed in the jar of an ordinary aspirator and air is forced in, displacing the solution. In whichever way the solution is administered subcutaneously, not more than from six to ten ounces can be introduced in one place, and for that reason many punctures are necessary. The pain is not so severe if glycerin or carbolic acid be added to the solution (Mathieu). No accidents appear to have followed this method, as not even an attack of cellulitis is recorded against it.

Inasmuch as the intravenous method is generally regarded by the majority of physicians as a formidable operation, more attention will be given to its details. The apparatus commonly employed in the hospitals of New York for this purpose consists of a glass funnel connected by a piece of rubber tubing, three feet or more in length, to a cannula, about four inches long by one-eighth of an inch in diameter, curved for about an inch at its point, to facilitate its introduction into the vein, and is generally provided with a stopcock.

The method commonly employed is as follows: The forearm is placed in a position of supination. After thorough cleansing of the part, a bandage is tied about the middle of the arm, so as to distend the veins. An incision, an inch long, is made at the bend of the elbow, over the median basilic or cephalic vein, whichever is the more prominent. The incision is carried through the skin and fascia. With a grooved director the fat overlying the vein is torn away and the vein raised from its bed. Two catgut ligatures are next passed beneath the vessel. The distal ligature may now be tied in the lower angle of the wound, but it is better to wait until the vein has been opened, on account of the uncertainty sometimes arising as to whether the vein is really opened. The vessel is opened by a clean-cut longitudinal incision, about three-eighths of an inch in length, and the cannula is inserted about one-half an inch, in the direction of the venous flow. The other ligature is tied closely about the vein and cannula, thereby securing the latter in position; then the bandage is taken off.

When the cannula is removed this last ligature is tightened, and the skin may be united with proper sutures or left to heal by granulation. When it is probable that a second injection will be needed, the tube may be clamped and the cannula allowed to remain, although it would seem that under such conditions clots might form and be forced into the circulation by a subsequent injection. Yet this method has the approval of many eminent surgeons.

A modification of the above method, devised by the writer and practised in a considerable number of cases, certainly has some slight advantage in simplicity and rapidity. It is as follows: The forearm being in posi-

* Read before the New York State Medical Association, October 20, 1898.

tion, cleansed, and a bandage applied above, (1) a short superficial incision is made over the vein; (2) an ordinary uterine tenaculum is quickly worked down alongside of the vein, then turned upward, and after being brought out on the other side of the vessel is left hanging, thereby raising the vein and controlling any excessive hemorrhage during the operation. The vein is immediately incised, and the cannula, through which the solution is dropping, is inserted. When enough of the solution has been injected and the cannula withdrawn, in case a ligature is not to be had, the tenaculum is removed and a compress will control any hemorrhage. By this method it is possible to have the solution entering the vein within thirty seconds. The only instruments requisite are a scalpel and tenaculum (Sims) and a transfusion apparatus.

For the latter purpose a piece of rubber tubing, three feet long, with a douche bag at one end and a cannula, will answer as well as the more elaborate apparatus. In lieu of a cannula an aspirating needle, a goose quill, or, better still, a medicine dropper will answer the purpose. If the action of a stopcock be desired, it may be imitated by allowing the solution to flow for a few seconds, and then clamping the tube with a pair of artery forceps, or by pinching it up with the fingers until the cannula is in the vein. During the infusion the funnel is held about an arm's length above the point of injection; whenever possible, the entire apparatus should be sterilized. At any rate, the cannula should be clean.

The outline of the vein can be made more prominent after the bandage has been applied by alternate flexion and extension of the wrist or elbow. The right arm is preferable, because the veins are a trifle more prominent. When both of the veins mentioned above are too small for the cannula, although such a condition must be very rare indeed, the dissection should be carried an inch or so up along the inner side of the arm, to get the basilic vein, at the same time avoiding any injury to the internal cutaneous nerve, as it crosses at this point. Some surgeons prefer the saphenous vein where it crosses the malleolus. In extreme cases, when the superficial veins cannot be made prominent, the suggestion has been advanced that a transverse incision be made across the forearm and the open vein picked up.

One of the common causes of failure in this simple operation is the neglect to remove the bandage tied about the arm for the purpose of distending the vein. I have known this to happen in several instances and all sorts of reasons, concerning blood pressure, etc., given as the cause of the failure to get the solution to enter the circulation. Another fault is the pushing of the cannula between the coats of the vein. This can best be avoided by a clean incision, about three-eighths of an inch long. A sharp-pointed cannula is very much more likely to cause this result than a blunt-pointed one; and, furthermore, even when such an instrument has entered the lumen, it is apt to make a second puncture. Force should be avoided in the introduction of the cannula, for when the point of the cannula has once entered the lumen of the vessel, unless great disproportion exists between the size of the cannula and the vein, no force is necessary to accomplish its complete introduction. If force appears to be needed, it is more than likely that the point has caught in the tissues of the vessel wall, and that the force exerted, instead of pushing the cannula farther along the lumen of the vein, is tearing the vessel wall and doing damage to the surrounding tissues. In the ordinary method so much time is often spent in adjusting ligatures, etc., after the vein has been raised from its bed and before the cannula is inserted, that the vessel has become partially collapsed and reduced to a mere ribbon. Especially is this result likely to happen if the distal ligature be tied before the venous incision is made.

When this occurs' it is better to cut the vein directly across, tying the distal end. A clamp is next put on, about an inch above, and the vein raised out of its bed for this distance. The proximal end is then lifted up, and after the orifice is distended with a probe the cannula is inserted and the clamp removed. When the superficial incision has once been made, it is advisable that the position of the arm should not change, as there may be trouble in locating the vein again.

Fallacies as to Air, etc.—Contrary to the general opinion, there is very little danger to be feared from the introduction of small quantities of air into the circulation. In several instances I have seen a cannula full of air accidentally introduced, with no evil results. The experiments of Hare, Senn, and others prove the harmlessness of air, beyond the slightest shadow of a doubt. In one instance Hare[2] injected forty cubic centimetres of air into the vein of a dog, so that most of it went directly to the heart, without any evident effect upon the blood pressure. More recently, McClintock[3] has shown that from twelve hundred to fourteen hundred cubic centimetres of air may be introduced into the jugular of a horse and no harm be done. Although, unquestionably, all solutions should be filtered, in at least two instances personally observed small particles of dust, etc., did not occasion any disturbance. A little absorbent cotton in the bottom of the funnel will answer as a filter in an emergency.

Preparation of Solutions.—In the preparation of the solution various additions have been made to the simple salt solution. Some formulæ, as that of Hayem, contain an alkali, with the intention of more nearly approximating the chemical constitution of the blood serum. Others, as that of Ringer, contain in addition a salt of calcium, which is said to have a direct coagulating effect upon the blood.

But Bosc and Vedel,[4] as a result of a series of elaborate experiments with the various solutions used, came to the following conclusions: Distilled water is noxious, even in small quantities. Ordinary water, nontoxic, not very destructive to the red corpuscles, and might be used in an emergency. Simple salt solution, quite innocuous, so long as the quantity of salt does not exceed three times the quantity of sodium chloride normally contained in the blood; artificial serum, not superior to salt solution of seven-tenths per cent. The strength of the solution in general use varies from six-tenths to eight-tenths per cent.

In the preparation of a solution of six-tenths per cent., ninety-two grains of ordinary table salt are added to a quart of water. For ordinary purposes two small teaspoonfuls, not heaped up, will approximate the requisite amount (a small teaspoonful of salt, brushed off with a straight edge, weighs from forty to forty-five grains). The solution, after the addition of the salt, should be boiled and filtered. If it is to be kept for any length of time, it should be protected by cotton plugs, to keep out dust, etc. In hospitals double or quadruple strength solutions are constantly kept on hand, so that the decinormal solution may be quickly prepared by the addition of simple hot water. The temperature of the solution should be about 100° F. It is better that it be a degree or so warmer when put into the funnel, as it will lose about one degree in passing through the tube. An increase of a few degrees is not a matter of consequence, and many surgeons now advocate the use of solutions of 105°–110° F., on account of their stimulating effect. The experiments of Athansin[5] prove that, in animals at least, solutions having a very high temperature, 165°–175° F., can be safely used.

I have found that a solution of approximately the proper strength and temperature may be obtained by

adding a pint of boiling water to a quart of solution containing one hundred and thirty-eight grains, or two large teaspoonfuls of salt, the latter solution being kept at the room temperature, 60°–70° F.

When no account has been kept of the amount of solution injected, it may be useful to remember that under ordinary circumstances it requires about five minutes for a quart of solution to run in.

The quantity requisite ranges from a few ounces to several quarts. The chief guides in any case will be: (1) The return of the pulse with increase in volume and diminution in rate; (2) return of color and facial expression or perhaps consciousness. Rarely more than two pints are needed at one injection, but the injection may be repeated many times on the same patient. Enormous quantities have often been used, and generally with the happiest results. In one case recorded, twelve pints were injected during an operation, and Lejars mentions a case in which twenty-six litres were given in five days. There is very little danger of putting too much of the solution into the circulation, especially so in the anæmia following severe hemorrhage. Derske and Faye showed that an amount of solution equal to four times the quantity of blood that an animal possessed could be safely injected. Wiggin, however, mentions the case of a patient with a weak heart, in which an injection of three quarts, rapidly given, so overburdened the circulation as to cause death. When large quantities have been used and the patient does not regain consciousness within a few hours, it is well to see that the bladder is not distended, as sometimes the amount of urine excreted is marvellous.

Use.—The most widely known field for the employment of the saline solution is in the anæmia due to hemorrhage. Inflet and Leffort, in 1878, were the first to suggest its use in this condition. Since then it has been the resource of surgeons the world over in the treatment of this form of anæmia, and with uniformly satisfactory results.

The immediate source of danger from sudden loss of blood is the fall in blood pressure to a point where the circulation cannot be maintained. The first indication, therefore, is to raise the pressure in the vessels. This the saline solution does, supplying from a mechanical standpoint a liquid capable of taking the place of the blood lost, and also acting as a stimulus to the vasomotor system. As an ultimate cause of death, the loss of enough of the oxygen-bearing red corpuscles to arrest the respiratory function might be feared; but this need not cause us any concern, for it has become an established fact[6] that in animals blood may be withdrawn until the heart and respiratory functions have ceased for some time, yet if one-third of the blood remains in the system and a sufficient quantity of saline solution be introduced, cardiac and lung action is at once restored and the animal recovers. Furthermore, in pernicious anæmia the loss of red corpuscles sometimes amounts to as much as ninety per cent., yet respiration is not seriously impaired. But it does more than restore the circulation; it has a decided hæmostatic action.

Pierre Delbert, in 1889, observed the blood clotting directly as it was flowing from the vessels, following an intravenous injection of saline solution, and his observations have since been confirmed. As an example of this hæmostatic action, the following is cited:

Rosie M—— was operated upon for pyosalpinx. Owing to dense adhesions, considerable hemorrhage followed, which for various reasons could not be controlled. On account of the precarious condition of the patient the wound was packed and she was put to bed. Two hours later she was still bleeding and was in a condition of collapse. The face was pale and covered with a cold sweat, the eyes were half open and glassy, the pulse was thready and rapid (160 or more), and the blood still continued to well out of the wound. I gave her an intravenous injection of two pints. The first result noticed was an increase in the tension of the pulse and a marked diminution in rate (80–90). The color began to appear in the face; the eyes regained their lustre and consciousness returned; but, more important still, the bleeding ceased. About half an hour later the patient had a short, sharp chill, and fully recovered some time later.

The theory has been advanced[7] that it produces this hæmostasis by exciting the contraction of the arterioles and a migration of the hæmatoblasts from the hæmatoformative centre. These are destined primarily to replace the blood lost by hemorrhage, but, arriving in a serum yet rich in fibrin, they are precipitated and form the nucleus of a clot. Its twofold function becomes especially apparent in internal hemorrhages, such as hæmoptysis and the hemorrhage of typhoid fever. It is advisable in these two conditions, unless there is immediate danger of death, to allow the fluid to run very slowly, on account of the increase in blood pressure.

Shock.—In the condition of shock with its attendant vasomotor paralysis the vessels are flaccid; the blood for the most part is accumulating in the large abdominal veins. The ventricles of the heart are practically empty and deprived of a sufficient blood supply and its normal stimulus, and the heart is beating only occasionally. Drugs, given either by the mouth or hypodermatically, are of no avail, because they cannot be absorbed. Something must be done to cause more fluid to enter the heart and thus keep up the flagging circulation, or death will shortly ensue. Nothing surpasses the saline solution for this purpose. Stimson[8] reports a number of cases of shock treated successfully in this manner. Three of his cases were accident cases, and when admitted to the hospital they were in a condition of extreme shock.

Spencer[9] reports several cases of shock, occurring during cerebral operations, treated successfully in a similar manner. Many other cases are reported by good observers, and their reports all seem to have this in common, *i.e.*, that they are all enthusiastic in its praises as a life-saving measure.

In the treatment of shock during an operation, Dr. Wiggin[10] advises that as soon as the pulse increases twenty or thirty beats a minute strychnine shall be given hypodermatically until one-twelfth of a grain is reached, and supplemented with glonoin. In case this does not control it, intravenous saline infusion should be resorted to at once. In his service at the City Hospital it is resorted to upon the slightest indication, with the happiest results.

Its good effects are visible on the day following the operation, inasmuch as these patients do not complain of the unbearable thirst that so commonly follows severe operations, nor do they have the drawn, pinched expression so often observed under similar conditions. Whenever a patient to be operated upon is in a weak condition, it is a good plan to give the injection as soon as the patient is anæsthetized. In conditions of electric shock it is advisable to employ it, even though life seems extinct.

Uræmia.—Whatever our belief may be as to the exact causative agent in uræmic conditions, it has long been admitted that some toxic agent does accumulate and circulate in the blood. Bouchard found that, while it required ten cubic centimetres of normal human blood to kill a guinea-pig, from three to six cubic centimetres of blood from a uræmic patient would accomplish the same result.

Now, as this agent is contained largely in the blood serum, the most logical sequence would be to get rid of as much of the blood containing the poisonous agent

as possible, without directly endangering life, and then to dilute the remainder with some harmless agent. Such an agent we have in the decinormal salt solution. Furthermore, the saline solution has a powerful osmotic action on the kidney cells themselves, and thus increases the eliminative processes (the researches of Bosc would indicate that its action is mostly manifest upon the cells of the convoluted tubules). In addition, clinical experience has proved that as a result of its introduction into the circulation diaphoresis and purgation occur, so that it fulfils all indications for treatment in a case of uræmia.

In one case of this kind when I had the opportunity to employ it the effect was certainly remarkable. The history is as follows: Ellen K——, aged forty years, with a record of uræmic symptoms extending over five months, complained of a sudden blindness. A few hours later she had a uræmic convulsion lasting ten minutes. The urine contained albumin and casts. Hot packs, diuretics, and purgatives were employed, and the next day she was feeling better. Two days later, as a result of a nervous shock, she began to toss about in bed in a delirious manner. Convulsion being feared, glonoin, one-seventy-fifth of a grain, was given at once hypodermatically, and chloral and bromide were administered per rectum; five minutes later she had a convulsion. She was put in a hot pack and one-sixth of a grain of pilocarpine was given hypodermatically. Fifteen minutes later another convulsion occurred, followed in a few minutes by a third, when the convulsions ceased. The patient was now in coma. There were profuse salivation and œdema of the lungs, probably due to pilocarpine. An hour later her condition was rapidly becoming worse; the face was cyanotic, respiration stertorous, skin dry, and pulse very weak and irregular. Ten ounces of blood were withdrawn and two pints of salt solution were introduced directly into the vein. The pulse now improved in tension and became slower, and her general condition was much better. Three hours later the pulse began to weaken and became rapid, reaching 140 for the second time. Another pint of the saline solution was given, and the patient began to rally. She soon regained consciousness, and from that time on she progressed favorably. The case is especially interesting, in that it shows that œdema of the lungs is not a contraindication to the use of the saline infusion.

Proben reports a case of eclampsia with total suppression of urine. Two quarts of the solution were injected, and within twenty-four hours the woman passed one hundred and nine ounces of urine.

Merlin[11] reports a similar case.

Porak has treated fourteen cases of uræmia with these injections, with one death.

Suppression of Urine.—McBurney[12] reports a case of acute suppression of urine, following removal of a large calculus from the kidney, that successfully responded to these injections.

Diabetes.—It is very probable that the good results obtained by Lépine in diabetic coma by the use of intravenous injections of salt and sodium bicarbonate are due more to their depurative and eliminative action than to any chemical change that may be supposed to take place, and so far the decinormal salt solution will answer as well. Garnier and Lambert[13] have succeeded in at least temporarily arresting the glycogenic function of the liver by decinormal salt injections, so that we may hope for more permanent results in the future in an otherwise hopeless class of cases.

Sepsis.—Within the past two years it has been heralded by the French writers as almost a specific in septic conditions, and their results would seem to justify the claims. The *rationale* of this treatment, according to Pozzi, who is a strong advocate, is that in the first place by raising the intravascular pressure it increases the patient's power of resistance, enabling him to carry on the struggle against disease. In cases of septicæmia the blood-making organs thus get time to produce new blood corpuscles for phagocytosis, and the kidneys, the excretion of which is increased, eliminate the toxin.

Lejars and Michaux[14] report its successful use in seven cases of peritonitis.

Berrin[15] reports a case of septic peritonitis as cured by its use. Monod has had seven cases with three recoveries. Michaud has had fifteen cases with five recoveries. Duret[16] has had four cases with three recoveries.

Ange[17] and Buchanen each report instances of its use in septic conditions. The latter in a puerperal case used six quarts at one injection, and believes it was instrumental in saving life.

Tuffier makes a favorable report of fifty cases of septic conditions and hemorrhage, including two cases of tetanus.

Duret[18] reviews the history of twelve personal cases, of which eight were cases of septicæmia (four post-operative, four puerperal), one case of severe shock, two of collapse from hemorrhage, and one of urinary infection. Of the twelve patients so treated, ten recovered.

Bertin'[18] reports the case of a woman septic for three days; the abdomen was distended and painful with frequent vomiting. On the fourth day she seemed to be dying; two pints were injected. This was followed by marked cyanosis, and shortly after there was a decided improvement and the patient recovered. In a discussion of Bertin's report, Segond, Pozzi, Bouilly, and others heartily indorsed the use of salt solution in such cases, and spoke of it as being constantly employed by them in all cases of grave septicæmia, with the happiest results.

Claisse,[19] in describing the phenomena observed in these cases, says: "We find the patient suffering from a severe infection, all the organs working badly; temperature about 104° F. In ten minutes twelve hundred to fourteen hundred cubic centimetres of solution is injected. At once the patient feels better and reaction begins; usually the patient now enters on what is known as the critical stage, which comes on four or five minutes later. There are a violent chilly sensation of extreme cold, strong rapid pulse, and a rapidly rising temperature, 104° to 106° F. in an hour. About six or eight minutes after the chill there are a feeling of heat, flushed face, and labored respiration, pulse and temperature being unchanged Water now makes its appearance in quantity through the pores of the skin and the kidneys. In three or four hours later the real improvement becomes manifest. The temperature sinks to normal and convalescence is established. In severe cases improvement is only temporary and the injection must be repeated."

One successful case of osteomyelitis with multiple abscesses is reported by Lejars.[20]

Rau[21] reports a somewhat similar case.

Cholera.—The first application of salt solution in general medicine was to counteract the lowered blood pressure of the algid stage of cholera. It was used with great success in the Paris epidemic of 1884, and later in Hamburg in 1892. Dr. McLeod tells me that it was largely employed in a similar epidemic in this city in 1833. Its twofold action, *i.e.*, washing out the poisons and supplying liquid, together with keeping up blood pressure, rendered it a most useful agent.

Sahli[6] reports its successful use in cases of typhoid fever, uræmia, and diabetes.

Bosc[6] has collected a number of cases of its successful employment in typhoid fever. In this disease the indications for its use are the same as in cholera.

Pneumonia.—Bassi[22] reports its use in eight cases

of severe double lobar pneumonia, with seven recoveries. He says that the best time to use it is about a day or so before the expected crisis, or whenever the pulse becomes intermittent, or, in fact, upon any grave change in the patient's condition.

Legnaini [23] reports three successful cases of a similar character.

Galvagin, Pellegrine,[24] and Lejars[20] also have had decided success from its use in this condition.

Purpura Hæmorrhagica.—Feltz and Pigot [25] report a case of purpura hæmorrhagica cured by its use.

Rau[21] has used it successfully in a similar case.

Ulcerative Endocarditis.—Dalchi reports its successful use in two cases of ulcerative endocarditis. In one case a litre a day was employed for five days.

Pyelitis.—Delbert has had good success from its use in pyelitis, and he believes that the increased amount of urine washes out the pelvis of the kidney and also eliminates the toxins.

Carbon-Monoxide Poisoning.—Brodier[26] reports the case of a man suffering from carbon-monoxide poisoning (coal gas). He was in a comatose condition; the autopsy nearly all the organs were found in such a condition of extensive degeneration as to preclude any possible chance of ultimate recovery.

Toxæmia Due to Colon Bacillus.—Vedel [28] has been able by the use of saline infusion to neutralize in rabbits the toxæmia due to intravenous injection of the toxins of bacilli coli communis.

Painter's Colic.—Delearde reports five cases of painter's colic treated by subcutaneous injection of the saline solution. The pains soon ceased. Diarrhœa set in, lasting for two or three days, followed by rapid recovery.

Carbolic-Acid Poisoning.—Landouzy in severe cases of carbolic-acid poisoning advises bleeding followed by infusion of saline solution. Several unreported cases, treated in the hospitals of this city, tend to confirm this statement.

Tetanus.—Tuffier has had two successful cases of its use in traumatic tetanus.

Epilepsy.—Monet and Viret,[29] as a result of extensive investigation of the urine in epileptics, believe that epileptic attacks are due to a critical accumula-

TABLE OF EXPERIMENTS.

	Liquor Potassii Arsenitis by Hypodermic Injection in Buttocks.	Time Elapsed between Injection and Appearance of Symptoms.	Time between Introduction of Poison and Infusion.	Blood Withdrawn.	Amount of Salt Solution Introduced.	Effect of the Saline Infusion on Pulse.	Length of Time Animal Lived after Poison Introduced.
I. Small cat, female....	♏ xv.	4 minutes (restlessness)	.....	None.	None.	.....	3 hours.
II. Fair-sized cat, female.	♏ xv.	6 minutes (vomiting)	1 hour.	ʒiij.	ʒij.	Not perceptible.....	2 hours.
III. Large cat, female ...	♏ xx.	6 minutes (restlessness)	1½ hours.	ʒij.	ʒiv.	Brought tension up to normal for an hour or so.	8 hours.
IV. Large cat, male.....	♏ xxij.	4 minutes (restlessness)	1½ hours.	ʒ iv.	ʒ xxij.	Brought tension up to normal for an hour or so.	7 hours.
V. Large cat, male.....	♏ xviij.	3 minutes (vomiting)	1½ hours.	ʒ ss.	ʒ xxxij.	Brought tension up to normal for an hour or so.	9 hours.
VI. Female cat	♏ xvij.	6 minutes (diarrhœa)	2 hours.	ʒ iv.	ʒ xij.	Pulse continued fair until the next day.	48 hours.
VII. Male cat.....	♏ xviij.	5 minutes (restlessness)	2¼ hours.	ʒ v.	ʒ xiij.	Pulse continued fair until the next day.	Recovered.

reflexes were lost; the respirations varied from 44 to 52 per minute. Nystagmus was present. The pulse was feeble and rapid. Oxygen inhalations and injections of ether were useless. As a last resort an intravenous injection of saline solution was given. This was followed by a chill, vomiting, and profuse diaphoresis. Improvement began at once. The injection was repeated in an hour, and his rapid recovery followed. Hueily, Bergmann, and Fräntzel have reported similar cases.

Mushroom Poisoning.—The editor of *La Presse Médicale*, June 12, 1896, after giving the history of several cases of mushroom poisoning, advocates venesection followed by saline infusion as the logical treatment for this condition.

A temporary amelioration was afforded in a few cases of grave jaundice, mentioned by Delamare.[7]

Burns.—Tomalisoni [27] has obtained very good results from its use in extensive burns. In the course of his experiments on dogs suffering from such injuries, he found that if the saline solution was introduced they almost always lived; otherwise treated they all died.

Alcoholism.—In the only case of acute alcoholism in which I have had an opportunity to employ it as a depurative agent, the patient, a chronic alcoholic, had been delirious for two days, with a weak, rapid pulse, ranging from 140 to 150. A few ounces of blood were withdrawn and a pint of the solution was injected. The pulse fell to 90, increased in volume, and the patient was restored to consciousness for a short time. Although previous to the injection death seemed imminent, the patient lived for thirty-six hours. At the tion of toxins in the blood, and recommend the use of saline infusion as a depurative agent, at intervals to be determined by the relative toxicity of the urine.

Arsenic Poisoning.—In view of the fact that arsenical poisoning is always followed by great drop in blood pressure, and inasmuch as the arsenic circulates in the blood, it occurred to the writer that a saline infusion would act as a diluent for the poison and keep up the blood pressure at the same time. A number of experiments were performed on cats, and, while they are not sufficient in number or conclusive in result, they make it certain at least that life can be greatly prolonged by this means.

In every case characteristic symptoms of arsenical poisoning, such as vomiting, diarrhœa, prostration, etc., were all manifest within twenty minutes. In two cases there was considerable blood in the stools. In every case a large amount of urine was passed within a few hours after the infusion. From a review of these cases it would appear that it is better to wait until the poison has all entered the circulation, in order that the full effect of the solution can be obtained.

Many competent observers believe that the rôle of increased temperature is a conservative factor in diseased conditions, and they assert that it stimulates the production of antitoxins. The experience of Elfström in the use of heated blood in the treatment of pneumonia makes it probable that the action of heat does more than simply attenuate the bacilli. The universal rise in temperature following the saline injections, the chill and crisis, the marked improvement that follows, all seem to indicate that antitoxins in

sufficient quantity have been produced to neutralize, temporarily at least, the toxins; surely the salt solution *per se* could not do this. It seems to me that we can account for part of this beneficial action by the fact that the solution is usually introduced at a temperature several degrees higher than that of the blood, and that probably the increased heat stimulates the production of the antagonistic principles.

Finally, in summarizing we may say that in general its indications are:

1. In all cases of severe hemorrhage, whether external or internal.

2. In shock, both simple and post-operative, it fulfils all indications.

3. In all toxæmic conditions, and here it should follow venesection. Indeed, no agent thus far compared with it in efficacy in uræmic and septic conditions.

4. In cases of poisoning due to vegetable or mineral substances.

5. In any pathologic state attended with feeble pulse, due to diminished arterial pressure.

6. As a last resort in cases of imminent death from any cause of an accidental nature.

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SUBNORMAL TEMPERATURE.[1]

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So little is said in a collective way concerning subnormal temperature that one may be forgiven if in such a study he repeats many well-known facts, in order more satisfactorily to analyze the conditions that produce it.

Flint states that the subnormal temperature is exceedingly rare, and, except in extreme variations, of less consequence than the supranormal. Vierordt tells us that a continued subnormal temperature—that is, continued for several weeks—is very rare, and Starr[2] that a temperature of 97° F. in children continued for several weeks is a very serious condition, whatever its cause. My own observations lead me to think that it exists more often than we suspect. Doubtless it is overlooked from the fact that clinicians devote but little attention to temperature disturbances, unless above the average normal. We infer that if there are no manifestations of fever further observations are unnecessary.

I am impressed with the fact that we overlook in this neglect important early indications of disease. A single temperature register, taken at intervals of twelve or twenty-four hours, is rarely a good index. As a matter of diagnosis of diseases, not of themselves febrile, as great an amount of knowledge can be gained by following the temperature curve at short intervals, for one or two or a dozen days, as we get from examinations of urine taken separately from each quantity voided.

Another point worthy of suggestion is the difference between fever and pyrexia. It is the distinction between heat and temperature. There may be pyrexia without fever. The body heat is the form of energy produced in and lost from the body, and is estimated by the calorimeter. The body temperature is the relationship between production of heat and loss of heat, and is estimated by the thermometer.

Again, a temperature may be normal for health, yet subnormal for disease. I imagine that something of this kind occurs in yellow fever and in cholera and perhaps in acute atrophy of the liver, the combination being far more rapidly destructive and exhausting than either heat production or heat elimination alone.

Fever, in our common acceptance of the term, is a condition due to a specific infection, unless we except the temperature variations from structural changes in the nerve centres. It is characterized by a train of symptoms, such as exhaustion, emaciation, disturbed functions, pain, mental unbalance, temperature acting only a single part. The specific causative toxæmic results may produce either an elevation or a depression of temperature, and the latter generally indicates a greater intensity of the poison. An afebrile pneumonia is more disastrous than the febrile. A diphtheria, with or without extensive exudation, with rapid gland invasion, is often characterized by a subnormal temperature and is notoriously fatal. A "typhoid condition," as we term it, without the typical typhoid temperature, is more serious than its prototype. The "malignant" cases of appendicitis with subnormal temperatures are the unresisting, overwhelming, gangrenous ones that never recover. What we ordinarily fail to measure fully is that morbid temperature is a creation of impressions upon a specific nerve centre by toxins, and that the peculiar power of one may be reversed or modified in its combinations with others, and that the strength of the union produces unexpected results.

I have questioned whether we might not get more valuable suggestions from some other method than the usual one in obtaining the internal body temperature. The rectum approaches accuracy more closely than under the tongue, but this is so frequently influenced by local conditions that we are liable to be deceived. This was manifested in an observation that gave the temperature under the tongue at 98.7° F., and in the rectum at 101.5° F. A local rectal congestion explained the differences. To consider the question systematically, let me classify it in a somewhat arbitrary way, yet sufficient for the purpose: (1) Subnormal temperatures as normal for the individual. (2) As a prodrome. (3) During the progress of disease. (4) As a sequel.

My friend, Dr. Phelps, reports a case of a fellow-student in which the temperature was habitually 97° F. under the tongue. He states that the patient was apparently vigorous, active, and capable of as much work as other students. He possessed a healthy color and felt himself to be in perfect health. Dr. Phelps knows nothing of the history of this man for the past three

[1] Read before the New York State Medical Association, October 18, 1898.

[2] "Disease in Children."

years, and I doubt if he still retains his full vigor, for as a continuous increase indicates serious functional or organic changes, so a continuous decrease will result the same. We recognize the normal physiological variations of from two-tenths to three-tenths of a degree.

The second class seems to me to possess exceptional importance, because the temperature depressions not only present indications of subsequent developments, but suggestions for treatment that may prove abortive of serious conditions, if correctly interpreted.

Mrs. D——, aged thirty-nine years, well-nourished, and as fine a specimen of physical development in a woman as could be found, weighing one hundred and sixty pounds, and five feet ten inches tall, came to my office in 1894, with the complaint that while eating and sleeping normally, with no unusual care or responsibility and no recognizable disease, she had been constantly languid for some weeks. This was contrary to her usual feeling, for ordinarily she possessed rather unusual physical activity and vigor and a large amount of executive ability. I examined her carefully and was forced to declare that I could not find the slightest disease. The heart was perhaps small for her size, but she had sound lungs, perfect digestion, normal menses, normal pelvic organs, and was free from evidences of disease or injury. Urine abundant, elimination sufficient, constituents normal. The family history showed several cases of insanity. I prescribed strychnine and rest, and awaited developments. I saw her again a few weeks later. She had taken to the bed, complained of extreme lassitude, but was placid and intelligent, and with every function perfectly carried on. Heart's action not strong but regular. Surface cool, slightly congested, but not livid. The temperature under the tongue registered 96.8° F. She had absolutely lost her interest in her household affairs and ignored them, under the impression that in her previous activity she had exhausted her nerve force and was paying the legitimate penalty to nature. I ordered complete mental and physical rest, systematic feeding, and massage, and more generous doses of the strychnine. After a few weeks of such treatment she gradually improved; the average temperature reached 98° to 98.5° F., and she resumed her usual responsibilities. She removed to Norwich soon, and I did not see her again until 1896, when I was called to the southern part of the State, to see her in consultation. She presented a repetition of the earlier history, except that the surface presented a passive capillary congestion, the heart's action was weak and irregular, without organic lesion, and the pulse was correspondingly weak. The functions of respiration and digestion were perfectly performed. The temperature was 96.5° F., not exceeding 97° F. at any time in a given twenty-four hours. Her mental condition had undergone a decided change. She was suspicious, emotional, apprehensive of impending death, and had a marked suicidal tendency. The physical conditions were like those of a vasomotor paralysis. I suggested again strychnine and phosphorus, special feeding, and light massage, and in a few weeks she recovered; and with the recovery the temperature became normal. She remained well about a year. I was called again in the latter part of 1897, to find a repetition of the same history, and the same processes brought a gradual recovery. In January, 1898, her husband came to me with a statement that he had discovered that her temperature was again subnormal, and that he could see indications of increasing lassitude. The strychnine was given, and evidently checked the advance and averted the attack.

Now, in this family was a history of seven suicides. I was familiar with two of the persons, both of whom were committed to asylums. All of them hung themselves. I do not insist that the mental condition of my patient was the result of the depressed temperature, but suggest that the subnormal temperature preceded the other manifestations, that it was sufficient to give an early and definite warning, and that its recognition and proper treatment prevented the more serious attack.

The following case is an anomaly, because of the variations of temperature without discernible causes. I have been the patient's attendant for the past ten or more years, and have had many occasions to be assured that before the present disturbance her average temperature was normally 98.5° F. She is from a family without hereditary taint, except a remote tuberculosis. In 1895, a few months after the birth of her second child, she began complaining of exhaustion, and I found that the temperature from early morning until 2 or 3 P.M. did not exceed 97° F., and much of the time varied from 95° to 97° F. It then began gradually to increase, until in the evening it reached from 95° to 101° F. We instituted a careful search for the cause. Her bodily weight varied but little. The appetite was good. The lungs, heart, abdomen, and pelvic organs were perfectly healthy. The urine was frequently analyzed and the proportion of solids estimated, with negative results. We searched for evidences of malaria and examined the blood, without results. Her sanitary surroundings were perfect. This condition continued month after month without change in symptoms except a mental depression during the hours of the low temperature, until the early part of 1897. I referred her to Dr. Janeway, who after his usual exhaustive search failed to find a sufficient cause, beyond a theory of some central irritation, and wrote me that he had had for three years under his care a professional gentleman who presented a similar history, which he could not account for. He suggested treatment for a possible malaria, which availed nothing. Dr. Herter also saw her, without any more definite conclusion. Dr. Ford, of Utica, was consulted and suggested a possible autotoxis, and thought he could detect some variation of the respiratory sound in a small section of the right lung. A most exhaustive search for a source of toxæmia failed to reveal anything; there has been no advance of pulmonary disease, and the respiratory change was evidently due to a temporary bronchial catarrh. She became pregnant the last time in 1897. After the beginning of her pregnancy the temperature became normal, she was relieved from the lassitude, gained several pounds in flesh, and regained her natural brightness. This continued until the eighth month, when she became nervous and apprehensive about her approaching accouchement, which was contrary to her usual reception of that event, and was irritable, depressed, and emotional. I found her temperature again from 96° to 97° F., continuing so during the full twenty-four hours. There was not a sign of uræmia or the other complications of pregnancy. She passed through her confinement easily and quickly, without complications, except a little excess of flowing. Within an hour after its completion she passed into a condition of lethargy, was utterly indifferent to surroundings, paid little attention to the child, talked incoherently, or, if aroused, was exceedingly depressed and apprehensive. She remained in this condition a week, the temperature never exceeding 98° and generally nearer 96° F. She rallied slowly, and up to the present time, while able to be about and perform her household duties, still has the temperature variations of a depressed morning and an elevated afternoon, and possesses the mental depression and constant sense of weariness.

One condition existed in these two cases in common —hearts normal in structure but weak in force for the demand upon them.

My friend, Dr. Williams, of Greene, N. Y., has been for two or three years investigating cardiac areas,

and believes that in nearly all cases of laziness or chronic weariness without disease he has found a marked relative disproportion between the size of the heart and the body. The heart is too small for its work, and the "fellow can't help it." We are, doubtless, all familiar with the picture so graphically drawn by Hammond twenty-five years ago, of the influences of excess of mental toil upon the cerebral circulation—the undue distention of the vessels, the subsequent reaction and passive congestion, and the ultimate nerve weakening, functional irregularity, inability for mental application, delusions, etc., later described as neurasthenia. A small heart or a weak heart, too small for its requirements, can easily produce the same results. The defective pump, sluggish circulation in the terminal arteries, insufficient blood supply to nerve centres, irregular thermogenesis or thermotaxis, depressed temperature, mental depression, melancholia, suicide, produce a familiar picture. The overworked business man often presents a record as follows: After perhaps an unusual business strain he becomes weary, listless, nervous, irritable, despondent, sleepless, unable to apply himself, and with a lack of judgment in his business affairs. These cases frequently present for days preceding the going out and during the time a subnormal temperature, varying from one-half to two degrees. Dr. George Williams, of Greene, has made many observations in this direction, and has recently presented a paper before the Broome County Medical Society, giving the results of his studies. He has kindly consented to permit me to cite some of the cases and opinions given by him.

W. L. S——, aged sixty years; good habits and in excellent health for a man of his age. Has large business interests, to which he has devoted himself assiduously. He came to my office with a complaint of general nervous distress, which he could not define clearly. An observation of his temperature gave it as 97° F. His business at this time was in a crisis, which taxed him to the utmost. I advised rest, but he could not take it. In ten days I was called to his home, to find his condition so much like that just described that I need not repeat it. A month's rest and he returned to business, with vigor and ability restored and temperature normal. He has repeated this history several times during my knowledge of him, each time with the premonitory subnormal temperature, followed by insomnia, nervousness, etc., until a complete rest restored him. I suspect a time will come when his recuperative powers will be unequal and his mental powers permanently enfeebled.

O. M——,[1] merchant, aged fifty-eight years, good physique, and a tremendous worker. He has periodical "giving out times," as he describes them, and the history of the preceding case is repeated. His temperature for days registers 96° to 98° F. Absolute rest in bed, freedom from all business cares, and strychnine restore the exhausted forces, and in two or three weeks he returns to his business. These cases justify me in the belief that the fall of temperature is the earlier manifestation of the condition, and that if this is recognized and appropriate measures are resorted to the later disease may be averted.

Periodical alcoholics present a depression of temperature for a period of from one to five days preceding the outbreak of extravagant indulgence. As a matter of fact, it is a consciousness of physical subnormality that induces the resort to stimulants. Alcoholic excesses, especially in the solitary drinker, seem to be a sequence, the result of an attempt by artificial means to re-establish a normal bodily balance. An illustrative case is that of G. B——, a man, aged thirty-five years, good physique, who has a periodical drunk at intervals of from four to six weeks, and it does not seem to be associated with "pay-day" excesses. In the interval he abstains entirely. The period lasts a week or so, during which he drinks excessively. His complaint is, as the period approaches, "I do not know what to do with myself." The sense of uneasiness, of inability to apply himself to his work, to concentrate his thoughts, is almost overpowering, and leads to resort to the stimulants if not averted. His temperature for several days preceding his resorts to drink is 96.5° or 97° F., and if then proper treatment is resorted to the desire for stimulants passes off, the temperature regains normal, and the storm is prevented.

Dr. Williams has recorded a number of cases, presenting the same temperature depression. He has made further observations that lead him to think that there is a class of cases that present the same periodical storms, resembling closely the alcoholic storm, and have exactly the same symptomatic history, but in which surroundings or restraining qualities prevent the use of stimulants. He believes that in the majority of such cases there is a history of some early violence or injury implicating the nerve centres. He cites me the following cases, which I have condensed from his notes:

First patient, aged sixty years, business man, has recurring attacks at intervals of two to six months, in which for from one to two weeks at a time the temperature registers from 95° to 97° F., and with it is a physical condition that either partially or completely (according to severity) disables him from attending to his business. He is despondent, weary, irritable, etc., and has during the attack a dull irregular pain along the spine. He had a fall from the barn loft to the floor several years ago, injuring his head (concussion).

Second patient, aged forty-five years, capable, active farmer; he fell from a tree at the age of ten, striking upon his head and shoulders. He has had for several years reccurring waves of physical and mental depression, preceding and during which his temperature is about 95° F.

Third patient, aged twenty-seven years, mechanic; fell from a high window during infancy. Gives a history similar to last, of low temperature and depression, which occasionally results in alcoholic excess.

Fourth patient, aged forty-six years, farmer, ordinarily energetic; fell from a load of hay to the ground, striking on his neck and head. At intervals of from six months to a year he had attacks of exhaustion, with physical and mental depression without definite cause. These would last two to four weeks, and preceding them by a few days and during the attack his rectal temperature does not exceed 95° and is often at 94° F. During the intervals the temperature is normal.

The subnormal temperature in the "progress of disease" is an interesting study, worthy of a more prolonged and able consideration than I can give it. A glance at the cases characterized by constant or irregularly occurring subnormal temperature will show the following: Myxœdema, exophthalmic goitre, uræmia, chronic alcoholism, syphilis, chronic nephritis, constipation, influenza, diabetes, yellow fever, insolation, cholera, spinal sclerosis, melancholia, cerebral traumatism, surgical shock. There are two distinct classes, and possibly a third. The first class involves primarily the nerve centres in organic changes, such as syphilis, spinal sclerosis, chronic alcoholism; the second class those that produce specific symptoms through the process of acute intoxication, as in uræmia, chronic nephritis, constipation, yellow fever, influenza, chronic jaundice. The third class may have a measure of autotoxis, combined with some specific influences upon the sympathetic or glandular systems, as myxœdema and exophthalmic goitre. It is probable that while various theories, which it is not the object

[1] Reported by Dr. Williams.

of this paper to discuss, exist concerning the origin of the two latter diseases, the essential element of the resulting cachexia of both is an autotoxæmia, and that the diseases are closely allied.

Chervalier suggests that under the influence of certain pathological conditions the thyroid gland secretes a toxic matter, and this by action directly on the nervous system produces the secondary nervous phenomena in the patient. There seems to be a relation between the two. Myxœdema often follows an exophthalmic goitre. The heart is the seat of morbid phenomena in both. In Graves' disease there is a tachycardia, in myxœdema slowness of heart action, and attacks of exophthalmos are met with at the commencement of myxœdema. But whether the thyroid be a poison eliminator or a poison producer, the ultimate result is a toxic condition of the system. There are many cases reported of continuous subnormal temperature in myxœdema, the temperature continuing from one to three or four degrees below normal. As these have been published, I need not cite them. The temperature of exophthalmos is quite as often normal or elevated, but occasionally subnormal.

Just which toxins produce a subnormal and which the supranormal it is difficult to determine. It is probable that the same toxins will produce opposite results in different conditions of the system; just as in uræmia, while urea remains unchanged we get a normal (or supranormal) temperature, when a decomposition takes place we get an ammonæmia with a powerful temperature depression; or when the renal organs are irritated, a nephritis with tissue necrosis and fever. A case just under my observation demonstrated this clearly. When the condition was discovered, there had been no change from the normal; then followed several days of depression to 97° or 96° F., and then a crisis with convulsions, followed by a temperature ranging from 100° to 103° F., and as convalescence progressed a recurrence of the subnormal.

In carcinoma, particularly of the liver and stomach, there are many cases reported of long-continued subnormal temperatures. Dr. Blair, of McDonough, reports to me a case of carcinoma of the stomach, in which for months the temperature did not exceed 97° and at times was 96° F. Two months preceding death the temperature gradually increased to 101° or 102° F. Here the combination of destruction, infection, and sepsis doubtless was the cause of the change. The same may be said of the intestinal toxins, many of which produce a subnormal temperature, but when combined with foreign sources of infection, systemic poisoning, and structural changes act oppositely. The depressed temperature of cholera is, doubtless, also the result of varied conditions, such as the specific poison, the excessive drain, and the rapid and destructive nephritis and tissue changes.

We occasionally find a case of diphtheria in which the poison overwhelms the system rapidly, and in which the temperature never reaches the normal. These cases are fatal from their inception; and the same may be said of the diffuse or rapidly spreading pneumonias, due to influenza, that most of us have seen during the last five years. Death marks them as its own from the moment of the seizure. The latter cases of pneumonia are certainly more abundant than in former years, and exceedingly fatal. Tessur reports a case of this character, in which the highest temperature record was 97.4° F. In February, 1895, there occurred three cases in one family, evidently due to infection from each other, characterized by temperature that (except in the later stage in one of them) did not exceed 99.5° F. Many similar cases are on record.

The class that involves the nerve centres primarily, such as spinal sclerosis, syphilis, chronic alcoholism, undoubtedly depress the temperature by their direct effect upon the heat-producing or heat-regulating centres, aided by their influence on functional activity. I need not report cases.

A class of cases presenting periodical subnormal temperatures, not commonly recognized, deserves a brief mention.[1] Hemiplegics after apparent recovery are continually, at short intervals exhibiting depressed temperatures for several days at a time; and with this appears also a train of symptoms analogous to those described as occurring in alcoholics. These depressions are warnings that recovery is never complete, and that some degree of physical impairment has attended the lesion. Epileptics often present a temperature of 97° and 98° F., and particularly preceding an attack it may be found at 95° to 96.5° F.

I fear I have already burdened you, and I hasten to mention one other class of cases, which perhaps is out of order in this part of the discussion—cases with a history of chronic or subacute rheumatism, involving the joints irregularly, the thermometer indicating 96.8° F. or 97.6° F. This phenomenon is usually of short duration, may last three or four days, and is subdued by guaiacum. The same condition is occasionally observed in grown people, and attributed to either intense cutaneous evaporation or the retention in the system of some toxic substance.

The last class, occurring as a sequela of disease, includes the subnormal temperature resulting from surgical shock, the depression following continued fever and hemorrhage. These are familiar to us, and I will not further discuss them. Cases of excessive venery are reported, in which as a result occurs prolonged subnormal temperature with general depression of the nervous system. Dr. Gibson, of Utica, states that he has frequently found, in examining pensioners in the winter who had ridden several miles in the cold, a subnormal temperature lasting two or three hours. This result he attributed to heat abstraction.

In conclusion let me summarize: (1) Subnormal temperature is not so uncommon as we are led to suppose by writers. (2) The subnormal temperature is a frequent prodrome of disease, and an important indication for abortive treatment. (3) A continued subnormal temperature (whether cause or effect) is disastrous, and especially to the nerve centres. (4) The subnormal temperature in diseases usually characterized by elevated temperature is a very grave symptom. (5) The causes producing a subnormal temperature can probably be covered by two pathological conditions: (*a*) a primary disease or injury to nerve centres; (*b*) an autotoxæmia.

SENILITY.[2]

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"To old people, dyspnœa, catarrhs accompanied with coughs, dysuria, pains of the joints, nephritis, vertigo, apoplexy, cachexia, pruritus of the whole body, insomnolency, defluxions of the bowels, of the eyes, and of the nose, dimness of sight, cataract, and dulness of hearing." This is Hippocrates' catalogue of the ailments of old age.

Aside from the morbid conditions of which it may be considered the cause, senility is an important factor in every case in which it is present. In any surgical operation, it is a matter for consideration. As physicians we meet with its effects daily; it is endemic everywhere. Charcot calls it the normal disease.

What is old age? To the physician it is not a mat-

[1] Reported by Dr. Williams.

[2] Read before the New York-State Medical Association, October 20, 1898.

ter of dates, but of physical condition. Some are physiologically older at sixty than are others at eighty. How many of us have seen a white-haired woman, almost toothless, face wrinkled and pallid, with form bent, step short and uncertain, and trembling hands—and been astonished to find her less than sixty years old!

Old age is not a question of years; it is not determined by the grayness of the hair alone, nor will it do to measure it by the feel of the temporal artery. Cazali's statement that "a man is as old as his arteries" is too short a phrase to contain the whole truth of so large a theme.

We cannot properly define old age until we have formed for ourselves some adequate concept of life itself. This is confessedly most difficult. According to Herbert Spencer, life is continuous adjustment of internal relations to external relations. Senility from this point of view would be a lessening of this capacity for continuous adjustment.

Or life may be defined as a constant balance between assimilation and disassimilation. Old age, then, is characterized by diminished assimilation. In growth assimilation exceeds its opposite. An organ in which assimilation is retarded is senile. That there is lessened metabolism may be shown by an examination of the urine. In middle life the amount of urea to one kilogram of body weight may be stated to be 0.41 gm. In old age it falls to 0.13 gm. If we accept these definitions we find that a failure in ability continuously to adjust itself to environment is one factor in senility; the other is diminished assimilation.

But old age is a process taking place in each individual cell. If we would learn the secret of senility, it must be done by the aid of the microscope. "A cell is not nourished; it nourishes itself." When the ability to absorb and utilize the pabulum presented to it flags, then that cell has passed its meridian. In the struggle for existence going on among the somatic cells, such an ill-nourished cell must sooner or later go to the wall. Diminished vital resistance and diminished assimilation are both signs of obsolescence in cells.

Of the cells entering into the composition of the body, some can reproduce themselves indefinitely. Of these the connective-tissue cell is the type. The most highy specialized cells can reproduce themselves scarcely at all. So when a nerve or muscle cell dies, its place is taken by one of connective tissue. As traumatic lesions are replaced by scar tissue, so the traumatisms of disease, during the course of life, destroy muscle cells or gland cells that are never restored, but are replaced only by the lowly organized connective-tissue cell.

Tillmanns states that in the liver after a contusion a traumatic growth of connective tissue occurs, so that in a case observed by him only two months after such an injury there was in many places no longer any normal liver parenchyma to be seen. The repeated shocks that come during a long life may be considered the equivalent of a severe traumatism by an accumulation of their minute traumatisms. There may be more than a fanciful analogy to the crystalline changes occurring in the inanimate iron of a car wheel, which is rendered useless after being on the road a certain period.

Old age, then, begins in primary cell elements. After a long continuance of the replacement of the parenchymatous cells by adipose and fibrous tissue, the result becomes manifest in a microscopic section and we call it fibrosis of the organ. This is the essential of old age. The liver is called cirrhotic; the kidney, gouty; the joints are said to be affected with nodular rheumatism; in the lungs Sydenham called the process peripneumonia notha—in these days it is termed senile asthma; at the neck of the bladder occurs hypertrophy of the prostate; in the brain there is an increase of the neuroglia; in the heart there is fatty degeneration; in the middle ear there are deafness from thickening of the tympanum and anchylosis of the ossicles. Yet it is in the walls of the blood-vessels that the most important though the less striking changes take place. De Menge examined five hundred senile cases microscopically, and found endarteritis in all. At first these changes are occult; but soon in the cells of the intima of the minute blood-vessels, apparently from the irritation of some peccant material in the blood circulating through them, a degeneration of the normal serous to fibrous and fatty cells takes place. An extension of the same process to the muscular coat follows, with the resulting thickening of the wall, diminution of the calibre, and hindrance to the normal blood supply. If these minute blood-vessels are vasa vasorum, then senile degeneration of the walls of the larger arteries nourished by them takes place, and atheroma or its equivalent is found. A rich train of the manifestations of senility originates from this factor. Atrophy and softening of the brain from lessened blood supply, apoplexy from a broken weak vessel, and gangrene of the extremities arise in this way.

There are also breaking down of the alveolar partitions in the lungs and senile emphysema; thickening of Glisson's capsule; and amyloid, fatty, and calcareous changes everywhere. Another sequel is weakness of muscle, which gives rise to such diverse symptoms as presbyopia; dilatation of the cardiac ventricles and the arch of the aorta; dilatation of the hollow organs, as the stomach and bladder; torpidity of the bowels, with constipation and all its chain of evils.

It will be noticed at once that the pathology of chronic alcoholism presents an almost identical chain of lesions. There is the same fibrosis—the same tendency to atheroma. The acute observation that "for the alcoholic the years count double and triple" would indicate that the effects of old age and of alcohol on the system were the same, and each intensified the other.

Infective diseases lower the coefficient of vitality and so cause premature old age. We have seen this markedly illustrated during the past few years by the grippe. Syphilis and slow metallic poisoning also have a similar pathology. Indeed, the analogy is so close as to lead to the inquiry whether old age also may not be due to an intoxication.

One is certainly justified in asking this apparently absurd question, if it be true that the microscopic changes found in old age are identical with those produced by alcohol, the toxin of syphilis, or the products of defective metabolism in the gouty or rheumatic subject. The term toxin of old age sounds ridiculous, but, after reading Bouchard's monograph on autointoxication, it appears slightly less so. If in the normal organism sufficient toxins are daily elaborated to cause death if not eliminated by the kidneys and liver and lungs and skin, it becomes comprehensible how the system may become clogged by the ashes of its own fires.

The analogy to some of the lower organisms is very striking. Yeast plant is immortal; it buds and grows as long as the alcohol produced by it is removed. But fermentation stops when the product of its own growth reaches twenty per cent.; that is, senility of the cell occurs. In the same way the product of vital activity in every cell in the body is toxic to that cell, and acts slowly only when elimination is comparatively perfect.

A striking example of the changes taking place in a tissue from deficient elimination, and one open to daily inspection, is the various catarrhs. The loss of

function, fibrosis, and final atrophies in nasal catarrh are all senile changes.

Does the study of the pathology of old age give rise to any indications for treatment? For general senility, No. We cannot by any general or local treatment get rid of the cicatrix of a burn. No more can we by treatment replace the fibrous cells of a worn-out tissue with new parenchymatous cells. Mercuric chloride has been thought capable of discussing atheroma and fibrosis by its alterative action, but the claim is doubtful. Arsenic, in popular writings, is said to be capable of temporarily rejuvenating an old man, but physicians do not find that its rather mysterious powers extend so far. Brown-Séquard's testicular juice was much talked of from the fame of its propounder, but no one seems to have taken its recommendation seriously.

But there is a practical side of the question to physicians. If senility cannot be treated, senescence can be. If general senility is not, in the strictest sense, a disease, partial senility is so. If normal senility is not frequently brought to the attention of the physician, he is to combat and prevent premature senility.

If we are to avert partial senilities, it is necessary that we shall early recognize the organ that is breaking down. If this is done, by regulating the habits of life, by decreasing the amount of work required of that organ, by increasing nutrition, the balance may be partially regained. If we cannot bring the organ up to the level of the rest of the organism, then we must follow Fothergill's advice and level the other organs down to it.

Oliver Wendell Holmes, the poet, must have been also a good physician to have portrayed so accurately the idea of old age by the chaise in which "every part was made as strong as the rest," and at last—

> ". . . it went to pieces all at once—
> All at once and nothing first,
> Just as bubbles do when they burst."

But if we are to recognize which organ is most likely first to fail in our patient, we must go back to the old study of diathesis, which the French alone now consider worth attention. There are the laxus, which grows fat in old age, and the strictus, which withers up. One would expect to find sluggish liver more frequently in the former class, a cirrhotic kidney in the latter. The scrofulous and the arthritic are to be differently defended against the dangers of premature senility.

In the scrofulous, cells are ill adapted to resist the invasion of disease from outside. The lymph stream is sluggish, antitoxins are not quickly developed, the soil is favorable for the growth of germs. These are more liable to the accidents of disease. One feels more anxiety with a surgical patient of this class.

The arthritic is more subject to vicious influences from within. Such a patient has developed antitoxins against tuberculosis, typhoid, and diphtheria, but dies of auto-intoxication. Here you may expect chronic rheumatism and persistent eczema. Here the fibroid changes are sure to occur. Our hope is that important and vital organs may be spared. The various cachexias, which have been defined as acquired diatheses, are equally important to notice.

We are taught that in the treatment of acute disease we must know in which direction lies the danger of death, and conserve that organ. In our middle-aged patients we should also know whether premature senility is attacking the heart, the lungs, the kidneys, the stomach, or the brain, and prolong their lives in accordance with that knowledge. The treatment is largely hygienic, and follows naturally from a clear conception of the condition. Our patient must not eat too much, and proper elimination must be constantly maintained. They need less meat, but are to eat more milk and cereals, as befits second childhood. Alcohol is more apt to do harm than good. There must be fresh air and exercise. There must not be sudden changes in temperature or altitude or habits. Medicines must not be too strong. Many old people have come to their death by a dose of morphine that would be moderate in middle life. A compound aloin pill may be required daily.

We must not look for the reaction symptoms in the old that we are accustomed to see in the same disease in earlier life. A pneumonia in a child is ushered in by a convulsion, in an adult by a chill, in an aged person by no symptom at all. Old persons do not have so much pain with biliary calculi, so much vomiting with cancer of the stomach, so much variation in the tendon and pupillary reflexes, so much systemic disturbance from diabetes, or so much elevation of temperature in fevers.

In our surgical cases a study of senility is equally valuable. We operate on the very old with good results, but on the prematurely or partially senile we must observe great caution. In the old we are especially careful to have the operating-room well warmed and to avoid excessive loss of blood. In a fractured hip we attend to the general condition of our patient more than to the position of the limb.

Summary.—The essential of old age is the replacement of parenchymatous cells by connective-tissue cells. This is caused by the destruction of the higher cells by accident, or, which is more usual, by toxins produced by the organism itself. Premature or partial senility should be recognized and treated.

A CASE OF APPARENT ABSENCE OF THE SPLEEN, WITH GENERAL COMPENSATORY LYMPHATIC HYPERPLASIA.*

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In looking over the literature for records of cases of absence of the spleen in persons whose viscera showed no other abnormality, one finds, as might be expected, the number to be small. That such cases have occurred seems to have been accepted as a fact by some pathologists. Rokitansky[1] states that the spleen may be entirely wanting. Ziegler[2] states that the spleen may be absent in very rare cases in otherwise healthy people, but neither of these authors enters into details of actual cases.

I find records of nine cases of alleged absence of the spleen. Of these nine cases, two were found in very young children, and the absence of the spleen was associated in both with various other abnormalities. In one of these latter cases (G. Martin[3]), a child, one and one-half months old, who died in convulsions, was found to have no trace of a spleen, but there were so many other structural defects about the child that it could not be said to have been in an otherwise healthy condition. In the other case, likewise (F. D. Birch-Hirschfeld[4]), a child who died an hour after birth was found to be without a spleen; the liver was enormously enlarged. While this case cannot be accepted as an example of the occurrence of absence of the spleen without detriment to health, yet so carefully was the autopsy conducted, and by so competent a pathologist, that it would seem certain that this case demonstrated at least the possibility of entire absence of the spleen. In passing, it may be remarked that

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absence of the spleen occurring in monsters and associated with absence of other important organs, like the liver, stomach, and kidneys, need not here be considered. As long ago as 1820 Hensinger[5] related several such cases, some having been observed as far back as 1564.

Coming now to the remaining seven cases of absence of the spleen in the adult, Jelenski[6] states that Meinhand, in St. Petersburg, autopsied a woman, aged fifty-seven, who had no trace of a spleen. He also states that J. J. Sachs, on February 8, 1845, performed an autopsy on an adult and found a similar condition of affairs to exist. Unfortunately, Jelenski gives no more details than are here mentioned. R. Libby,[7] in an article published in 1846, relates a case of a negro slave who was executed for murder in 1834, in whom no trace of the spleen could be found at the autopsy. This man during his life was subject to periods of melancholy, and was of a surly and irritable disposition. I am loath to accept this case without reserve, since it is stated that there was present in the abdomen, contiguous to the tail of the pancreas, an abscess (size not given) which was oblong in form. It seems not improbable that this abscess was the remains of the spleen. H. A. Ramsay[8] describes a case of a man, aged twenty-eight, who probably, judging from the description, died of general tuberculosis, in which the spleen could not be found. I am forced to believe from a perusal of the account of this case that the presence of the spleen was overlooked, and that it can therefore not be accepted as a case of true absence of the spleen. Koch and Wachsmuth[9] describe very briefly a case of a man, aged forty-nine, who was very large and very muscular, and who died of typhoid fever. The spleen is said to have been absent, and the splenic artery was wanting in this case. E. Moroni[10] and Gonzalez M. Olaechea[11] have each reported a case of complete absence of the spleen. I have been unable to obtain access to either of these two publications, neither have I been able to find abstracts of them.

The history of the case which I have to report is as follows:

N. W——, aged thirty-two, male, colored, native of United States, was admitted into Roosevelt Hospital, New York, May 4, 1898. Died, May 7, 1898. Family history negative, personal history unimportant.

Present illness. The patient felt perfectly well up to four days ago, when he was seized with severe headache and pains throughout the body. The pain was especially severe over the lumbar region, and was made even worse by stooping. On the following day pain over the left side of the chest became especially marked, and this was made worse on deep inspiration. There were no chills. A slight cough developed. For the past two days there has been pain all over the abdomen, which became somewhat distended. There has been some constipation for the past few days.

On admission. The patient was muscular and well nourished. Mucous membranes jaundiced. Pulse regular, but rapid. Tongue coated. The patient was apparently in great pain. Temperature, 105° F.; pulse, 134; respiration, 34. Urine negative. Examination of the blood showed a marked leucocytosis, but no malarial parasites were found. Physical examination negative.

On the morning of the third day of his stay in the hospital, or on the seventh day of his disease, the patient suddenly went into collapse and died. While he was in the hospital, the severe pain and gradually increasing jaundice were marked features. The temperature ran an irregular course, ranging from 99° to 105° F. The pulse was more nearly stationary at about 134.

Autopsy, seven hours after death. The body was that of a large, well-developed, muscular negro. The conjunctivæ were moderately jaundiced. There were several old scars on the anterior surfaces of the legs. In the peritoneum were several old peritoneal adhesions. Mesenteric lymph nodes were markedly enlarged. They were hard, and on section contained cheesy and calcareous material. The retroperitoneal lymph nodes, more especially in the region of the promontory of the sacrum, were also enlarged, cheesy, and calcareous. Some of these were one inch in diameter. The appendix was normal. The gall bladder contained no gall stones. All the viscera, as well as the fat and subcutaneous connective tissue, were moderately jaundiced. There were old adhesions over both lungs. Both right and left pulmonary arteries were filled with a firm red branching clot. The bronchial lymph nodes contained old fibrous and cheesy tubercles. Both lungs were considerably œdematous. The left pulmonary pleura was studded with many fibrous (healed) tubercles. Both lungs contained dense fibrous and cheesy tubercles, sometimes isolated, and at times occurring in conglomerate fibrous masses. They were rather more numerous in the right lung than in the left. In the heart several tiny, fresh (?) vegetations were found on the mitral valve. It was without appreciable stenosis. The heart muscle looked normal. The liver was large, weighing seven and one-half pounds. It was of a dark purple color. The organ was friable, and the cut section looked rather coarsely granular. The gall bladder contained one drachm of orange-colored bile. The common duct was occluded by a mass of enlarged lymph nodes pressing on it. The stomach was bile stained, and its mucous membrane was digested. The pancreas was atrophied. Notwithstanding careful search, no trace of the spleen was discovered. In the small intestine Peyer's patches presented a "shaven-beard" appearance, and occasionally the solitary lymph nodules were swollen. The large intestine was normal. Both suprarenals were larger than usual. The kidneys were large. They showed no macroscopic lesion. The brain and cord were not examined.

Anatomical diagnosis. Obstructive jaundice; chronic general tuberculosis; œdema of the lungs; absence of the spleen.

Microscopical Examination.—The more important microscopic features of this case were confined to the lungs, lymph nodes, the suprarenal capsules, and more especially to the liver.

Lungs. The nodules in the lungs were evidently tuberculous in character, although efforts to demonstrate tubercle bacilli were unsuccessful. The larger ones were mostly composed of a dense, cheesy material, oftentimes containing calcareous masses, and were surrounded by zones of dense fibrous tissue. Most of them were more or less pigmented, and in some of the smaller nodules giant and epithelioid cells were seen. The smaller blood-vessels commonly showed a fairly marked arteritis, with thickening of the media.

Lymph nodes. The bronchial lymph nodes showed the usual characteristics of chronic tuberculosis. The mesenteric and retroperitoneal lymph nodes presented several interesting features. First, both seemed uniformly involved. Second, on section each contained more or less in the centre of the nodule a dense mass of dry, cheesy material, often comprising calcareous matter, and making up from one-half to two-thirds the bulk of the node. The appearance of the cheesy material was quite uniform. No cell outline could be made out in it, and but very rarely could even nuclear fragments be detected. Tubercle bacilli were not found. Surrounding the cheesy masses were fairly thick zones of dense fibrous tissue, almost wholly devoid of nuclei. There seems to be little doubt that the process was of a tuberculous character and in a quiescent or arrested stage, although the nodules presented appearances not unlike those seen in medium-size

gummata. Third, surrounding the nodules just described there was a considerable lymphoid hyperplasia of the nodes. In this portion of the nodes there was no especial increase in the connective-tissue stroma. There had been but slight proliferation of the endothelium normally lining the reticulum, and the lymph nodules and perinodular lymph spaces as well as the capsule of the node were still fairly normal in appearance. It is evident to me from this examination that there had been in the mesenteric as well as the retroperitoneal lymph nodes an actual and considerable increase in the normal elements, *i.e.*, a compensating hyperplasia.

The suprarenals. The lymphatic hyperplasia, which was noticeable in some of the other organs, was particularly so in the suprarenals. In the medullary portion of the gland were numerous aggregations of lymphoid cells, some of considerable size. There was also some diffuse infiltration, and to a less marked degree there were smaller accumulations of spheroidal cells in the cortical portion. Apparently the increase in size of the suprarenals was due to the presence of the lymphatic new growth.

Liver. The liver was increased to twice its normal size. This increase in size and the dark purple color of the organ noted at the autopsy were due almost entirely to a dilatation of the liver capillaries between the liver cells. The dilated and distended capillaries occupied almost as much space as the parenchyma. The gall ducts were empty and collapsed. The branches of the portal vein were commonly dilated. The central vein was normal. The branches of the hepatic artery showed no change. Glisson's capsule throughout the liver contained a large number of cellular elements. The cells were here sometimes packed together in little compact masses, although throughout the whole of the capsule they were abnormally abundant. They were contained in a scanty, fibrillar stroma. The character of the cells varied. The most abundant resembled leucocytes or lymphocytes, and of these the small spheroidal mononuclear cell was the most numerous. Some of them were polynuclear, having from two to four nuclei, and some contained a single, large, finely granular nucleus (eosinophile cells). In addition to these forms, there were many larger and flat cells, resembling endothelium or epithelioid cells.

It is difficult to interpret this cellular proliferation of Glisson's capsule. It would seem possible that it was an early stage of biliary cirrhosis dependent upon compression of the common bile duct from adjacent enlarged lymph nodes. It seems also even more probable that this cellular proliferation was of the nature of a lymphoid hyperplasia of the pre-existing Arnold's lymph nodules, similar in character to the hyperplasia of the lymph nodes of the mesentery and retroperitoneum and suprarenals, and similar to the same increase in size of the solitary lymph nodules of the intestine which was noted at the autopsy. If the latter assumption is the correct one, we are justified in the belief that the process is a physiological one tending to compensate for the absence of the spleen.

Remarks.—This case furnishes several interesting features: (1) The occurrence of widespread tuberculosis exhibiting marked healing phases in an individual who failed to experience the usual symptoms therefrom. (2) The occurrence of sudden and fatal jaundice caused by obstruction of the common gall duct from an adjacent mass of enlarged lymph nodes. (3) The absence of the spleen in the adult without detriment to health. (4) The occurrence of physiological compensatory lymphoid hyperplasia of other parts of the lymphatic apparatus.

Regarding the question of the absence of the spleen in this case—namely, the possibility of this organ having been overlooked at the autopsy—I am firmly of the belief that this mistake did not occur. I am, however, prepared to admit that had the condition of the splenic artery been carefully determined with reference to possible anomalies of its terminal or splenic branches, and had these branches been found wanting, my case would thereby have received additional confirmation. I am also mindful, as I was at the time of the autopsy, that the spleen under certain conditions becomes greatly diminished in size and might therefore be more easily overlooked. Thus Stengel [12] quotes Savill as having seen a spleen in an adult which weighed but 3.63 gm., whose dimensions were but $1\frac{3}{8}$ by $\frac{1}{8}$ by $\frac{1}{5}$ in. Kuhn [13] has seen in a woman, aged sixty-four, a spleen of even smaller dimensions. Therefore, had each of the hundred or more enlarged mesenteric and retroperitoneal nodes been examined microscopically, with negative results so far as finding in them spleen tissue, my case would still have additional support.

Whether or not there regularly follows after extirpation of the spleen a compensatory hyperplasia of other lymphatic organs has not as yet been definitely settled. In none of the recorded cases of absence of the spleen, unless it be those of Moroni and Olaechea, was there any mention made of the condition of the lymph nodes. In my own case the lymphatic hyperplasia was well marked in the lymph nodes, liver, suprarenals, and intestines.

In the "American Text-Book of Physiology," page 272, I find this statement: "An increase in the size of the lymph nodes and bone marrow is said to occur after extirpation of the spleen, but this is denied by others." I have found no recorded case of extirpation of the spleen which was followed by autopsy, but in animals, as shown by the experiments of Winogradow,[14] K. Foa Pio,[15] and Mosler,[16] there follows in most cases after extirpation of the spleen a very considerable increase in size of the lymph nodes and bone marrow. In one of Mosler's dogs, however, which was killed eleven months after extirpation of the spleen, there was not the slightest trace of any alteration having taken place in the remaining lymphatic structures as a result of the operation.

Several cases in the human subject have been reported, in which the condition of the lymph nodes, thyroid, and blood have been noted after successful splenectomies. O. Riegner[17] reports a case of a boy, aged fourteen, seven months after splenectomy was done for rupture of the spleen. Four weeks after the operation gangrene of the left leg developed, which required amputation. In the amputated leg several enlarged (bohnengrosse) lymph nodes were found. Later the axillary, cervical, and inguinal lymph nodes became enlarged, and reached the size of hazelnuts. Considerable increase in size of the thyroid also followed. The swelling of these organs gradually subsided in this case, so that seven months after operation those in the axilla were alone palpable. Ceci [18] has observed a temporary increase in size of the tonsils and thyroid after splenectomy. On the other hand, Czerny, Billroth, Albert, and Trendelenburg, quoted by Riegner, have failed to observe any enlargement of the lymph nodes, tonsils, or thyroid, after successful splenectomies.

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Progress of Medical Science.

Treatment of Ectopic Gestation.—Dr. H. W. Longyear (*Annals of Gynæcology and Pediatrics*) summarizes as follows: (1) In all cases of intraperitoneal rupture, operate as soon as the diagnosis is made; do not wait for reaction to occur. Support such patients before and during the operation by application of heat to the extremities and back, transfusion of decinormal saline solution, rectal use of beef tea and saline solution, and strychnine, nitroglycerin, and digitalin by hypodermic injection. (2) If the hemorrhagic blood cannot be quickly removed, let it alone and use drainage. Do not flush the abdominal cavity to remove blood. The peritoneum will absorb the blood with much less danger than is caused by such manipulation. (3) Use silkworm gut *en masse* to close the abdominal wound, in case there has been great loss of blood, as the buried animal suture is not readily absorbed when such depletion has occurred. (4) Extraperitoneal hæmatocele is usually self-limiting and will almost always result in the death of the fœtus and the recovery of the patient. (5) In cases that go on to full term, operate at the end of pregnancy to save the child. Operate through the abdomen, drain through the vagina, and leave the placenta to come away by disintegration. (6) Electricity should be used only in cases so situated as to preclude the possibility of securing proper surgical treatment.

Hot Air in Hepatic and Renal Hemorrhages.—In Dr. Czerny's clinic Dr. Schneider has experimented on animals with steam and hot air in controlling hepatic and renal hemorrhages. He finds that steam does not control profuse bleeding, and is therefore not indicated in renal or liver hemorrhages. On the other hand, hot air is of value and deserves a trial on the human subject. Hollander's apparatus was employed in these experiments, but is not suitable for the purpose suggested.—*Beiträge zur klinischen Chirurgie*, Bd. 2, H. 3.

Nose and Throat Affections and their Relation to General Medicine.—Dr. Walter F. Chappell (*Medical Review of Reviews*, April) says: "Several innocent rashes, resembling in appearance the rash of scarlet fever and measles, are accompanied by throat symptoms, which may readily lead to a mistake in diagnosis. For instance, some persons are very susceptible to certain fish poisons, and may develop a pyrexia and pharyngeal redness, with a rash closely resembling that of scarlet fever. Again, certain persons subject to recurrent follicular pharyngeal tonsillitis develop a bright scarlet rash over the chest and back, as one of the initial symptoms of approaching tonsillitis. A member of my family had this peculiarity, and it so happened that a number of physicians saw her, during numerous attacks, and all at first thought they had a case of scarlet fever with which to deal. The rash in such cases has not lasted, in my experience, more than twenty-four hours, and often a much shorter period, and does not spread beyond the parts stated."

The Study of Hysteria in Childhood.—Dr. Herman B. Sheffield (*New York Medical Journal*, September 24th) summarizes the contents of a paper as follows: (1) Hysteria is a neuro-psychosis, manifesting itself in an array of functional disturbances of one or all of the higher centres (intellect, feeling, and will), with secondary changes in the lower ones, underlaid by a morbid condition of the nerve substance. Whether this defect lies in the neuron, in the nerve cell, in the nerve fibre, or in all of them, is a question as yet awaiting correct solution. (2) The etiology of hysteria in childhood is, like that in the adult, very obscure. Anything that lowers the vitality of the patient serves as a predisposing cause. The rôle played by heredity as an etiological factor of hysteria is overestimated. Much more weight must be laid upon the acquired causes, among many of which imitation, faulty methods of education and discipline, alcoholism in the young, and trauma are deserving of special mention. (3) Hysteria attacks boys as well as girls, the ratio being as one to two. It is comparatively rare in children under eight years of age, although youths eighteen years old are not exempt from it. (4) The symptomatology of hysteria is characteristic for its changeability and multiplicity. In the United States it is observed, as a rule, in the following order of frequency: (*a*) Spasmodic affections (convulsions, spasm of the laryngeal muscles—croup—contractures, catalepsy); (*b*) sensory symptoms (painful sensations, anæsthesia, blindness, contracture of visual field, hemianopsia, deafness); (*c*) motor disturbances (paralysis of the extremities, paralysis of the laryngeal muscles—aphonia); (*d*) visceral and vasomotor disturbances (affections of the alimentary canal, dyspnœa, tachypnœa, hyperpyrexia). (5) The treatment consists in removal of the causes, attention to general hygiene, isolation and rest, suggestion and hypnotism. The duration of this disease depends greatly upon the skill in treatment; the prognosis is, at all events, favorable.

Visceral Anæsthesia in Tabes.—Dr. Pitres (Fr. Congress for internal Med., 1898) calls attention to a new form of visceral anæsthesia in locomotor ataxia. The extreme sensitiveness of the epigastrium to pressure or blows in the healthy individual is well known. In the examination of fifty tabetic subjects, the writer found this sensitiveness normal in twenty instances only, in thirteen cases it was lessened, and in nine entirely absent. In such patients there is neither skin anæsthesia of the abdomen nor increased abdominal-wall reflex. On the other hand, in many of them the feeling of hunger and of appeased appetite is lost.

Poisoning by Opium and its Alkaloids.—Dr. Paul Schenk, in an original article in the *Deutsche Medizinal-Zeitung*, August, draws the following conclusions: (1) Opium simulates morphine poisoning in its essential points. (2) Death following poisoning by opium and its alkaloids is due to poisoning of the central nervous system. (3) Of all the alkaloids, codeine stands next to morphine in its poisonous effects. (4) All the other alkaloids have either no poisonous properties or are very mildly poisonous to the human system. (5) From the post-mortem examination alone in a case of poisoning by opium or morphine, it is not possible to decide whether death was due to acute or chronic poisoning. (6) In a doubtful case the most

important point is the history, and next in importance is the chemical analysis. (7) Chemical examination should be made even in cases in which a positive history is obtained.

Hypnotism in the Treatment of Alcoholics.—Dr. Rybakow, in an article in *Wratsch* for August, draws the following conclusions from cases under his own observation as well as from the literature on the subject: (1) Alcoholics are very susceptible to hypnotism, and subject themselves to the hypnotic influence much more readily than many other patients. (2) Hypnotism is a very good remedy in the treatment of alcoholism. (3) The favorable effect of the treatment shows itself in the improvement of the subjective symptoms, the disappearance of the depression, of the apathy, and, finally, in the complete loss of the thirst for alcohol. Sometimes one sitting suffices not only to overcome the desire for the habitual potion, but also to break off an acute attack. (4) By repeating the sittings one may at times delay the patient's cravings; the intervals, however, vary, depending entirely upon individual characteristics. (5) Complete cure by hypnotism, according to the experience of the author, is seldom obtained; relapses also are proportionally frequent. However, other authors report instances of complete cure by hypnotism. The duration of the treatment depends especially upon the degree of degeneration; the milder the degeneration the more positive and lasting the cure. (6) Relapses are most frequently noticed in patients under this treatment when the sittings are discontinued too early. (7) In the treatment of the craving for alcohol by hypnotism, the utmost care should be taken in reference to the promptness of the sittings. (8) The hypnotic treatment may be instituted at any time; it is, however, better that the sitting take place during the state of sobriety. At all events, it should be delayed until the agitation and hallucinations have subsided.

Small-Pox and Phthisis.—That variola predisposed the subject to tuberculous affections was long since advanced by Landouzy. In confirmation of the theory, Dr. Lop (*Bul. de l'Acad. de Méd.*, September 6th) now brings forward a series of sixty-four observations, to which are added seventy-six by other observers, all going to show that the form of tuberculous disease is more severe and runs a more rapid course.

Enlarged Cervical Glands.—When a patient comes to you with enlarged lymph nodes of the neck, be sure to examine the throat most carefully. If the patient is a child, remember that a very common cause of lymph-node inflammation is the presence of hypertrophied tonsils or of adenoid vegetations. In an individual of middle age, examine any hypertrophy critically, bearing in mind the possibility of neoplasm.—*International Journal of Surgery.*

Cholelithiasis.—Dr. Naunyn, of Strasbourg, draws the following conclusions: (1) In biliary colic the gall-bladder tumor depends upon a cholecystitis. (2) The pains in the so-called biliary colic are in many cases due to the existing cholecystitis. (3) The icterus which is seen in biliary colic frequently depends upon the cholecystitis, or more so upon the accompanying cholangitis; it is often an inflammatory icterus, in contradistinction to the "lithogenous" icterus which may occur when the stone exists in the common bile duct and prevents the outflow of bile. (4) There are cases in which a cholecystitis presents the picture of a biliary colic, in which gall stones are diagnosticated, when in reality there is only a cholecystitis. (5) Such cases of cholecystitis may run their course during an attack of biliary colic. In a few days the pains cease, the swelling of the gall bladder diminishes, icterus and fever, if they existed, disappear. (6) The cholecystitis may occur independently at an earlier or later date. The pains concentrate themselves in the gall bladder, or they assume a secondary importance, while symptoms of infection (fever, general malaise, prostration) become prominent. Such cases may prove fatal on account of metastatic deposits, or they may lead to a chronic cholecystitis, to hydrops or empyema of the gall bladder, or they may finally run a favorable course by expulsion of the stone. (7) Cholecystitis and cholangitis give rise to numerous sequelæ of gall stones, such as abscess of the liver, perforation of the stone toward the exterior or into an internal organ, as well as numerous fistulous tracts. (8) According to Riedel, the colic is caused by the pushing of the stone into the cystic duct, on account of the serous transudation which results from the inflammation of the mucous membrane of the gall bladder. (9) The diffuse cholangitis goes hand-in-hand with the calculous cholecystitis. If the cholecystitis is the cause of the swelling of the gall bladder, then the cholangitis is due to the painful swelling of the liver. A cholangitis which spreads to the finest gall capillaries (cholangitis capillaris) can give rise to jaundice very quickly, by directly influencing the secreting liver cells. (10) The cholecystitis and the cholangitis calculosa are infectious from the outset. Whereas normal bile is sterile, the fresh cases of cholecystitis calculosa always showed the bacterium coli in the gall bladder. In older cases the bile may be found sterile; the bacterium coli seems to die very quickly at times. This cholecystitis and bacterium-coli cholangitis seldom become purulent, except when pyogenic bacteria—staphylococci and streptococci—infect them; they must be distinguished from empyema of the gall bladder and suppurative cholangitis; still they may give rise to severe local and general symptoms without becoming purulent. (11) A cure of the cholecystitis and cholangitis may be expected when the circulation of bile is once more established and the gall stones are dislodged. Even if the stones be not displaced, the case may terminate favorably, according to Riedel. Then it may be that the symptoms are simply on the retrograde, while the cholecystitis still exists, remaining latent only to recur again; or the biliary colic may in reality be cured, for a long time at any rate. (12) Apart from the cholecystitis and cholangitis, the gall stones become a source of danger on account of the chronic obstructive icterus. The latter depends principally upon the closure of the common bile duct with stones. The large stones which are found in the common bile duct have wandered, in most cases, from the gall bladder when quite small, and have grown larger and larger. The cause of chronic jaundice in cholelithiasis is by no means always a stone in the ductus communis choledochus; in many cases the seat of the stone may be the cystic duct, and thus give rise to compression of the common duct. On the other hand, very large stones may exist in the common duct without giving rise to icterus. (13) There is no positive differential point for determining which cases are going to be successful and which will result otherwise; the symptoms are the same and the passage of stones does not decide the question. In those cases in which stones are found in the stools, others may remain behind, and even though we do not find any stones it does not prove that the attack is a favorable one. (14) In more than half of the cases carcinoma is found as the cause of the chronic obstructive icterus. In some cases nodules may be felt in the wall of the gall bladder; in others, metastases in the liver, lymph glands, or upon the peritoneum. One must never fail to examine the pouch of Douglas—that is, to palpate the rectum. In most cases, however, such metastases are not found; then the existing ascites affords corroborative evidence, for

marked ascites with cholelithiasis always points to carcinoma. The significance of cachexia is not to be underestimated; if this occurs rapidly in the course of cholelithiasis, it speaks for carcinoma. In chronic icterus not due to carcinoma, the general strength and nutrition remain good for a considerable period.—*Münchener medicinische Wochenschrift*, October 4th.

Ruptura Vaginæ sub Coitu.—Dr. Finkelkraut reports (*Gazeta Lekarska*, No. 7, 1898) a case of rupture of the vagina sub coitu, and enumerates the following etiological factors: (1) Abnormal erection of the penis during coitus. Normally the penis passes along the posterior wall of the vagina. In retroversion, as well as during coition, the uterus sinks downward and backward; thus the stretched posterior wall is easily ruptured by the abnormally erected penis. (2) Insufficient development of the vagina or the weakness of its walls, as in cases of senile atrophy of the genital apparatus. (3) Too great a disproportion between the male and female genital organs. (4) Extremely impetuous coition with unusual violent erection. In the case reported two of the etiological factors were present—atrophy of the vaginal walls and abnormally violent coition.

Leucocytosis in Whooping-Cough.—Dr. H. Meunier (*Archives de Méd. des Enfants*, April) advises making a blood examination in order to arrive at an early diagnosis of whooping-cough, especially when it is important to exclude the disease from schools and institutions. The writer states that in children suffering from whooping-cough there is a constant and intense leucocytosis of the blood. Sometimes it reaches a very marked degree; at all times it surpasses the leucocytosis accompanying the other febrile affections of the respiratory tract. The leucocytosis is present long before the characteristic whoop appears; it becomes most marked during the whooping stage and disappears with the diminution of the cough. In the catarrhal state there are about 22,700 leucocytes to 1 c.c.; the number increases to 40,000 in the whooping stage. The leucocytosis is most marked in children two or three years of age. The leucocytosis is due especially to the immense increase in the number of the lymphocytes; the normal proportion of the lymphocytes to the polynuclear leucocytes is reversed. It is not simply a lymphocythæmia, however, for all varieties of leucocytes are increased in number. We are still in the dark as to the cause of the leucocytosis, but it is evident that the congestion of the tracheo-bronchial glands has more or less to do with it. The increase in the number of leucocytes would tend to confirm this view. The constancy of the leucocytosis in whooping-cough; its marked intensity as compared with that occurring in all other respiratory affections; and, lastly, its early appearance before the clinical symptoms are marked, make a blood examination imperative whenever it is necessary for prophylactic reasons to establish an early diagnosis.

Natural Labor.—Dr. Robert R. Rentoul, of Liverpool, defines a natural labor as follows: "Labor at the ninth calendar month in a woman free from organic and functional disease of the heart, lungs, kidneys, brain, and other internal organs, and from all fever diseases; when there is no impediment in the maternal passage of either soft or hard nature to the descent of the child; when there is only one child in the womb; when the vertex of the child alone presents in either the first or the second occipito-anterior position; when labor is completed within twelve hours from its commencement; when a living child is born; when neither instrumental nor manual operations have been required; when the afterbirth comes away without the use of manual operation within twenty minutes after the birth of the child; when there is no laceration of any portion of the parturient structures; when the mother does not die within thirty-one days after confinement, and when there is no puerperal fever."

Indications for Irrigation of the Stomach.—Martius states as follows the indications for lavage of the stomach: (1) Acute poisoning; the introduction of the water dilutes the poison and renders it less harmful, and it can be withdrawn with the fluid. (2) Stagnation in the stomach from stenosis of the pylorus, whether due to a benign or malignant growth. (3) All cases of occlusion of the intestines from whatever cause. Irrigation always relieves and may possibly cure without further treatment. Guerin commends it in the current *Archives de Bordeaux* for its action in arresting the painful vomiting of fæcal liquids, while it allows medicines to produce their proper effect. It is also generally indicated in carcinoma ventriculi, acute and chronic catarrh, and all functional diseases of the stomach. Also in tympanites such as occurs in severe abdominal typhus and in nervous dyspepsia and spasm of the œsophagus. Others have found it very beneficial in infantile gastric and bowel troubles, acute and chronic. Some consider it ineffective in neurasthenia gastrica, but it often produces a cure in nervous dyspepsia when the patient can be made to see for herself that her stomach is digesting normally. Minkowki has found it very valuable in arresting hemorrhages. He suggests that the time of using it is very important; if the patient is allowed to eat again soon, the benefits are often lost. He advises it the last thing at night. Quincke also uses the irrigator for removing the liquid.—*Memorabilien.*

Digestive Ferments.—As to ferments, the following general statements may be made: (1) There is no information or reasonable supposition that a ferment of the digestive glands is ever produced in excess. (2) The failure of a ferment occurs only in the most serious organic disturbances—though not necessarily locally organic; thus fever is often attended with failure of ferments. The salivary ferment is particularly resistant to disease, though not of very great importance in health. (3) The administration of ferments should never be resorted to without previous demonstration of their absence. (4) After proving that a ferment really is deficient—something that occurs in scarcely one per cent. of cases—we must ask whether the stomach and intestine are in a condition to digest on the mere supplying of the ferment, or whether predigestion, rectal nutrition, etc., are not indicated. As a rule, the body which lacks ferments lacks the power of using them if artificially supplied.—A. L. Benedict, Buffalo.

Selection of Chloroform as an Anæsthetic.—Dr. Miron I. Marsh is credited with the following statements: Chloroform is generally to be given preference as follows: (1) Organic diseases of the nervous system. (2) Atheroma occurring in those advanced in years. (3) Chronic or acute inflammatory affections of the respiratory tract, as severe bronchitis, asthma, emphysema, or advanced tuberculosis. (4) Protracted operations about the nose, mouth, or pharynx, which necessitate the nose and mouth being uncovered. (5) Night operations with artificial light, unless the light be placed much higher than the ether, its vapor being heavier than air. (6) When the galvanic cautery is to be used in the neighborhood of air passages. (7) When ether has failed or cannot be procured, or when there is a distinct record of deleterious effects during a previous etherization. (8) Renal diseases, both acute and chronic. (9) Chronic alcoholism. (10) Old age, young children. (11) During labor. (12) Puerperal eclampsia when an immediate effect is required.—*Cincinnati Lancet-Clinic*, September 10th.

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FEMALE DISEASES AND INSANITY.

IT is perhaps the inherent vanity in the race that keeps it alive. Were every man to look at himself with the strictly impartial view of his neighbor, his self-appreciation would ooze out, his upwelling ideas would leak away, and his ambitions would sink to the low levels of other men's esteem.

Ah, no! it would not do to stand on the street corners and smite our breasts as miserable sinners. It is far better to congregate in high places, in clubs, in medical societies, and in the editorial corners of our journals, and unite our voices in thanks that we are not as other men are. Then our fellows may see how wise are the tenets of our specialty and how false are other men's.

Who but the greedy, grabbing gynæcologist would insist that it is disease of the ovaries or false position of the uterus that causes the trouble, when it is transparently plain that the nerves are the seat of the disorder? And why should not the triumphant neurologists congregate and rejoice when they see the value of their claims recognized and the fees running in their direction? Witness the recent appreciative abstracts of the Italian observers, Angelucci and Pieraccini, in their international inquiry on the relationships of diseases of woman and nervous disorders.

One of the most pronounced articles illustrating the general point in question, and one which should receive the attention of both neurologists and gynæcologists, has recently appeared in the *American Journal of Insanity*, vol. lv., 1898, No. 1, July, entitled "Surgery among the Insane in Canada," by R. M. Bucke, M.D., president of the Medico-Psychological Association.

He has been led to believe that there is a great deal of pelvic disease in female lunatics, and that such disease has often a causative relation to the mental alienation existing. His investigations in the London (Canada) Asylum, the examinations being made by a competent gynæcologist of that city, show that of 132 patients there was organic disease of the generative organs in 122, only 10 being free. Of the 122 cases of organic disease 109 had been operated upon. In the report of the pathological conditions operated upon, many minor troubles were mentioned. His tables included: menorrhagia, 14; endometritis of various grades, 62; hypertrophied cervices, . rated cervices, 34; cystic cervices, 19; polypi o cervix, 3; fibroids, 7; epithelioma and sarcoma, each 1; retroversions, 33; procidentia, 5; ovarian tumors, 8; perineal injuries, 22; and fistulæ, 2.

The results in the 109 cases were:

(1) As regards bodily condition. Three died from the operations and all of the rest were improved.

(2) With reference to the mental condition. In 39 cases the patients recovered from their insanities, in 32 cases there was marked improvement, and in 35 there were no changes for the better. The author's conclusions, in view of the almost chimerical nature of the results, are worthy of reproduction. "Should it be once conceded by those who have charge of the insane, by those men to whom the general profession looks for guidance in these matters, that utero-ovarian diseases are capable of acting as causes of insanity and that removal of these will in some cases result in the disappearance of the mental disturbance, almost at once it would happen that many insane women instead of being sent to an asylum would be operated upon and relieved at home. More than that, if the connection in question were admitted, these women would not be allowed to remain insane at home for months, and often years, as happens now, but would be examined, operated upon, and relieved within a few weeks of the appearance of the insanity. More even than that, when the eyes of the general profession are fully opened upon this subject, symptoms of subinvolution, endometritis, or laceration of the cervix will be watched for after childbirth, and if present be at once relieved; and the women who might have become insane in consequence of one or other of these lesions will remain sane."

The Italian compilers above mentioned reported, as the result of an international inquiry, hearing from large numbers of both gynæcologists and neurologists, that the relationships in question of pelvic disease and insanity were *nil*. And here we have this roseate picture!

VEGETARIANS IN EVIDENCE.

THOSE who advocate and practise abstinence from animal food are beginning to direct attention to themselves and their theories in several quarters. In Germany the recent bequest, by the will of Professor Baron, of sufficient funds to found and maintain an orphan asylum in which vegetarian principles were to be inculcated and observed, has created considerable discussion in Berlin. It seems that after the professor's bequest had been formally accepted by the mayor of the city, objections were raised by members of the council, which includes such well-known physicians as Virchow, Fürbringer, and Fraenkel. It was contended that the authorities should hesitate before subjecting its orphan wards to what must still be regarded as an experiment in diet.

While it is quite possible that in many countries much more meat is consumed by the individual than the requirements of a healthy system demand, still it

would seem that in some climates the manual laborer actually needs a certain proportion of such food in his daily diet as is furnished by animal muscle and fat. As an indication of what may be accomplished in the way of muscular effort on a purely vegetable diet, the winner of a recent foot race in Berlin, who was a vegetarian, covered the distance of fifteen German miles in fourteen and one-quarter hours without showing any signs of marked fatigue. This was also the case, according to *La Médecine Moderne*, with the five other vegetarians who took part; while of the eleven non-vegetarians in the contest, only one was able to finish, and he came in far behind the others and in bad form.

ACUTE ARTICULAR RHEUMATISM.

That acute articular rheumatism is a disease due to a specific micro-organism has been believed for a number of years, and in recent times several bacteria have been described, but apparently with little or no confirmation. One observer, however, would seem to have fared better, in that recently his claims have been substantiated by other investigators, and it may be hoped that the elusive cause of acute articular rheumatism is finally located.

As early as 1891, P. A. Achalme announced that he had found the bacterium of acute articular rheumatism. For some reason or other he was unable to follow up his discovery with confirmatory proofs, and it was not until late in 1897 that he was enabled again to isolate the organism. He then published, in the *Annales de l'Institut Pasteur*, 11, 1898, p. 845, "Recherches Bacteriologiques sur le Rheumatisme Aigu," a more detailed report concerning the bacterium in question. He describes it as an anaerobic bacillus, which resembles in its general morphology the bacillus of anthrax. It is moderately motile, is colored readily with most of the aniline dyes, showing a capsule. It rarely forms spores, and when formed they are developed on the end. Its maximum growth takes place between 30° and 38° C., and temperatures below 25° or above 40° C. limit or destroy its growth. One interesting fact relative to its biology is that when grown in urine it decomposes this, throwing down extensive deposits of urates. Following Achalme's publication, many bacteriologists claimed that he had isolated only one of the many anaerobic bacteria which were commonly found in dead bodies, and were in reality bacteria of putrefaction. In a more recent communication, "Recherches sur l'Anatomie Pathologique de l'Endocardite Rheumatismal," *Archives de Médecine Experimentelle et d'Anatomie Pathologique*, 10, 1898, p. 370, he reports having found the organism again in two cases, and he controverts the statement that this bacillus is one of the putrefactive post-mortem anaerobes. To verify this he examined thirty post-mortem cases, and in no one was his organism found. Achalme, moreover, states that it was the exception rather than the rule to find the bacillus in the blood of patients suffering with the disease. Finally, in the *Archives Russes de Pathologie, de Médecine Clinique et de Bacteriologie*, 5, 1898, p. 613, Sawthenkow completely confirms the researches of Achalme. He, in addition, shows that the organism elaborates negative chemotaxic substances and also products which produce necrosis in animal tissues. The characteristic endocardium lesions he believes to be due to these latter substances. Experiments made by him would seem to show that the action of sodium salicylate is due to the liberation of free salicylic acid.

THE BERTILLON SYSTEM OF MORTALITY STATISTICS.

A decision, of which the importance can as yet be hardly estimated, was come to at the recent meeting of the American Public Health Association, held at Ottawa, Canada, in September last. The following resolutions, which had been submitted by the committee on vital statistics at Philadelphia in 1897, were favorably reported by the executive committee, and were then unanimously adopted by the association: (1) That the American Public Health Association recommends that the Bertillon classification of causes of death be adopted by all the registrars of vital statistics in the United States, Canada, and Mexico, as soon as the change from the systems now in use can be conveniently made. (2) That the committee on nomenclature of diseases and forms of statistics (now the committee on demography and statistics in their sanitary relations) be authorized to have printed and circulated among the registrars of the three countries a circular containing these resolutions, the report of the committee on which they are based, the three alternative forms of the Bertillon classification, with explanatory notes on inclusion of terms and practical rules for compilation and a list of the registration offices adopting the same. (3) That a proposal be made for an international alliance between the registrars of the three countries included in the association, and the registrars of France and other countries now using, or which shall hereafter adopt, the Bertillon system, and that definite plans for such alliance shall be submitted for action to the next annual meeting of this association. It was also advised that the selection of a plan of international revision should be undertaken at once, in order that the revised classification might be ready for use in 1900, and the statistics of the next century might be begun on a uniform basis.

The need of a uniform system of classification of causes of death has long been felt, and now that the whole continent of North America has taken the initiative in the matter, together with Costa Rica on the Southern continent, the co-operation of the remaining States of South and Central America may be looked for with assurance. But this is not all. France has for a considerable time thoroughly tested and demonstrated the usefulness of the system; some of the smaller European States have followed suit. Does it not therefore seem both desirable and in the interests of the civilized world at large that the other European countries, the British Empire, and Japan, should fall into line and support the plans for an international

alliance of revision? Doubtless there will be many and great difficulties in their way; old countries which have had for years systems in use, and to which they have become by custom welded, may at first feel averse to a change. But none of these difficulties are insuperable, and when the advantages of the proposed revision are weighed in the balance with the drawbacks thereof the most conservative of nations will throw aside all considerations of sentiment or pride and resolve for the good of mankind to adopt a uniform system of statistics.

It is hoped that the first revision may be completed and announced at the International Congress of Hygiene and Demography at the Paris Exposition in 1900. The statement to the following effect is made by Cressy L. Wilbur, M.D., secretary of the United States commission, in the *Michigan Monthly Bulletin of Vital Statistics*, that "a pamphlet containing the official version of the classification, and showing the inclusion of terms, will be ready for distribution about January 1, 1899, and will be sent to all who may signify their desire to aid in the work of revision." When the metric system and the Bertillon system of classification are in universal vogue, matters will be much simplified for sanitarians, medical men, and men of trade.

SCIENCE MADE IN GERMANY.

It was certainly in a facetious spirit that Gruner, advising medical men, wrote in his "Almanach," published in Germany over a hundred years ago: "Go on a trip if possible. Knowledge gathered in Paris or Edinburgh is better than German wisdom." Of course everybody knows that knowledge acquired in Germany was then, as it is to-day, a superior article. Perhaps, in employing the term "everybody," we are making the case too strong, since at least two exceptions can be instanced. In a recent interview with Dr. Heneage Gibbes, who for many years occupied the chair of bacteriology in the University of Michigan, he is reported to have answered a query as to his views on the claims of superiority of German science: "There is no such thing as German science—science is universal. The Mecca of the American physician is Berlin; nothing good can come from any other source than Germany in the science of medicine as taught in American schools. The admiration of German scientists is nothing short of idolatry. In Germany Dr. Koch's theories are generally regarded as theories; in this country they are held to be facts. I taught along the lines of Koch, but presented results only for what they were worth."

The other exception is the editor of the *Medical Brief*, who considers it bad policy to permit an issue of his journal to appear without placing himself on record as opposed to the "greed and narrow-mindedness of Germany" in excluding American products, while sending us useless serums, etc. In speaking of foreign study, he says: "If they must go abroad, far better, it seems to us, would it be for American medical science if students would go to England for their post-graduate courses. See Germany and France, by all means, and pick up all that may be found good; but study in England, where there are conservatism and common sense."

Fortunately the necessities for going abroad for scientific study are becoming year by year so decreased that students will soon not need seriously to consider the matter of where to go. They may finish in the various schools of this city, for example, and then, in pursuance of the "Almanach's" advice, "go on a trip," for the prestige it affords or for the pleasure, but not in the belief that knowledge gathered in foreign parts is always so superior to the domestic article that it must be bought.

A WORD ON THE SPITTING-NUISANCE.

We think that the transportation lines of this city deserve a word of commendation for their efforts to abate the spitting-abomination in the street cars under their control. Most of the cars in the city are now provided with one or two neatly framed signs printed in emphatic type, which state that spitting upon the floor is forbidden by order of the board of health. However, many of the spitters in human form seem unable to see these signs, or else are so unclean and careless as to disregard them, and the employees of the companies do not display any particular enthusiasm in calling attention to the regulation. It seems almost too much to hope that spitting in public places can ever be wholly overcome by anything but the danger of a penalty for the offence, such as a small fine. The authorities of the street railways might, however, insist more strongly that their employees should rigidly enforce the antispitting rule, and, if necessary, eject the offenders. At present the conductors seem willing enough, when requested, to call attention to the rule, but they should take the initiative and not wait for a request. The worst offences are not on the cars of the main lines in the city, but occur on the cross-town and other less prominent lines, in cars which probably get less frequent cleanings than those on more important streets.

To stop spitting upon sidewalks seems too much to expect, unless we can have and enforce a penalty against it. It would probably not take many enforcements for the knowledge to become disseminated that it would cost, say $2, to misuse the sidewalks in this way; and that to this might be added some unpleasant newspaper notoriety, for the spitter is not always one to whom such advertisement would be a matter of indifference. With a little more effort by our car-line officials a very decided abatement of this nuisance in public vehicles can be obtained, and thus indirectly spitting in the street diminished. We ought to be able to depend upon the lay press in this matter, as it is one of common decency and the concern of all.

In Extremis.—Husband: "My darling, when I am gone, how will you ever be able to pay the doctor's bill?" Wife: "Don't worry about that, dear. If the worst comes to the worst, I will marry the doctor."

News of the Week.

Camp Sanitation.—The interest aroused by the alleged unsanitary condition of some of the camps in the recent war has found expression in Buffalo in the desire for a meeting of sanitarians and others—experts in their lines—to present the details of establishing camps of instruction constructed upon strictly hygienic principles—asphalted floors and streets, water system, sewerage. The various phases of the subject will be briefly considered from economic, military, and sanitary aspects, and the consensus of the whole presented with the idea of creating a public demand for such camps. In issuing a circular relating to the proposed meeting, Dr. Ernest Wende, chairman of the topic committee of the Sanitary Club of Buffalo, says that it is not intended that any criticism be introduced in any manner whatever concerning the recent war, but merely to discuss the feasibility of permanent camps of instruction, to be maintained ready for use at any time desired by the general or local government.

Infected by Absorption.—An eye quack, who advertises to cure all diseases of the eyes by the simple process of "absorption," recently admitted to his house a patient with gonorrhœal ophthalmia; and, as it is a poor rule that does not work both ways, and absorption at that time was working freely, many of the other inmates caught the disease. Each sufferer was assured there was nothing the matter, and that it was all in his eye. The true nature of the disease was finally discovered in time to save the sight of the victims, and now the latter are suing the quack in the hope of absorbing some of his dollars as a sort of salve for their sore feelings and sore eyes.

The Gentle Anti.—A dinner was given in honor of Virchow, on the occasion of this grand old medical man's recent visit to London to deliver the Huxley lecture. During the evening, while toasts were being drunk to the health of the guest and complimentary speeches were being exchanged, an unsigned telegram was delivered to Virchow, which read: "Get thee hence, vile vivisector! England spurns thee!"

Standing-in with the Doctors.—An undertaker on the west side of the town has opened an eye to the main chance, and at the same time betrayed his exalted opinion of the physicians in his neighborhood, by addressing to them the following practical suggestion: "Kindly take notice of my new branch office at ——, —— Avenue, for funeral directing and embalming. I am fully prepared to give entire satisfaction and the best of references. Should you have any friends to whom you can refer me, I will allow a liberal commission, say five to fifteen per cent., for such favors shown."

Reciprocity in Registration in Canada.—At the annual meeting of the Canadian Medical Association, held in Quebec in August last, a decided advance was made in the direction of interprovincial medical registration. At present our neighbors suffer, as we do, from the anomaly that a skilful and learned physician who is a legally qualified practitioner in one portion of his country is liable to arrest and punishment as a quack if he attempts to practise his profession in another part, without first submitting to an examination at the hands of a board composed possibly of men in every way his inferiors in medical attainments. It is now proposed to establish a central examining-board for the whole dominion, and those who pass it will thereafter be entitled to practise in any province.

Dr. Sigmund Tynberg has been appointed visiting physician to the Workhouse and Almshouse hospitals.

Orrhotherapy of Hog Cholera.—During the past two years the department of agriculture has conducted a series of experiments in the use of serum as a remedy for hogs affected by cholera or swine plague The experiments were conducted by Dr. D. E. Salmon, chief of the bureau of animal industry, and the results were eminently satisfactory, proving that the disease can be successfully treated easily and inexpensively. Very many remedies have been tried, but nothing even approximating a specific for the disease has ever before been discovered. The experiments thus far made show that 80 per cent. of the affected hogs are now saved, while formerly 80 per cent. were lost. Last year the experiments were conducted in Gage County, Iowa, the results showing a loss of only 20 per cent. of the affected droves. This year the experiments have been much more extensive. The officials of the agricultural bureau treated 922 hogs. Of these 170 died, the number saved being 81 out of every 100. The loss was only 19 per cent. On the other hand, 1,107 hogs in other droves were observed, but not subjected to the serum treatment. Of these 879 died, showing a loss of 79.8 per cent.

A New Degree for Lord Lister.—On October 8th the new Thompson-Yates Laboratories of Physiology and Pathology at Liverpool were opened by Lord Lister, who delivered an address upon the unity of science and practice and the need of raising our practice to accord with the accuracy and certainty of science. Upon the conclusion of his address he was the recipient of the honorary degree of doctor of science of the Royal Victoria University.

Mud Throwing by the Besmirched.—The disgraced Behring, whose desperate efforts to trade in infant lives have been reprobated even by his own countrymen, now seeks to defend his misdeeds by the impudent assertion that earlier medical discoverers and inventors only lacked the opportunity to equal himself in depravity. A writer in the *Berliner Tageblatt*, having asked what would have become of the ophthalmoscope if Helmholtz had made a claim to patent his invention, or what would have become of the methods of immunization devised by Pasteur, or of the antiseptic dressing introduced by Lord Lister, if these gentlemen had acted like Behring, the latter replied that Helmholtz of course could not have attempted to patent the ophthalmoscope as there were no patent laws at that time, and that what Pasteur and Lord Lister would

have done, supposing that it had been possible for them to obtain a patent for their discoveries, he did not know, but he implied that from what he knew of these scientists they would have made money out of their discoveries if they could. This ingenious gentleman forgets to mention, however, that even if the two dead men, whose memory he traduces, and the living one, whom he insults, had stooped ever so low, they could not have fallen to the depths of "lifting" the discoveries of others and attempting to sell them as their own.

Chickamauga Camp comes up once more this week for severe criticism. Since an article in these columns several weeks ago, placing the blame for much of the typhoid and other illness in camp, several surgeons have testified to similar conditions of army and medical mismanagement. Dr. Milo K. Ward, brigade surgeon, has just testified in Chicago, blaming high officials. "The first reason," he said, for the second division hospital of the third army corps having the reputation of being the worst, "is that the hospital had for its corps surgeon a man who never paid any attention to it whatever. His name was Hof. The next reason is that the man in charge of the hospital, the division surgeon, very seldom visited the hospital or paid any attention to it. His name was Jenney. The next reason is that there were not enough doctors to take care of the patients without overworking the doctors and making them too ill to get out of bed. For the first two weeks that I was there there was not a man on duty who was physically fit for duty. The next reason is that the nurses were never competent. They did the best they could. Some of them could not even read. They were forced to do this work under protest. The requisitions made for goods and supplies were approved by the doctors, but they were not brought to the grounds. That was the fault of the doctors in charge of the hospitals."

An Office Thief.—A very shabbily dressed woman, of about forty years of age, with a decidedly "rummy" appearance and odor, is calling at doctors' offices, ostensibly to beg, and improves the opportunity to steal anything upon which she can lay her hands. From one of her victims she stole a pocket case, and after she had gone it was discovered that she had laid some other instruments under a magazine on the floor behind a chair.

Precaution against the Plague.—The Russian government has sent a commission, composed of forty physicians, to Samarkand, to institute measures looking to the protection of Russia from an invasion of the plague.

An Object Lesson for Spanish Sanitarians.—Gen. Leonard Wood, governor of the military department of Santiago, Cuba, authorizes the statement that there has not been a case of yellow fever in the city of Santiago during the last sixty days, and that the ordinary sickness during the same period has been ninety per cent. less than usual. In the mean while, Havana, still under the control of Spanish officials, is reeking with filth and rotten with disease. The Spanish commander is furious against what he calls the "Anglo-Saxon canaille," because the English railway superintendent complained that the Spanish troops used the floor of the station waiting-room as a public urinal. Such squeamishness seems to him to be really too absurd.

A State Laboratory in Vermont.—The legislature of Vermont has just passed an act establishing a State laboratory for the chemical and bacteriological examination of water supplies, milk and all food products, cases and suspected cases of diphtheria, typhoid fever, tuberculosis, malaria, and other infectious and contagious diseases. Five thousand dollars has been appropriated for the establishment of the laboratory, and $8,000 annually for its maintenance.

Small-Pox in Cuba.—Dr. Woodson has reported to Gen. Leonard Wood concerning the epidemic of small-pox now raging in the Holguin district in Cuba. He says that there are more than five thousand cases in the district, and half of the town of Gibara is infected. The epidemic has been in progress for more than three years, and no attempt whatever has been made to check it. The disease is exceedingly virulent. Dr. Woodson established a hospital with one hundred and fifty beds at Gibara, and made arrangements for a large supply of vaccine, by means of which he hopes to arrest the epidemic.

Yellow Fever in Mexico.—Many deaths from yellow fever have occurred at Monterey, where the disease recently broke out. The Mexican government is looking forward hopefully to the time when the disease will be stamped out of all the Gulf towns, for it is believed that when the American government completes the reconstruction of the sewerage system of Havana and cleans out the bay, with moderate care in Mexican Gulf ports yellow fever can be stamped out. The fever has almost disappeared from these ports now, owing to the occurrence of several "northers" recently.

The Plague in Vienna.—According to a dispatch from Vienna on November 1st, there had been a total of nine cases of plague, most of them of the pneumonic form, in that city. Of these nine cases, three terminated fatally. Some nervous people here have suffered from fear that the disease might be brought to this port by Austrian immigrants. Although the danger of such an occurrence is infinitely remote, the health authorities have taken precautions to prevent the chance of importation of the disease. The consuls at the ports of departure will examine each emigrant before he is allowed to go aboard ship, and, if he comes from the infected districts, his baggage will be disinfected and every other precaution taken to prevent the spread of disease. In no case will an emigrant be allowed to proceed if there is any reason to believe that he has been in contact with the infection. As the cases of plague in Vienna have all been among physicians or hospital attendants, and every one exposed even remotely to contagion has been quarantined, the infection of anybody coming from that city is exceedingly improbable.

Society Reports.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, October 12, 1898.

T. Mitchell Prudden, M.D., President.

A Case of Acute Yellow Atrophy of the Liver.—Drs. R. S. Adams and Rowland G. Freeman presented the report of this case, which occurred in the service of Dr. J. J. Reid of the New York Foundling Hospital.

Dr. Adams said that, as only a few over two hundred cases had been reported in medical literature, the following history might prove of interest. The patient was Annie D——, aged twenty-four years, a laundress, from Ireland, who had been one year in the United States, and was nursing her first baby, born about two months previously. She had been confined at another institution—the City Hospital—but there had been nothing noteworthy about the confinement, and she seemed in excellent health for the next two months. Then she suffered for about ten days with symptoms referable to a mild gastro-enteritis; viz., languor, slight nausea, occasional vomiting, anorexia, and gradually increasing jaundice, constipation, clay-colored movements. Then began hallucinations, fear that her baby would be taken away because she, the mother, was sick. The temperature was 99°–100° F.; there was much thirst; and although usually quiet, she occasionally became almost maniacal and told of strange visions. Examination showed jaundice, slight enlargement of the liver, and a normal condition of the heart and lungs. Shortly afterward she became very much excited, and on March 18th she was sent to the hospital ward, the mild symptoms having then continued for about ten days. At this time the temperature was normal; the pulse was full and about 90; the respirations were natural and about 18; the mind wandered a little; there was severe pain in the back; the jaundice deepened. She was very drowsy, and at times quite stupid. She passed plenty of urine, high colored and containing a trace of albumin, bile pigment, and bile acids. There were frequent semisolid movements of a clay color. A diminution in the size of the liver could already be made out, especially in the left lobe. The spleen was slightly enlarged. Owing to the profound changes in the blood, and the good effects of the transfusion of saline solution in uræmia being considered, phlebotomy was performed, about four ounces of blood removed, and in its place eight ounces of decinormal saline solution infused. A considerable but fugacious improvement in the mental condition followed. On the following day, March 20th, her temperature was 97° F., the pulse was about 78, the respirations were deep, and she was quiet and apparently suffering no pain. The liver was smaller. A few spots now appeared on the chest, abdomen, and legs—papules and reddish ecchymoses—but the eruption was painless and did not itch. No hemorrhages elsewhere were observed. In the afternoon another saline infusion was given, in view of the apparent utter hopelessness of any other medication. This was followed by a chill, incoherent and muttering speech, and slight delirium. She was very slow of comprehension and, when aroused, was very irritable. There was marked thirst. On March 21st, she was quiet and apparently very weak. Perspiration very free and of a peculiar odor; temperature, 95° F.; pulse feeble; respirations very deep. Diminution in size of the liver was now extremely marked; she had apparently lost her liver over night, and there was now some incontinence of fæces. The urine was about normal in quantity, of a specific gravity of 1.028, and contained a trace of albumin, bile pigments, leucin, and tyrosin crystals. On March 22d she passed from unconsciousness to coma, with deep noisy breathing; the temperature rose gradually from subnormal to 105° F. before death, the pulse becoming accelerated some time before, and keeping pace with the temperature. She died on March 22d, about two weeks after the commencement of the symptoms, and about four and one-half days after the first severe symptoms, at which time only could the diagnosis be made with certainty.

The autopsy was made sixteen hours after death. The body was well nourished and markedly jaundiced. No œdema was present. The left lung was congested; the right was firmly bound down by adhesions, and was also congested. The heart was negative. The lower border of the liver was at the level of the ensiform cartilage. Its surface was smooth, but it was very soft and friable, and crackled on being pressed, as if it contained air. The gall bladder contained half an ounce of thick yellow fluid. The liver weighed two pounds one ounce. Its cut surface was of a dark red color, and presented irregular areas of bright yellow. The spleen was enlarged, weighing one pound one ounce. It was dark red, friable, and soft. The left kidney was enlarged and soft, the capsules were adherent, and the cortex was quite thin, with rather indistinct marking. The right kidney was similar to the left. The pancreas was markedly enlarged, being nine inches long. It crackled on pressure, as if containing air. In the caput coli was an intersusception, from below up, with marked swelling of the intestine, forming a hard tumor. The uterus was slightly enlarged, its cavity holding one drachm.

The microscopic examination of the tissue showed the liver to have undergone the cell degeneration characteristic of acute yellow atrophy. In addition, there were small empty spaces in the liver, which were surrounded by large, short bacilli. The outline of the cell body was indistinct, and the nuclei failed to stain. The pancreas also showed marked degenerative changes, the nuclei, for the most part, failing to stain with hæmatoxylin, and the outline of the cell body being indistinct. The kidney also showed cell degeneration, the change being more marked in the cells lining the tubules than in those in the glomeruli. Aerobic cultures were made from the organs and showed only the bacillus coli communis, but the bacillus found on microscopic examination surrounding the spaces of the liver differed from the coli communis, and owing to the facts of its morphology, its gas production, and its failure to grow in aerobic plates, the conjecture would seem to be justified that it was the bacillus aerogenes capsulatus. Its identification was, however, incomplete.

Dr. Rowland G. Freeman exhibited under the microscope specimens from this case.

Dr. Harlow Brooks remarked that a number of cases of acute yellow atrophy had been collected, in which the disease had first appeared shortly after labor, and in which there had been reason to believe that there had been some septic infection.

Stenosis of Œsophagus; Carcinoma.—Dr. J. H. Larkin reported a case of this kind occurring in a male, aged forty-five years, who entered the hospital, September 27, 1896, stating that he had always been well up to five weeks previously, when, while at dinner, he had swallowed a fishbone, and it had lodged in his throat. From that time until his admission to the hospital he had been able to take fluid diet only. On admission he was well nourished, and the physical examination of the heart, lungs, liver, and kidneys was negative. There was nothing in the history pointing to the passage of a bougie by the surgeon, and inquiry showed that this could not be done, on account of the

pain. On September 29, 1896, a gastrostomy was done in the left hypochondriac region, and the stomach wall was attached to the abdomen. He remained in the hospital till October 14, 1896, when he was discharged, having learned how to take care of his wound and feed himself properly. He remained perfectly well till April 19, 1898, when he came back, complaining of severe dyspnœa, which had been growing worse for the past three weeks. At this time physical examination gave complete dulness over the right lower lobe of the lung, with absence of breathing and voice. An aspirating needle encountered a firm hard mass, and no fluid was obtained. He continued to grow worse, and died on April 25, 1898. At the autopsy the body was found to be fairly well nourished, and there was a rubber tube in the gastrostomy wound which communicated with the stomach. There was no peritonitis. There were some old adhesions over the left lung posteriorly, and some compensatory emphysema of that lung. The other lung was bound down at its base by firm adhesions. The heart, lungs, œsophagus, and stomach were removed *in toto*, and the following conditions found: The left lung contained a few scattered, hard, white nodules about the size of a pea. The upper and middle lobes of the right lung were emphysematous, while the lower lobe was firm and solid, and presented a grayish-white, glistening appearance. Section of this lobe revealed some of the larger bronchi remaining, but narrowed and compressed. The left bronchus was slit up and found to be patent, a filiform bougie passing out of the cut ends in the lung tissue. The right bronchus was slit up, and the bronchi supplying the upper and middle lobes were found to be patent; but the bronchi going to the lower lobe were stenosed, and a fine filiform bougie could not be passed out into the lung tissue. Both branches of the pulmonary arteries were normal. The right pulmonary vein was stenosed, and its wall was surrounded by a cicatricial mass which had its origin at the root of the lung posteriorly. The vein admitted with difficulty a fine filiform bougie, which passed out of the cut ends in the lung tissue. The œsophagus, from the cardiac end to a distance eight centimetres upward, was stenosed, and its wall thickened and changed into very dense cicatricial tissue. After patient work, a fine filiform bougie was passed from above downward. About the middle of the stricture was a small blackish mass, but this could not be recognized macroscopically as a fishbone, nor under the microscope as bone tissue. The liver contained several very hard and cicatricial metastatic nodules, varying in size from one centimetre to four centimetres in diameter. Some of these nodules were undergoing calcification at the centre. The kidneys were normal except for a few hard metastatic nodules.

Transverse and longitudinal sections of the œsophagus at the site of the stricture were studied microscopically, and found to be composed of very dense cicatricial tissue, in which could be seen small, squeezed, and contorted alveoli, filled with epithelial cells. The latter could be traced from the mucous surface, dipping down and infiltrating the tissues beneath. Sections of the isolated nodules in the lung tissue showed mostly fibrous tissue, with numerous small and contorted alveoli containing closely packed epithelium. The sections of the lower lobe of the right lung showed intra-alveolar and interstitial pneumonia. The outline of the air vesicles was preserved; their walls were thickened, and in the cavity was a dense growth of new fibrous tissue and blood-vessels. Sections of the metastatic nodules in the liver were likewise nearly all fibrous tissue, with the same small alveoli containing epithelial cell nests, with here and there larger and smaller calcareous masses in the centre. The nodules in the kidney were also mainly fibrous tissue, with alveoli containing cells. The sections of the stomach wall proved of interest. On account of the chronic and constant irritation of a rubber tube the glandular coat had disappeared, and its place had been taken by small round cells. The muscular coat was thickened, and the individual muscle fibres were separated by small round-cell infiltration.

To summarize, the most important features of the case were: (1) An almost impassable stricture of the œsophagus, eight centimetres in length, admitting only with difficulty a filiform bougie. (2) Stenosis of the bronchi leading to the lower lobe of the right lung, and stenosis of the right pulmonary vein, both these factors inducing a chronic productive inflammation of the whole lower lobe of the right lung. (3) The peculiar microscopical picture of the metastatic nodules in the lungs, liver, and kidneys, viz., the preponderance of the fibrous-tissue element over the alveoli and epithelial cell nests.

Carcinoma of the Stomach with Perforation.—Dr. Larkin also presented specimens from a case of this kind. The subject was a man, forty years of age, who had been in the hospital for eight months. The diagnosis at the time of his admission was carcinoma. He had complained only of epigastric pain, and had shown no other symptoms worthy of note until a few days before death, when he developed tympanites. The autopsy revealed the presence of a primary carcinoma situated in the wall at the lesser curvature. The anterior wall was normal. The lymphatic nodes in the lesser curvature and those around the tail of the pancreas were involved, but aside from these there were no metastatic deposits. A small perforating ulcer had set up a peritonitis, which had been the immediate cause of death.

Dr. George P. Biggs said that the changes in the lung in Dr. Larkin's first case reminded him very much of two cases in which there had been prolonged pressure on one primary bronchus by an aneurism. In the cases referred to there was no evidence of pressure on the veins, but there was a chronic inflammatory process, with filling up of the alveoli and a decided growth of connective tissue into the alveoli. It was supposed that the interference with the passage of air through the bronchus into the lung and the retention of the secretions had been responsible for the chronic pneumonia.

Dr. Carlin Philips presented a unique specimen of kidney malformation. The specimen was taken from a man, aged thirty-six years, dying from chronic alcoholism. The genito-urinary history was not known. On either side were seen masses of kidney tissue, each having two ureters from separate pelves. These ureters apparently divided dichotomously, as in the normal organ. The upper portion of each kidney mass was hydronephrotic, and the ureters from these portions on either side were markedly dilated, thickened, and tortuous. Below they had no connection with the bladder or urethra and seemed to end blindly in a small pouch beneath the trigonum. Here the pressure of the enclosed fluid had formed for itself a cavity, six centimetres in diameter, projecting up into and carrying with it the mucous membrane of the true bladder in the region of the trigonum. This little sac-like cavity, projecting into the bladder at its base, resembled at first glance an attempt at formation of a second bladder, but in reality was only a secondary phenomenon. The lower portion of each kidney mass was fairly well formed. The portion on the left measured in length seven centimetres, on the right nine centimetres respectively. On either side there was apparently a small band of connective tissue between the cortices of the upper and lower kidney masses, representing a division of kidney parenchyma by distinct

capsule formation. This layer of apparent connective tissue had not yet been demonstrated microscopically. The ureters from the lower portions on either side were normal in every way, and entered the base of the true bladder on either side of the little cystic dilatation. The speaker was of the opinion that the upper portions of the kidney mass on either side were functionally separate organs. He said a French observer, Rayer, had reported a number of cases of supernumerary kidneys which appeared to be similar to the one just reported.

Dr. Mary Putnam Jacobi suggested that the presence of extra ureters was evidence that the kidneys were separate.

Dr. George P. Biggs said that he had several times found single kidneys with two separate pelves, each having a ureter. In some cases the ureters emptied independently into the bladder, while in others they fused before reaching that viscus. The essential difference between such specimens and the one presented, he believed to be the absence in the latter of free outlet for the urine from the superior pelvis, which, therefore, became very much distended, and the resulting difference in appearance of the upper and lower portions would naturally suggest at first glance a double kidney.

Dr. Philips remarked that there was apparently no connection between the ureters from the upper portions of the two kidneys and the true bladder in his case; they terminated blindly in a dilated pouch beneath the trigonum of the bladder.

Dr. Larkin said that if the upper portion of both kidneys had been functionating, the damming back of the urine should have given rise to more hydronephrosis. There must have been some leakage or escape, otherwise there would have been a cystic formation rather than a mere dilatation.

Early Carcinoma of the Cervix.—Dr. Eugene Hodenpyl presented a specimen showing a very early stage of duct carcinoma of the cervix. The patient was sixty years of age, and had first noticed a slight discharge from the vagina, occasionally containing a little blood, about one month previously. Examination by Dr. E. B. Cragin revealed a small ulceration of the cervix, principally about the os, but extending somewhat into the canal. A small bit of the wall of this ulcerated area was examined microscopically by Dr. Matthews, who found in the edge a tiny but unmistakable area of carcinoma. The uterus was promptly removed, together with the tubes and ovaries. The speaker said that his examination of the uterus confirmed the diagnosis of carcinoma and also showed that the lesion was a localized one, it being found only in the immediate neighborhood of the os. It would seem, therefore, that the woman had been spared the fate of a local recurrence. The specimen also emphasized the immense value of microscopic examination in such doubtful cases, for the operation would not have been justified, in his opinion, without the microscopical diagnosis.

A Case of Apparent Absence of the Spleen with General Compensatory Lymphatic Hyperplasia.—Dr. Hodenpyl read a paper with this title (see page 695).

The society then went into executive session.

Dermatitis Maligna.—In beginning Paget's disease of the nipple, partial removal of the breast is not considered safe. When complete operation is refused, I should not hesitate to destroy the area widely and deeply with the Paquelin's cautery. Removal of the entire mamma is, however, probably safer, though cases with good results from the more limited operation are not unknown.—A. Marmaduke Sheild.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNÆCOLOGY.

Stated Meeting, October 27, 1898.

Edwin B. Cragin, M.D., Chairman.

Very Young Fœtus.—Dr. S. Marks presented a fœtus from a very early stage of pregnancy. The woman had skipped three periods, according to the history, and had then aborted. The ovum was only about one centimetre long, and from its general appearance it was impossible that it should have been from a three-months' pregnancy. It was probably about twenty-one days old.

Fatal Hemorrhage from Cervical Laceration.—Dr. Marx then exhibited the uterus removed post mortem from a woman dying on the third day after confinement. She was twenty-five years of age, and this was her third confinement. Her previous labors had been normal, and her general health good. On October 12, 1898, at 5 P.M., labor began, and at one o'clock in the morning the membranes were ruptured artificially and the child was extracted. There was slight but steady hemorrhage, and accordingly the house surgeon packed the uterus with gauze. The gauze was removed on the morning of the third day. This was followed by a sudden and most profuse hemorrhage, and by the time the speaker reached the hospital the patient was dead. The tamponade of the uterus had been renewed, but this had not controlled the bleeding, and the house surgeon had not appreciated the necessity for at once sewing up the laceration of the cervix. Had this been done, it would have saved the woman's life. The post-mortem examination showed a deep laceration on the left side of the cervix, and the uterus filled with clots. The subperitoneal tissue had been dissected up on each side as far as the kidneys, and was infiltrated with blood—in other words, the cause of death was concealed subperitoneal hemorrhage from a cervical laceration.

Treatment of Cervical Lacerations.—Dr. Marx said that in the absence of hemorrhage he never touched a lacerated cervix. Simple traction on the uterus in such a direction as to produce flexion would be found sufficient to check the bleeding in most instances. In the presence of a complication such as this, there was usually some doubt as to the aseptic condition of the parts, and hence he did not favor suturing the cervix. It was not at all uncommon for lacerations of the cervix, which appeared enormous at the time of parturition, to shrink down to an insignificant size afterward, and consequently he did not ordinarily advise immediate suture. He had known a house surgeon to sew up the cervix so tightly as to prevent all escape of lochia. The diagnosis of cervical hemorrhage was not always easy, and in some instances even packing the uterus would not be sufficient. In one such case, when packing alone had failed, he had packed the uterus and sewed up the cervix. In one desperate case he had temporarily checked the hemorrhage, and then, finding the condition of the woman very bad, he had transfused her. As soon as the circulation had been improved in this way the hemorrhage recurred, and she died.

Dr. Francis H. Stuart, of Brooklyn, said that he had had an opportunity once to see a very severe hemorrhage from a lacerated cervix. The cause of the hemorrhage was discovered with the aid of a Sims speculum, and the hemorrhage checked by sewing up the laceration—the only case in which he had practised immediate suture—and the union had been excellent. In his opinion, it was better to examine and locate the source of the hemorrhage than blindly to employ the tamponade. He was not in favor of the

immediate suture of the cervix except when there was free hemorrhage.

Control of Cervical Hemorrhage.—Dr. Philander A. Harris, of Paterson, said that there was an incomplete rupture of the uterus in the specimen presented, in addition to the cervical laceration, making the case a very unusual one. In one such case—seen about four weeks ago—the os and cervix uteri were not included. The hemorrhage dissected up into the broad ligament, producing a large tumor. The patient was on the road to recovery. He had seen only one other case of this kind. Regarding cervical hemorrhage, the speaker said that it could be very quickly controlled in many cases by a plan which he had used for some time—*i.e.*, the application of a long clamp. The clamp was left on for two days. This continued pressure must necessarily cause a little superficial necrosis of the tissues, but it had not seemed to him to be in any sense a harmful expedient. He did not include both sides of the cervix, but simply gripped the tissues on the inside.

Dr. John Polak said he had noticed that if the gauze packing was left in the uterus for three days without removing any portion of it, the uterus was apt to be in a more or less atonic condition when the gauze was withdrawn, and consequently in a condition very favorable to the occurrence of hemorrhage. After seeing a case of fatal hemorrhage occur in this way, he had adopted the plan of removing the tamponade, a portion at a time.

Dr. Marx said that he saw no objection to leaving the gauze packing in as long as three days, provided the uterus and the gauze were known to be aseptic. If he thought its removal at that time would endanger the woman's life, he would be perfectly willing to leave the tamponade in for a week, if need be. A few years ago he had recommended controlling cervical hemorrhage by the application of clamps, but ordinarily it seemed to him better to suture the cervix. This could be done without any special instruments, and with only the help of an assistant to press the uterus within easy reach. If one hot intra-uterine douche did not control the hemorrhage, he was accustomed to resort at once to the uterine tamponade.

Fibroid Uterus.—Dr. H. J. Garrigues presented a fibroid uterus removed from a woman, fifty-eight years of age. She complained of severe hemorrhages and backache, associated with prolapse. The abdominal walls were so fat that it was impossible to feel the body of the uterus. After etherization, he found a large uterus with a tumor on either side. On opening the posterior vault of the vagina, he discovered a number of fibroids. It was necessary to remove nine fibroids before the uterus was small enough to be removed through the vaginal incision. All of the fibromata were held together only by loose connective tissue. The patient did well for some days after the operation, and then developed a pneumonia, from which she died. She had previously been a sufferer from chronic bronchitis, which probably explained the occurrence of the pneumonia. The post-mortem examination showed no evidence of inflammation about the field of operation.

A Blighted Ovum.—Dr. Garrigues also presented the fluid removed from a case in which the diagnosis was not at all clear. A woman came to him recently with the statement that she was pregnant about four or five months, and the size of the uterus indicated that this statement was correct. On making a vaginal examination the vagina was found to be filled with a fluctuating cyst, and inspection showed a very thin-walled tumor filled with fluid. On puncture of the outer wall, some thin fluid escaped, and on puncture of the thick, fibrous inner membrane, a large quantity of thick, brownish fluid was evacuated. The microscopical examination of this fluid showed an entire absence of blood corpuscles and of echinococcus hooklets. There was no fœtus in the uterus. The woman had ordinarily menstruated regularly. The only diagnosis that had suggested itself to him was that of an aborted ovum; still, the condition was very different from anything that he had ever seen before. The cyst itself had not been examined microscopically.

Dr. Marx thought it possible that the case was one of missed abortion with absorption of the fœtus.

Fibro-Cystic Uterus in a Young Girl.—Dr. Brooks H. Wells reported the following case: The patient was an unmarried woman, thirty-two years old, who had always enjoyed good health. Her first menstruation was at the age of thirteen and one-half years, and it had always been regular and normal. She stated that when fifteen years of age her abdomen was large and hard, but was not painful. Last May she struck the right side of the abdomen forcibly against the edge of a piece of furniture, and this was followed by pain, nausea, vomiting, and dizziness. The abdomen steadily grew larger, and she felt quite sick. When seen by him on July 21st, the abdomen measured forty inches in circumference. There was a tense, thin-walled, fluctuating, immovable, rounded tumor, extending to the umbilicus, and somewhat more pronounced on the right side. The tumor was not tender. There were an intact hymen and a very small vagina, and as the patient did not wish to take an anæsthetic the examination was difficult. The diagnosis was made of probable multilocular cyst of the ovary. On September 19th, while stooping over, she was seized with violent pain in the abdomen, accompanied by shock. When seen by him on the 21st, her face was drawn and anxious, and the abdomen tense and tympanitic over the tumor. An immediate operation was advised, but she did not give her consent until five days later. The abdomen was then opened at the Polyclinic Hospital, and found to be filled with viscid fluid from the ruptured cyst. The condition proved to be one of cystic uterus with fibroids. These were removed, and the uterus was extirpated by supravaginal amputation. Immediately after the operation her pulse was 96, and after the eighth day her temperature did not rise above the normal. When fresh and distended, the tumor was about the size of an adult head. The operation revealed a rupture, two and one-half inches long, on the superior surface of the cyst. The contents of the latter were a greenish fluid and masses of coagulated fibrin. The posterior and inferior walls were thickened and nodular, and covered with dilated blood-vessels. The microscope showed the tumor to be a fibroid in an advanced stage of degeneration. This patient gave a history which made it appear probable that she had had this fibroid when only fifteen years old. It was this that made the case a rare one. The accidental blow on the abdomen undoubtedly caused a hemorrhage within the tumor, and this, by increased pressure, resulted in degeneration and final rupture of the cyst. In spite of the fact that the fluid remained in the peritoneal cavity about a week, there was no peritonitis. The speaker said that a review of the literature of these cases showed that the diagnosis before operation in the vast majority had been just what he had made—*i.e.*, multilocular ovarian cyst. The usual point in differential diagnosis between this condition and cystic uterus, as laid down in the books, was that in the former there was usually a deterioration of the general health which was not present in cases of cystic uterus. This certainly did not apply in the present instance. The fundus of the uterus was removed because of the presence there of a small nodule. If it had not been for this, the tumor could have been easily enucleated from the uterus. One ovary was left in, with the idea that the severity of the symptoms of the artificial menopause would be thereby

lessened. Chromicized gut was used in the operation, according to his custom. The speaker had used this in over one hundred and fifty intra-abdominal operations, and without a single case of suppuration. In cases of serious infection he did not use the buried suture; he employed that only in clean cases.

Dr. H. J. Boldt said that in this connection he desired to place on record the report of a case seen at the Post-Graduate School about sixteen years ago. The patient was a woman of eighteen, having a fibromyomatous tumor, extending up to the umbilicus.

Operative Gynæcology, or the Temptation of Skill.—Dr. Eugene C. Savidge read a paper with this title. He said that the theme had been suggested by the remarks of a society woman, of a lawyer, and a gynæcologist. The debt that woman owed to man's surgical audacity was simply enormous. The reparative operations in women should be placed before them in the same light as a gaping wound on any other part of the body. It was by no means settled that lacerations of the cervix required immediate operation. The bad results of the slight lacerations were often entirely ascribable to the woman's own carelessness after parturition. Curettage was really reparative work, and when rightly done was one of the most brilliant life-saving measures. It was surprising what huge perimetric masses might be reduced by curettage and drainage. Regarding retrodeviations, the speaker said that in a recent paper he had had the temerity to predict that operations for these conditions would be almost unknown in the next generation. Touching upon the treatment of appendicitis, he said that it was admitted that seventy-five per cent. of patients recovered under medical treatment, while the surgeons claimed that ninety-eight per cent. should recover by timely operation. But medical men asserted that in one-third of the autopsies on persons dying from other diseases the vermiform appendix showed that an appendicitis had been spontaneously recovered from, just as nature often put a stop to a tuberculous process. It should be remembered that the menopause did not give relief to all persons suffering from fibroids; some of the worst symptoms developed after that time. When there were pus sacs, vaginal incision into them often saved function and at the same time cured. In conclusion, the reader expressed the belief that there could be no doubt of the value of the vast majority of gynæcological operations, and that the list of debatable operations was comparatively small.

Dr. E. W. Peet said that his comments on the paper would be based on an experience with thirteen hundred patients at the out-patient department of the Roosevelt Hospital. He had seen cases of fibroids operated upon and about an equal number treated without operation, and he was compelled to say that, as a class, those not operated upon appeared to to get along better. In two of the operative cases in this series the patients died, while among the non-operative cases only one death occurred.

Vaginal Puncture Not Curative.—It was not common at the present time to see many acute inflammations of pus in the tubes; the majority were chronic. When there was much distention and the abscess invaded the ovary, vaginal puncture would often allay the symptoms, but, according to his experience, these persons were never cured until the diseased tube had been extirpated. The draining of pus tubes, whether through the uterus or through a vaginal incision, had been followed by pregnancy, and the patients had been in much better physical condition than those in whom ablation had been practised. Comparatively few of the unfortunates making up the latter category realized before operation that an artificial menopause would be induced, and when the truth dawned upon them they were of all women the most wretched. They might be improved physically in many instances, but certainly not mentally.

Alexander's Operation Rarely a Complete Success.—In fully one-half of the cases coming under his observation in which Alexander's operation had been done, many of the symptoms still persisted, and to these were added the symptoms of the operation. He had yet to see a case of Alexander's operation which he could honestly call a success.

Lack of Muscular Tone in Women.—Dr. A. E. Gallant said that it seemed to him that the debatable operations were those connected with the tubes and with retrodeviations. His experience with the cases treated by vaginal puncture was that it was apt to be followed by very obstinate sinuses. However, some years ago he had had one case of vaginal puncture in which the sinus had closed without subsequent operation. He thoroughly agreed with the reader of the paper that passive congestions were responsible for a very large proportion of the pelvic pains from which women suffered, and believed that this was largely due to the almost universal lack of muscular tone in women of the present day. It was the exception to find women who were in proper physical condition to bear children. Out of four hundred gynæcological cases coming to him in a dispensary service, he had found that one hundred and eighty were retrodeviations. This seemed to him a very large percentage, and he was sorry to say that he was not at all decided as to what was the best treatment. Most of the cases of Alexander's operation coming to the dispensary were naturally in patients who had not been completely relieved by operation, and therefore desired further treatment. The higher the position of the uterus the better the chance of affording relief.

Incomplete Operations a Prolific Source of Trouble.—Dr. G. W. Jarman said he was sceptical about the decided lacerations of the cervix healing without operation. He took this position because of the action of the circular muscles around the cervix, and of the group of longitudinal muscles coming down from the body of the uterus to the cervix. Many retrodeviations occurred among young women. Here pessary treatment, even if effective, was often undesirable. Moreover, he was not enthusiastic over the results obtained from the use of pessaries under the most favorable circumstances. In a large dispensary experience he could not recall more than three or four cases in which a complete cure had not followed total hysterectomy, with the removal of tubes and ovaries. All the women under twenty-seven years of age in whom the tubes and ovaries had been completely removed had suffered far more than women over thirty years of age who had been subjected to the same operation. He had also noticed that there was more disturbance when a portion of the appendages had been allowed to remain than when total hysterectomy, with complete removal of the appendages, had been done; in short, the subsequent troubles were found almost exclusively in those cases which had been subjected to incomplete operations.

Curettage a Much-Abused Operation.—Dr. Boldt said that he did not know of another single operation that was so much abused as that so-called "simple operation of curettage." The vast majority of cases of pyosalpinx were sacculated pus tubes, and, according to his experience, it was impossible to cure these cases by puncture or by curettage and drainage through the uterus. More than once had he seen pus tubes produced by curettage. The secret of success in operative gynæcology was to be found in the adaptation of the operation selected to the individual case. The great majority of patients with fibro-myomatous tumors who consulted the operative gynæcologist would require operation, unless the future should show that

the administration of thyroid or mammary-gland extract accomplished more than the non-operative methods of the past.

Dr. Savidge, in closing, said that he had seen within the past month two cases in which in spite of the complete removal of the uterus and appendages the symptoms that had existed before operation still persisted. Relief was promptly afforded by measures directed toward relieving the venous congestion. The object of his paper was to show that the value of a very large percentage of gynæcological operations was entirely beyond debate.

The Diagnosis and Treatment of the More Common Bladder Affections in Women by Means of Kelly's Method.—Dr. Hiram N. Vineberg said that with this method extensive dilatation of the urethra was never called for, and anæsthesia almost never. He had not known incontinence to follow the introduction of the No. 12 cystoscope, and he had never had occasion to use a larger instrument of this kind.

"Irritable Bladder."—A very common condition in women was that formerly described as "irritable bladder." Kelly's method had shown that in the great majority of cases the symptoms were dependent upon a local hyperæmia of the bladder, usually of the trigonum. It should be remembered in making a cystoscopic examination that the area of the trigonum was naturally redder than the other parts. This localized hyperæmia was associated with a great variety of pelvic disturbances, and might occur independently of any pelvic affection. By Kelly's method the treatment of what was once the *bête noire* had now been rendered very simple and satisfactory. Half a dozen applications of a five or ten per cent. solution of nitrate of silver to the hyperæmic patches would almost invariably effect a cure. For the first twenty-four hours, however, the symptoms were apt to be aggravated.

Cystitis.—In ordinary catarrhal cystitis the mucous membrane of the bladder was rarely affected uniformly. He had met with two cases of hemorrhagic cystitis, both in pregnant women. The blood rapidly disappeared from the urine after a few applications of nitrate of silver. One of them returned subsequently without hæmaturia, but with irritation of the bladder, and symptoms indicative of tuberculosis of the bladder. In the treatment of tuberculous cystitis he had obtained the best results from local applications of a strong solution of nitrate of silver and of a twenty-five-per-cent. solution of ichthyol in glycerin.

Dr. Boldt said he had had two cases of tuberculous cystitis which had been diagnosticated by the cystoscope. They had proved exceedingly obstinate to treatment.

Suggested Improvement in Kelly's Cystoscope.—Dr. P. A. Harris said that he had met with but one case of tuberculous cystitis. If the cystoscope was removed from the boiling water and the latter carefully expelled from the instrument before re-insertion of the obturator, prior to introduction of the instrument into the bladder, he thought there would be less suction power, and therefore less liability of wounding the wall of the bladder on the removal of the obturator. A slight change in the construction of the instrument would provide for the admission of air to the obturator, and so still further obviate this danger.

Dr. Vineberg, in closing, said that while Kelly had spoken of the liability of injuring the bladder on the withdrawal of the obturator, he had not personally been able to confirm this in his own observations. Possibly this was because he used the instrument with the patient in the knee-chest position.

For Inebriety.—A wineglass of vinegar, it is said, will sober a much-intoxicated person in twenty minutes.

Reviews and Notices.

International Clinics. A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology, and Dermatology, and Specially Prepared Articles on Treatment and Drugs. By Professors and Lecturers in the Leading Medical Colleges of the United States, Germany, Austria, France, Great Britain, and Canada. Edited by Judson Daland, M.D., Philadelphia; J. Mitchell Bruce, M.D., F.R.C.P., London, Eng.; and David W. Finlay, M.D., F.R.C.P., Aberdeen, Scotland. Volume II., Eighth Series. Philadelphia: J. B. Lippincott Company. 1898.

Much of the success of this quarterly depends upon the care on the part of the editors in selecting not only men of known worth and ability, but those who from previous experience have shown themselves to be attractive speakers and writers. It is bad enough to have to sit through a clinical lecture which is dry and lacking in something of the vim and sparkle which can well go with science; to be forced to read such productions is decidedly worse. One advantage of the "Clinics" is that when (and it doesn't often happen) a dull lecture is encountered it can be cut with better grace than if one had to leave the benches in the face of the speaker. The lectures include "The Treatment of Tuberculosis," by Professor Grancher; "The Treatment of Functional and Lateral Curvature by Light Gymnastic Exercise" (excellently illustrated), by James K. Young, M.D.; "Broncho-Pneumonia Following Measles," by John A. Larrabee, M.D.; "On the Relation between Heart Disease, Pregnancy, and Confinement," by A. Pinard, M.D.; "The Etiology and Classification of Cystitis," by N. Senn, M.D., Ph.D., LL.D.; "A Case of Appendicitis, in which the Appendix Became Soldered to the Bladder, Like a Third Ureter, Producing a Urinary Fæcal Fistula," by W. W. Keen, M.D.

Brief Essays on Orthopædic Surgery. Including a Consideration of its Relation to General Surgery, its Future Demands, and its Operative as Well as its Mechanical Aspects, with Remarks on Specialism. By Newton M. Shaffer, M.D., Surgeon-in-Chief to the New York Orthopædic Dispensary and Hospital, etc. New York: D. Appleton & Co. 1898.

This little volume of eighty-one pages contains essays and portions of addresses which have from time to time appeared in current literature, and are collected now in the hope that orthopædic surgery may be benefited by their republication.

The Office Treatment of Hemorrhoids, Fistula, etc., without Operation. Together with Remarks on the Relation of Diseases of the Rectum to Other Diseases in Both Sexes, but Especially in Women, and the Abuse of the Operation of Colostomy. By Charles B. Kelsey, A.M., M.D., late Professor of Surgery at the New York Post-Graduate Medical School and Hospital, etc. New York: E. R. Pelton, No. 19 East Sixteenth Street. 1898.

These sixty-eight pages contain three lectures, the last of which alone has been previously published. The author is well qualified to counteract, as is his present object, the too prevalent idea that operation by a specialist is always necessary in these rectal disorders.

Twentieth Century Practice. An International Encyclopedia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M.D., New York. In Twenty Volumes. Vol. XV., Infectious Diseases. New York: William Wood and Company. 1898.

The table of contents of this, the third volume devoted to infectious diseases, includes the following subjects: Influenza, Typhus Fever, Plague, Glanders, Anthrax, Foot-and-Mouth Disease, Actinomycosis, Rabies, Pyæmia, and Septicæmia. The list of authors, taken in the order of the subject treated by each, includes Ditmar Finkler, University of Bonn; Eduardo Licéaga, president of the superior board of health of Mexico; Kitasato, the discoverer of the plague bacillus, and Nakagawa, of Tokio; Frank S. Billings of Grafton, Mass., who also wrote on Anthrax; Ismar Boas, of Berlin; Emil Ponfick, professor of pathological anatomy, Breslau; N. G. Keirle, chief of Pasteur Laboratory, College of Physicians

and Surgeons, Baltimore; J. McFadden Gaston, professor of surgery, Southern Medical College, Atlanta; and J. McFadden Gaston, Jr. This list brings before the reader a number of rather well-known men from different and at times distant quarters of the globe, whose writings have in several instances been more familiar to general readers from periodical than from book literature. The subjects are all of peculiar interest and have been treated of in the manner which recent additions to our knowledge make necessary, for in almost every one decided advances have been made, either in the discovery of causative factors, in methods of diagnosis, or in plans of treatment. Glanders is perhaps the most unsatisfactory condition of which the volume treats. The question of therapy is dismissed in just six lines. It is considered that the question of a reliable germicide to be gotten from bacteria is one to be solved in the future, and that an antitoxin alone will not do the work in glanders as in tuberculosis. The reaction claimed in actinomycotic patients from the injection of Koch's tuberculin is not confirmed by the experiments of the writer upon this disease. Treatment is briefly considered, but occupies a space proportionate to the whole article. Keirle states that no fully demonstrated case of recovery from rabies in man is on record, and that the death rate among rabic patients who are cauterized is thirty per cent., while in those uncauterized it is eighty. The article takes up seventy pages, and a similar space is given to pyæmia and septicæmia, while Finkler's article on influenza covers two hundred and forty-seven pages, the whole number of pages being six hundeed and fifty-eight. The volume as a whole shows no falling off in the standard of authors contributing or in the character of the articles. The editorial and printers' work is well done and the index is very full.

THE POCKET FORMULARY FOR THE TREATMENT OF DISEASES IN CHILDREN. By LUDWIG FREYBERGER, M.D. Vienna, M.R.C.P. Lond., M.R.C.S. Eng.; Clinical Assistant, Hospital for Sick Children, Great Ormond Street; Curator of the Museum, Pathologist, and Registrar, Great Northern Central Hospital.

THIS neatly arranged compendium of pediatric therapeutics forms a ready and valuable reference manual. Besides giving the dose for children at various ages, the therapeutic action and the incompatibilities of all the important remedies, it devotes a section to the correction of the taste of the bitter and disagreeable drugs.

A TEXT-BOOK UPON THE PATHOGENIC BACTERIA. For Students of Medicine and Physicians. By JOSEPH McFARLAND, M.D., Professor of Pathology in the Medico-Chirurgical College; Pathologist to the Medico-Chirurgical Hospital and to the Rush Hospital for Consumption and Allied Diseases. Second Edition. Philadelphia: W. B. Saunders. 1898.

THIS is a book that has well deserved to reach a second edition, and we doubt not its merits will carry it through several more. It is of moderate size, sufficiently full to answer all the requirements of a work of reference, yet consise enough to serve as a text-book for learners of the science of bacteriology. The illustrations are very good, and are not too numerous. The necessary references are given in footnotes, which are few, and there is no exhaustive bibliographical section either at the beginning or at the end of the book. This is refreshing in these days of pedantic quoting of "authorities," and we hope, in the interests of all but the paper makers, that the author will find many imitators in this respect.

DISEASES OF WOMEN. A Treatise on the Principles and Practice of Gynæcology. For Students and Practitioners. By E. C. DUDLEY, A.M., M.D., Professor of Gynæcology, Northwestern University Medical School; Gynæcologist to St. Luke's Hospital, Chicago, etc. With 422 Illustrations. Philadelphia and New York: Lea Brothers & Co. 1898.

THE aim of each writer of a book should be originality, and if he cannot have an original subject to treat he should at least treat the old subject in an original manner—otherwise he would better hold his peace. The subject of the diseases of women cannot certainly be called original, and so the author has been forced to justify his work by his way of handling it. If not exactly original, this is at least somewhat out of the ordinary. Instead of dividing the genital apparatus into separate organs and discussing the diseases of each individual part from the ovaries downward, Dr. Dudley makes a pathological division, dividing his work into five parts. These are labelled: I. General Principles; II. Inflammations; III. Tumors, Malformations, and Tubal Pregnancy; IV. Traumatisms; and V. Displacements of the Uterus and Other Pelvic Organs, and Massage. There are some disadvantages in this method of classification, but the author justifies it as enabling the reader to grasp more readily the sequence and significance of each pathological process, and giving him a better idea, for example, of metritis by associating it closely with vulvo-vaginitis, salpingitis, oöphoritis, and peritonitis. The work is very profusely illustrated.

PROCEEDINGS OF THE CONNECTICUT MEDICAL SOCIETY. 1898.

A NEATLY bound volume of the transactions of the society, containing a number of interesting papers.

LES ACTUALITÉS MÉDICALES. La Grippe. Par L. GALLIARD, Médecin de l'Hôpital Saint Antoine. Paris: J. B. Baillière et Fils. 1898.

THIS little book is the first of a new series which has for its object the presentation and discussion, in precise and compact form, of the medical topics of the day—diphtheria, neurasthenia, diabetes, exophthalmic goitre, curable albuminuria, tetanus, etc. Beginning with a short history of the disease, the author leads us into the chapters on the microbe, symptoms, clinical types, complications, treatment, and prophylaxis. Pfeiffer is recognized as the discoverer of the specific microbe, and his observations are corroborated by Kitasato, Pfuhl, Klein, Weichselbaum, and others. The various clinical forms are systematically arranged, and the treatment is divided into that of the different stages, forms, and complications. This series is destined to find general favor with those who desire to keep abreast of medical progress. The book is of portable size and neatly bound.

TWENTY-SECOND YEAR BOOK OF THE NEW YORK STATE REFORMATORY, FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 1897.

A REPORT of the work done in this institution during the past year, with special reference to the advantages resultant from the introduction of manual training in 1895.

DIE VERDAUUNG UND ASSIMILATION DES GESUNDEN UND KRANKEN SÄUGLING, NEBST EINER RATIONELLEN METHODE ZUR SÄUGLINGSERNÄHRUNG. Von DR. MED. L. DE JAGER.

AN interesting treatise on digestion and assimilation in the infant, with special reference to treatment based on physiological and chemical results.

EAR RECORDS. Arranged by JOHN C. LESTER, M.D., etc., and VINCENT GOMEZ, M.D., etc. New York: J. W. & G. H. Hahn. 1898.

THIS is a well-arranged volume designed for the recording of cases of diseases of the ear, with additional blank pages for general notes, and an index. The compilers have taken as a nucleus an arrangement devised by Dr. Röhrer of Zurich, which they have modified and added to, producing a very complete record book and one which must prove useful in the office of an otologist.

LECTURES ON THE THEORY AND PRACTICE OF VACCINATION. By ROBERT CORY, M.A., M.D. Cantab., F.R.C.P. Lond. One volume, octavo, 132 pages, profusely illustrated by woodcuts and 12 full-page lithographic plates. Price, $3.25 net. New York: William Wood and Company.

THE six chapters of this work represent six lectures, to which several papers have been added. Having written before the report of the royal commission was published, the author is not indebted to this source, as some readers might suppose, for his information on many of the questions touched upon. First are considered the medical man's duties toward the vaccination laws; secondly, the histology of vaccine and variola vesicles; then the difference between a primary and a secondary vaccination, the eruptions that occasionally follow vaccination, the practical details of vaccination, and, finally, the relation of cow-pox, horse-pox, and camel-pox to small-pox. The whole makes most interesting reading, coming as it does from one of no small experience.

Essentials of Homœopathic Therapeutics. Being a Quiz Compend of the Application of Homœopathic Remedies to Diseased States. A companion to the "Essentials of Homœpathic Materia Medica." By W. A. Dewey, M.D., Professor of Materia Medica in the University of Michigan, Homœopathic Medical College; former Professor in Hahnemann Hospital, College of San Francisco, Cal., etc. Second Edition. Revised and Enlarged. Philadelphia: Boericke & Tafel. 1898.

This is a work especially arranged for the use of students of medicine. It is a relief to find an occasional work not arranged so as to appeal to the practitioner as well as to the student. It is practically a materia medica and intended as a companion to the "Essentials of Homœopathic Materia Medica," and is calculated to prevent the student from "falling into the practice of the ancient school of associating remedies with disease, or diagnosis with treatment." This edition has been carefully revised and the numerous errors of the first corrected. The size of the volume has been extended by the addition of many characteristic indications.

The questions and their answers of which the book is made up cover two hundred and eighty-five pages. The present popularity of the author's name should help sell the work.

Handbook of Materia Medica for Trained Nurses. By John E. Groff, Ph.G., Apothecary in the Rhode Island Hospital, Providence. 12mo, pp. 235. Philadelphia: P. Blakiston's Son & Co. 1898.

This little work is divided into sections on official drugs and preparations and chemistry, and at the end are a lengthy glossary taking in all official drugs, a chapter on toxicology, and one on therapeutics. Not only are the crude drugs described, but the preparations made from them as well. The Latin and English names are both given. Short chapters treat of fermentation, volatile and fixed oils, glucosides, and alkaloids. It will undoubtedly prove a valuable aid to the nurse in securing a knowledge of drugs and their uses, so far as this is of importance to the nurse.

Ophthalmic Diseases and Therapeutics. By A. B. Norton, M.D., Professor of Ophthalmology in the College of the New York Ophthalmic Hospital; Surgeon to the New York Ophthalmic Hospital; Visiting Oculist to the Laura Franklin Free Hospital for Children; ex-President American Homœopathic Ophthalmological, Otological, and Laryngological Society, etc. Second Edition. Revised and Enlarged. Philadelphia: Boericke & Tafel. 1898.

The present issue has been extended to cover six hundred and forty-seven pages, and there are now ninety illustrations and chromo-lithographic figures in the text. The first edition of this work was made the text-book in twenty-one of the twenty-two homœopathic colleges of this country, thus establishing for it a wide reputation and assuring the present edition. The author's object of presenting a concise practical manual has prevented the record of many personal cases or illustrative instances. Much space is given to a consideration of the systemic treatment. Chapter VI. is devoted to a tabulated statement of diseases with more or less characteristic eye symptoms, which will prove useful in the diagnosis of many general diseases. The illustrations showing the proper way to make the various examinations are very good, and the colored plates at the back are worthy of notice. The edition has been decidedly improved and some hundred pages of new matter have been added.

A Clinical Manual of Skin Diseases, with Especial Reference to Diagnosis and Treatment. For the Use of Students and General Practitioners. By W. A. Hardaway, A.M., M.D. Second Edition, Revised and Enlarged, with 42 Engravings and 2 Plates. Pp. 557. Philadelphia and New York: Lea Brothers & Co. 1898.

That a second edition of this little manual should be called for so soon after the appearance of the author's much more pretentious work, written in conjunction with L. Bolton Bangs, of this city, speaks well for the favor in which his writings are held. The arrangement of the subject matter is well adapted to the uses of the student, for whom it seems especially fitted. The illustrations add not a little to the attractiveness of the volume.

Bulletin of the Harvard Medical Alumni Association. No. 12. Paper. Pp. 64. Boston: Published by the Association. 1898.

The "Bulletin" contains a report of the eighth annual meeting, held in Boston, June 28, 1898. There is an address by the president of the association, with other attractive features, and the presswork is of the usual excellence.

An Introduction to Pathology and Morbid Anatomy. By T. Henry Green, M.D., F.R.C.P., Physician and Special Lecturer on Clinical Medicine at Charing Cross Hospital and Physician to the Hospital for Consumption and Diseases of the Chest, Brompton. Revised and enlarged by H. Montague Murray, M.D., F.R.C.P., Physician to Outpatients and Lecturer on Pathology and Morbid Anatomy at Charing Cross Hospital. New (eighth) American Edition. Thoroughly Revised from the Eighth English Edition by Walton Martin, Ph.B., M.D., Assistant Demonstrator of Anatomy, College of Physicians and Surgeons, Columbia University, and Assistant Surgeon, Hospital of St. John's Guild. Illustrated with 216 engravings, of which 6 are in colors, and a colored plate. Philadelphia and New York: Lea Brothers & Co. 1898.

A number of important changes have been made in the sequence of subjects in this well-known treatise and the arrangement of the matter has been adapted to a more logical form and is in better accord with recent advances in our understanding of pathological conditions. Other alterations are the substitution of a chapter on the animal parasites for the sections on scrofulous inflammation, asexual spore formation, conjugation, and fertilization, and in the section on tumors the gliomata have been classed with the benign new growths, the lymphomata grouped under diseases of the lymphatic nodes, and the class of endotheliomata has been introduced. While the size of the book has not been materially increased, much valuable new matter has taken the place of less useful information, with distinctly advantageous results.

A Text-Book of Practical Therapeutics. With Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. With Special Chapters by Drs. G. E. de Schweinitz, Edward Martin, and Barton C. Hirst. New (seventh) Edition. In one octavo volume of 770 pages. Illustrated. Philadelphia and New York: Lea Brothers & Co.

Before one has had sufficient time to note the improvements of one edition another appears, with the addition of new drugs of value so far as a year's test of them can be expected to prove their worth. The arrangement is good and practical, and the plan of the index makes reference to any particular subject a matter of ease. The work has proven justly popular.

The Hygiene of the Voice. With 27 Illustrations. By Thomas F. Rumbold, M.D., Member of the St. Louis Medical Society, Permanent Member of the American Medical Association, etc. St. Louis. 1898.

This small brochure springs from the author's experience with singers and other professional people who use the voice a great deal, and is a good, practical, common-sense presentation of the subject. While there is little that cannot be found in good text-books on the nose and throat, the compact grouping permits an easy treatment.

Elements of Histology. By E. Klein, M.D., F.R.S., Lecturer on General Anatomy and Physiology, and J. S. Edkins, M.A., M.B., Joint Lecturer and Demonstrator of Physiology in the Medical School of St. Bartholomew's Hospital, London. With 296 Illustrations. Revised and Enlarged Edition. Philadelphia and New York: Lea Brothers & Co. 1898.

The student of medicine, appalled by the size and thickness of many of the so-called "handbooks," "guides," etc., of late years offered for his perusal in such pleasing variety, has before this turned with a sigh of relief to Lea Brothers' series of "Manuals for Medical Students" and found them refreshingly concise and free from the tautological padding that dis-

tends beyond all endurance the bulk and price of so many of our newer text-books.

The volume under consideration exemplifies all the good points of the others of the series, and in its present revised and enlarged edition succinctly gives the reader a clear insight into the present status of knowledge in the field of human histology. The chapters on the central nervous system have been practically rewritten and considerable additions made to other sections of the work, while many new illustrations and admirable typography will commend it to all interested.

Traité de Médecine et de Thérapeutique. Par P. Brouardel, Doyen de la Faculté de Médecine de Paris, Membre de l'Institut; et A. Gilbert, Professeur agrégé à la Faculté de Médecine de Paris, Médecin de l'Hôpital Broussais. 10 Vol. Illustrés de Figures. Vol. V. Paris: J. B. Baillière et Fils. 1898.

The fifth volume of this valuable treatise on medicine, practically the classic of French practice, maintains the admirable standard set by the preceding volumes. As in these, there is the same careful and elaborate consideration of the pathological features of disease processes which render modern classics so valuable. The chapters on diseases of the liver by Gilbert, Fournier, Garnier, and Sourmont, and those on diseases of the kidneys by Chauffard, are especially complete. The other articles—"Diseases of the Salivary Glands," by Dupré; "Diseases of the Pancreas," by Richardienne and Carnot; "Diseases of the Spleen," by Lannois; "Diseases of the Male Genito-Urinary Organs," by Guinon; and "Diseases of the Female Genito-Urinary Organs," by Siredey—are all monographs by specialists, some of the most competent in France. There is much excellent judgment shown in the editing of this system, as special attention seems to be paid to the general perspective of medicine and therapeutics.

An Abridged Therapy Manual for the Biochemic Treatment of Disease. By Dr. Med. Schüssler, of Oldburg. Twenty-Fifth Edition, in Part Rewritten. Translated by Prof. Louis H. Tafel. Philadelphia: Boericke & Tafel. 1898.

This is a literal translation without addition or change, and differs from the original only in containing an obituary of the author, who died just after the last edition was ready for the press. As a frontispiece is reproduced the letter written by the author giving his consent to translation. In "Some Thoughts on the Allopathic Treatment of Chlorosis," on page 151 it is contended that those allopaths who have recently used lime in chlorosis have unconsciously entered into the paths of biochemistry. The desire for chalk on the subject's part is the cry of the diseased cells for lime, and it is thought that this voice of nature should have been hearkened to before this. Iron and its artificial combinations cannot cure chlorosis, and allopathic doses spoil the stomach. Muriatic acid acts better, but instead we should give natrium muriaticum in minimal dose. Facial diagnosis is advocated, but rules for learning or practising it are not given. In an epilogue complaint is made that previous translators have introduced their own false views to the discredit of the author.

Virchow as Huxley Lecturer.—The *Saturday Review* says: "The selection of Prof. Rudolph Virchow as the second Huxley lecturer was not the most fortunate choice that could have been made. It is, in fact, only explicable as having been made by medical men and not by biologists. In science, philosophy, and politics, Huxley and Virchow were almost as far opposed as men could be. Virchow is the last serious opponent of the evolutionary theory of the origin of mankind, which Huxley did so much to establish. Virchow has always been a reactionary, while Huxley was the foremost champion of the most advanced school of biologists. In politics Virchow is a reckless social democrat, whereas Huxley was an enthusiastic advocate of individualism. Most of the leading English biologists seem to have felt that they honored Huxley's memory most by staying away from Virchow's lecture. We hope that next year a lecturer more in sympathy with Huxley's teaching will be chosen."

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

CLINICAL SOCIETY—MYOSITIS OSSIFICANS—MONGOLIAN IDIOTS—ENEMA RASHES—PIN IN APPENDIX—MEAT AND MILK INSPECTION—COLLEGE OF SURGEONS—SERUM—ROYAL ARMY MEDICAL CORPS—PORT OF LONDON SANITATION—CONSCIENTIOUS OBJECTORS—GUILD OF ST. LUKE—HARVEIAN ORATION.

London, October 21, 1898.

The Clinical Society began its sessions on Friday, when Mr. Langton thanked the fellows for electing him to the presidency for a second term, and congratulated them on the position of the society, which numbers five hundred and eighty-eight. An index to the thirty volumes of the "Transactions" has been edited by Dr. A. E. Garrod.

Dr. Herringham related a case of progressive myositis ossificans in a girl of eight, who was when five years old shown to the society. Then the shoulders were rigid from ossification of the pectorals and the latissimus; the head was fixed from swelling and rigidity of the sterno-mastoids. Microdactyl of the great toes was also observed. Now the back has become so rigid that the spinal column moves like a rod. Bony prominences or nodules are found behind the mastoid process, on the arms (ulnar surface), and one finger; and there are pencils of bone in the abdominal muscles. Skiagrams show the shoulder-joint to be natural, the deposit being in the muscles only. The deformity of the great toe is complex. The lesions of the disease are confined to the somato-pleural layer of the mesoblast, and in this to bone, periosteum, and connective tissue. The disease is congenital, not hereditary, and its pathology uncertain. Injury seems the only proved exciting cause, as there is no satisfactory evidence of any connection with rheumatic affections. Pincus regards it as a form of new growth, and perhaps it may throw some light on the formation of tumors.

Dr. Campbell Williams mentioned a case in which there was a history of rheumatism, and the president asked if rest alone had resulted in improvement.

Mr. Spencer said that in some cases there was ossification of muscles and tendons from injury or rheumatism, but such cases should not be confounded with those which were congenital. In these last, deformity of the toes seemed constant. The skiagrams showed irregularity of the epiphyseal lines. Ossification, he remarked, might spread from periosteum to muscle.

Dr. Herringham, in reply, said that the swelling diminished under rest, and he admitted that rheumatism might be a predisposing factor. The growths did not always spring from bone. Sometimes they occupied muscles and even the areolar tissue between. It was therefore not only bones and muscles that were involved, but the fibrous tissues generally.

The next subject before the meeting was the association of congenital heart disease with the Mongolian type of idiocy. Dr. Garrod mentioned five cases illustrating this, and quoted Dr. John Thompson as to three others. All the subjects were under five years of age. Several had died. It was suggested that the early death common in these cases accounts for the fact that they are not often seen in asylums.

Dr. Gossage mentioned the case of a girl, two and one-half years old, who was a typical Mongolian idiot, and looked to be only about thirteen months.

Dr. Guthrie had secured post-mortem examinations in two cases of the Mongolian type of idiocy, one of which had ultimately become dropsical. In both cases the heart was hypertrophied and its right side

equal in thickness to the left. The septum was defective in both.

In reply to a question, Dr. Garrod said he knew of no mechanical reason in the conformation of the orbits to explain the Mongolian direction of the eyes.

The subject of erythema following an enema in children was brought forward by Dr. Still. Though of little importance *per se*, such rashes may obscure the diagnosis of specific fevers. From a study of twenty-six cases, Dr. Still considers that enema rashes have a characteristic appearance and course. In his cases there was a bright red erythema on the front of the knees, back of the elbows, the buttocks, and the face; in some cases the rash was scarlatiniform, and in others the two forms seemed mixed. It appeared from twelve to twenty-four hours after the enema, lasted from twenty-four to forty-eight hours, and scarcely ever was accompanied by constitutional disturbance. The absence of this and other symptoms differentiate it from scarlet fever, measles, or other exanthemata. It seems not improbable that some cases of "surgical scarlet fever" may have been rashes due to an enema before the operation. The rash must be regarded as the result of vasomotor dilatation, and three possible explanations suggest themselves: (1) absorption of some toxin from the soap or (2) from the fæces; (3) reflex effect on the vasomotor centres.

Mr. Charles Symonds read notes of a case in which the vermiform appendix occupying a hernial sac was found perforated by a pin. He referred to other cases in which true foreign bodies, as distinguished from concretions, had been found, and mentioned two others in which the intruder was a pin.

The president said it was not very infrequent for the appendix to find its way into a hernial sac, and foreign bodies were not uncommon in the appendix. He related two of his own cases. In one a pin, two inches long, was removed; in the other peritonitis occurred a few months after operation, due to the presence of a needle which escaped detection at the operation and brought about eventually a fatal result.

The county council is likely to adopt a resolution of its health committee in favor of superseding all private slaughterhouses by public abattoirs. This would be a first step—and a considerable one—toward establishing an efficient system of meat inspection. Recent events have impressed the public with the necessity for such inspection of meat, milk, and all kinds of food. The council's medical officer, after visiting various cities, has reported strongly in favor of public slaughterhouses as essential to the adequate inspection of meat. This view accords with the recommendations of the royal commission on tuberculosis. That commission also recommended that our health authorities should have the control of the milk supplies, involving *inter alia* power to examine all cows in their districts or all from which milk is obtained and brought into their districts, and to prevent the sale of any milk which might be injurious to health. The county council is ready to undertake the control of both meat and milk, as well as other matters relating to the food supplies, and probably it would be a good thing for the public health that it should do so. We may therefore hope that there will not be delay in conferring on the council the powers necessary for carrying out its purpose.

From the new calendar of the Royal College of Surgeons, just published, it appears that there are now 1,195 fellows, 17,199 members, 1,283 dental licentiates, and 308 diplomates in public health.

Dr. Sims Woodhead's report as director of the research laboratories of the two royal colleges shows that considerable advances have been made. The antidiphtheritic serum prepared is now of three hundred and seventy-five units per cubic centimetre, and special attention is being paid to the standardization of antitoxin. Ehrlich's new method is now employed. There are arrangements for testing any serum sent for examination. No less than two thousand and three doses have been supplied to hospitals and practitioners during the year for use among the poorer classes, in accordance with the conditions of a grant made by the Goldsmiths' Company.

The war minister has invited some of our medical schools to recommend persons for admission to the royal army corps without examination. There is much misgiving as to the propriety of assisting the war office in this way to fill up vacancies which should not exist. There was so much delay in the concessions that the last "competitive" examination did not attract a sufficient number of candidates. It is dangerous to open a door to patronage in this manner, and any man thus selected will probably be looked down upon as inferior. They are frankly informed they will rank after the successful candidates in the last examination until the next, after which their places when they receive their commissions will be determined by the examination in special subjects at Netley next February. It is not a question of the value of the competitive method of appointment, but of the danger of supplementing the deficiencies of that method, instead of removing them.

Dr. Collingridge's half-yearly report shows how important is his work as medical officer for the port of London. In that period the sanitary officers visited 15,531 vessels in the docks and the river. Structural alterations for sanitary defects were consequently carried out on 281 vessels. The medical officers visited 4,876 vessels arriving from abroad, and of them 586 were medically inspected—*i.e.*, passengers to the number of 2,733 and of the crews 6,135 had to be individually examined, and 56 cases of infectious disease were discovered. There were 10 cases of small-pox, 3 of scarlet fever, 30 of typhoid, 3 of diphtheria, and 10 of measles dealt with. One of the cases of diphtheria was landed at the port hospital, and Dr. Hancock, who had examined and removed the patient, caught the disease, but happily had only a mild attack. When there was great negligence, proceedings were instituted against owners, and in some cases convictions obtained.

The conscientious objector to vaccination has developed his conscience to such an extent that he objects to paying the fee of 1*s.* or 1*s.* 6*d.* for his certificate, and there is talk of a lawsuit to ascertain if the fee can be legally enforced. At another town the magistrates were satisfied without oath or even individual declarations, but granted certificates to candidates in batches of ten and twenty at a time who said yes or nodded in reply to the question if they had a "conscientious objection." It is said that in the course of two and one-half hours above six hundred were thus released from their duty to their children. And this in the country of Jenner!

Those doctors who have a *penchant* for masquerading in gorgeous attire had another opportunity provided for them on Wednesday. The guild of St. Luke organized another display at St. Paul's Cathedral. The guild is infected with the ritualistic epidemic, and seeks its solace at the hands of those of the clergy who most delight in "vestments." Graduates were invited to attend the service in their academical dress, and a firm of dealers in clerical attire promised to be present and "robe" the gentlemen who hired from them for the occasion. There was a large attendance, and one of the daily papers said the dome of St. Paul's was brighter than a tulip bed in full bloom. Another reporter says the solemn service began with a procession of robed doctors, choristers, clerical associates of the guild, the clergy of the cathedral, and the bishop, pre-

ceded by the episcopal staff. Some non-graduates seem to have been out of such displays for want of an academical robe. So they have persuaded the College of Surgeons council to approve of a brand-new design. How far such authority may be accepted remains to be seen. We may yet have all our corporations vying with each other as to which will produce the most popular dress, but there is hope that the vestment epidemic may soon die out.

A departmental commission, on which there are two doctors, has been appointed to advise the home secretary as to regulations to be adopted under the recent legislation as to inebriate retreats.

Tuesday, the 18th, was St. Luke's day, when, according to custom, the Harveian oration was delivered at the Royal College of Physicians. This year Sir D. Duckworth was the orator.

OUR BERLIN LETTER.

(From our Special Correspondent.)

THE PATENTING OF REMEDIES—THE CONVENTION OF NATURAL SCIENTISTS AT DÜSSELDORF.

BERLIN, October 15, 1898.

MUCH talk has been occasioned in medical circles here, because Professor Behring after repeated previous attempts has finally obtained a United States patent upon the manufacture of diphtheria serum. This patenting of a scientific discovery by a physician is so contrary to medical custom and usage that it may readily be understood that Professor Behring has been violently attacked by both physician and layman here. The daily journals have taken up the matter, and the *Berliner Tageblatt* says: "Professor Behring places himself on the same standpoint as any commercial man who seeks to protect his discovery through law. Of course he has an entire right to do so. The public, though, looks upon the physician as something else than a business man, one who deals in medicines and remedies. This is the first case of this kind in the entire history of medicine. The discoverers of antipyrin, etc., were not physicians." And in thus expressing itself the *Berliner Tageblatt* but re-echoes the general sentiment of the laity here. Naturally the American and English medical journals criticise Behring's proceedings even more severely, but with less right perhaps; for in our country it is not permitted to patent any medical remedy, while such a prohibition does not obtain in America—at least only morally and not legally. Behring thus defends his actions: he has spent his entire fortune to discover a specific remedy for diphtheria, and, as he has long since given up the practice of medicine to gain his livelihood, he is necessarily thrown upon other resources for his living and for the further pursuit of his investigations. Behring puts the case so that one is led to conclude that dire necessity compelled him to take the course he did; when we, however, remember that he receives yearly 60,000 marks from the "Höch'ste Serum-Fabrik," and has besides an extra income as professor of hygiene at the University of Marburg, we must fail to appreciate the justice of his arguments and excuses. America will now have to pay more for its serum, but there is a possibility of its being soon dispensed with. Here, at all events, the list of those who deprecate its working is steadily increasing.

A striking contrast to the unpleasant impression which such business-like methods on the part of a physician make upon the public is shown by the great appreciation which the purely scientific proceedings of the Düsseldorf convention have awakened. This assemblage, which was held during the latter part of September, was participated in by about twenty-five thousand persons—physicians, scientists, and their ladies.

Professor Tillmann's address upon the progress of military surgery deserves a mention. He called attention to the great decrease in dangers of infection, such as were common, for example, during the Franco-Prussian war. The danger of infection from the clothing of the wounded has been exaggerated; very often there are no pathogenic germs present. In the treatment of gunshot wounds, Tillmann would recommend therefore an expectant treatment, especially in view of the fact that the number of physicians is very small in proportion to that of the patients. In this respect, however, the German war department has made wise preparations; outside of the military surgeons it controls forty-five thousand trained nurses and orderlies. The speaker condemned the Dum-Dum missiles as inhuman. He closed his address with some remarks to the adversaries of vivisection, in which he declared that animal experiments are unavoidable for the progress of our diagnostic and therapeutic knowledge.

In the pædiatric section much attention was allotted to the important subject of the nourishment of infants with sterilized cow's milk, with special ventilation of the food-quantity question for normal bottle-fed babies. Carstens is of the opinion that in this regard clinical attempts have been too much neglected, and that chemical experiments have guided us almost solely. As children who are nourished solely with sterilized milk present in consequence many symptoms of ill health, Carstens is in favor of a mixed diet. The simple boiling of the milk at home is preferable to factory sterilization.

During the main medical session Prof. M. v. Frey (Zürich) read a paper on the action of the heart and certain physiological experiments and deductions therefrom. He had endeavored to keep up the action of the isolated heart of warm-blooded animals by means of suitable nutritive solutions, in the hopes of solving with such a heart a number of important physiological questions. He finally succeeded very recently in continuing the action for an entire day by means of a minute quantity of blood, or of serum even, in the coronary system. It is not necessary here to explain what a grand progress has thus been made for the solution of many questions in the physiology of the heart.

The "Combating of Tuberculosis in Germany" formed the great topic of discussion of the section for hygiene and bacteriology. Minister Count Posadowsky stated that the board of directors of the central committee for hygiene would call a congress to convene in Berlin next spring, with a view to consulting upon all questions pertaining to the establishment and government of healing stations. It was repeatedly pointed out what a great benefit would follow if the Naturalist Assembly should occupy itself with this question, for this body is composed of members of various departments of science united here for a common object. As a final result a permanent committee was organized for the devising of ways and means to combat tuberculosis.

After a long list of papers and addresses, of which one by Martins, on the "Causes of Disease and the Forces which Oppose these Causes," excited especial interest, the assemblage, over which Professor Waldeyer had presided, closed its session, all the participants being well pleased with the work accomplished.

Night Sweats of Phthisis.—Atropine sulphate, gr. $\frac{1}{50}$ hypodermically at bedtime. Also, picrotoxin, gr. $\frac{1}{60}$ hypodermically at bedtime.—WILLIAM MURRELL.

THE CRITICISM OF STATE HOSPITALS.

To the Editor of the Medical Record.

Sir: The report of Hon. S. F. Nixon to the State comptroller, criticising the cost of maintenance and treatment in our insane hospitals under the State-care system, is noticed in a late number of the Medical Record. This cost under the old plan of local management was indeed enormous, being nearly one hundred per cent. greater than in the asylums of New England, Pennsylvania, and other States. One consideration is sufficient to explain this fact. It is that in both the construction and maintenance of our asylums the main object of their managers has been to expend the largest possible sums from State and county treasuries for the benefit of local interests. Needless to say that asylums erected and maintained upon such a plan have not been easily brought under a system of honest and economical management. Their cost of maintenance has, however, been reduced twenty-five or thirty per cent. under the State-care law, while other reforms still more important than economy have also been accomplished.

Most important of all in the administration of an asylum, as every one knows, are the selection and training of attendants. While these were mainly taken from an idle and worthless class who had failed in other vocations, the insane suffered that deplorable neglect and abuse which their helpless condition made easy to commit and difficult to prove. Under the State-care and civil-service laws the hideous evil has been almost entirely abolished. Is it possible to suppose that public opinion will permit a return to the old system of local management and its inevitable consequences?

And yet it is to be feared that this is the underlying motive of the criticism of asylum expenditures which has lately been made. The politicians have seen a million dollars yearly, for the last five years, expended for the building and maintenance of hospital asylums in this State, and which was not shared with them. Let us hope that they may not prevail with the legislature, and that all who are interested in the medical and humane treatment of the insane will see to it that lunacy reform shall not be permitted to fail in the Empire State.

L. A. Tourtellot, M.D.

Utica, N. Y., October 26, 1898.

TUBERCULOSIS.

To the Editor of the Medical Record.

Sir: I beg the privilege of correcting the report of my remarks at the meeting of the New York State Medical Association, which appeared in your esteemed paper of October 22d. A few remarks I made were incorrectly reported and I cannot let them go, as they do not represent my views and are contradictions of what I have expressed elsewhere.

(1) I did not say that I was "a convert to the view that the channel of tuberculous infection was the digestive tract." I said that I was willing to admit that formerly I held with many others the view that the dissemination of the germs contained in carelessly deposited sputum of tuberculous patients was the prime and most important factor in propagating the disease, but that recent information which I gained from studying the etiology and history of a large number of cases had converted me to the idea that tuberculous infection by ingestion of tuberculous substances should be considered as frequent as infection by inhalation.

(2) I did not say that in children the place of least resistance to the invasion of the bacilli was the lungs; this is not so. In children it is the delicate intestinal epithelium which offers to the bacilli contained in tuberculous milk the most favorable abiding-place. I said apropos of this mode of infection that the reason we so rarely find primary intestinal tuberculosis in adults, in spite of the frequent ingestion of tuberculous substances, is to be explained by the fact that the epithelial lining of the intestines is stronger and resists the colonization of cultures. If the individual is in poor health and the phagocytic power of the blood enfeebled, the bacilli ingested by a grown person usually find the apices of the lungs to be the *locus minoris resistentiæ*, which they reach through the medium of the circulation of the blood.

If you can insert these corrections in your next number I shall feel greatly indebted.

S. A. Knopf, M.D.

955 Madison Avenue.

INSTRUCTION IN INSURANCE EXAMINATION.

To the Editor of the Medical Record.

Sir: I want to enlist the aid of your valued paper in behalf of a department of medical skill which is almost totally neglected in the curriculum of our medical schools. I refer to the examination of candidates for life insurance. Practically no provision is made for instruction in this branch in any medical school, and only a most incidental course is given in some post-graduate institutions. The life-insurance companies of the United States had on their lists about two hundred thousand examiners in 1897. As one examiner frequently held appointments from several companies, the number of physicians actually employed was considerably less. They are selected with great care, and the position is considered one of honor and to be sought for. So they can be regarded as well-picked men, and the companies recognized their claim to the extent of $2,500,000, which was the approximate amount paid out for medical fees in 1897 by the regular companies, not counting the assessment and fraternal associations. This contribution to the income of the profession entitles the companies to more consideration at the hands of the teaching bodies.

Nor can it be said in reply that the ordinary course of instruction covers all that is needed for life-insurance examinations. Something more is wanted than the mere technical skill of a training in physical diagnosis. How can a physician intuit the difference between a private patient seeking advice and an applicant desiring insurance? The most conscientious man regards the examination as a contest, and will not volunteer any information about himself, even though he may answer fully every question that is asked. Of course an examiner learns this fact in time, but while learning it he may pass for a company thousands of dollars of insurance on lives that are below the standard. Likewise the tact that handles smoothly both applicant and agent is acquired after a while, but often with the loss of much good business. The need for thoroughness and the ability to differentiate between essential and petty facts can be taught by precept as well as by the pain and mortification of experience.

For similar reasons instruction should be given in regard to making examination of applicants for positions in the civil service. This line of work is steadily growing, and promises to become of considerable importance. On the other hand, the office of examiner of applicants for pensions is a haven for political physicians, and the selection of the cases is determined usually by the political affiliations of the applicant, rather than by the merits of his disabilities or his deserts. However, there are many excellent considerations which, if fearlessly applied, would materially re-

duce the pension list, and these might be taught in preparation for that happy day when the yawp of the pension agent will no longer be heard in the newspapers.

Some recognition of these allied branches ought to be given by the medical schools. A short course of instruction could easily be fitted into the work of the last year. It could be made compact and concise, and yet furnish all the needed information. I bespeak your co-operation in obtaining this boon.

BRANDRETH SYMONDS, M.D.

October 29, 1898.

BOTTINI'S OPERATION FOR ENLARGED PROSTATE.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: I noticed in a recent issue of the *Medicinische Monatschrift*, in the report of a discussion on Bottini's cauterizing prostatic operation, that Dr. Freudenberg commended the preliminary filling of the bladder with boric solution, in order to prevent entanglement of any of the mucous-membrane folds with the blade of the incisor—a complication which, he said, had happened in one of his operations. I have tried this, and found it very unsatisfactory. There was considerably more pain than was the case (the same patient, by the way) when the incision was made with the bladder empty.

I found by experimentation that the blade could not be brought to a red glow while under water. Dr. Freudenberg suggested that the close hugging of the prostatic tissue by the instrument would prevent any of the solution from coming in contact with the blade, and the latter would therefore work just as well with the bladder full of fluid as with it empty. Of this I am very much in doubt, and my case mentioned confirms that doubt. I believe the fluid nearest the blade became hot and scalded the adjacent parts, producing the unusually severe pain.

To obviate the defects suggested, and at the same time to accomplish the object of smoothing out the folds of membrane, in my last case I injected air from an eight-ounce bulb syringe directly into the bladder. It was entirely satisfactory. No pain was occasioned thereby, and the air was readily withdrawn by catheter after the operation. BRANSFORD LEWIS, M.D.

ST. LOUIS, MO., October 27, 1898.

"THE MEDICAL ASPECTS OF CAMP MANAGEMENT AT CHICKAMAUGA."

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: In the issue of the MEDICAL RECORD of October 22d, Lieut. H. A. Haubold, assistant surgeon, eighth regiment, New York volunteers, in an article entitled "The Medical Aspects of Camp Management at Chickamauga," goes out of his way to make the following remark: "One writer, a surgeon on a general staff, tells us, in an article in the *Journal of the American Medical Association*, that eighty per cent. of the surgical cases at Chickamauga Park were venereal. When it is remembered that the troops were not under fire, and that the surgical cases were rare, the misleading character of his statement is sufficiently apparent." This sentence is my apology for paying my respects in return, by reviewing his article. In extenuation, however, of its misleading characteristics and various defects, I quote his own apology, namely, that he was on duty in Chickamauga Park from the 24th of May until the 8th day of July—a period of six weeks, which includes the time of his military education. In the third paragraph he says: "It is also a peculiarity on the part of commanding officers to be devoid to a considerable extent of this desire;" namely, "to help and render easier the lot that has befallen the poor devils [sick soldiers] that come under their observation." I suppose he means who come under their observation.

It is a fact beyond controversy, with rare exceptions, that commanding officers, as far as their knowledge of hygiene extends, put forth their best efforts to preserve the health of their men, and it has been my observation that they are almost uniformly solicitous concerning and attentive to sick soldiers.

In paragraph 4 he gives an abstract of the features of Chickamauga Park, which might lead the readers to compare it with the desert of Sahara, provided the latter was covered with "scant woodland." Chickamauga Park is one of the most beautiful parks, beyond the environment of cities, in the world. It is beautifully and healthfully shaded by well-grown timber, free from underbrush and all impediments to easy foot travel. The ground is undulating in all directions. It has a perfect natural drainage, and is traversed by broad, smooth, excellent macadamized boulevards. At various points in the park, which is about seven miles square, there are small farms cleared of timber, and no longer under cultivation. They are now known as "fields" or "battlefields," and mark sites of the conflict in September, 1863. They served the purpose of drill grounds this year. The park is ornamented very profusely with beautiful monuments, erected to the memory of those who took part in or died in that memorable conflict. There are also erected in the park several very high towers; they are built of structural iron. When Chickamauga Park contained forty-five thousand troops, owing to the complete protection of the "scant woodland," an observer in the top of any of these towers was unable to see the tents of soldiers, so completely were they sheltered by the foliage which was "daily kissed by a broiling Georgia sun." This reference to Chickamauga Park is made in order that readers who have not seen it may not be misled as to its character by Lieutenant Haubold.

In paragraph 6 he states that regular troops preceded the volunteers several weeks in their occupation of the park. They arrived there on the 24th of April, one month before, and the regular troops were still there in September. They lived on army rations, food which our author says was "badly selected;" namely, bacon, beef, potatoes, bread, hardtack, tomatoes, onions, beans, and coffee. How the army in 1863 would have cheered this sumptuous fare! During all this period, from April 24th until September 1st, one regular died, and during the same period four hundred and twenty-five volunteers died. Is this diet good for regulars and bad for volunteers?

I indorse all he says in regard to the clay soil and rocky strata of Chickamauga Park, especially what he says in paragraph 8: "The rocky nature of the substrata made absorption or percolation of the contents of the sinks into the earth impossible." But I almost lose my breath when I read in paragraph 9 "that for the first few days my regiment was in camp the water supply did not reach our regimental camp, that water was drawn for drinking-purposes from Chickamauga creek, at points where infection was possible through contamination from drainage from the camp sink holes of other regiments." It was not from overflow of the sinks, for the writer says: "No rain fell for weeks."

As to the water supply, he says, in paragraph 12: "Contrast this warm, nauseous mud soup to clear extract of fæces I have referred to" (see paragraph 8). He further says: "In a short time the water was clarified by sedimentation." Was the influent end of the pipe line at Chickamauga below Crawfish springs in a pool where the law of gravitation was suspended and

where "sedimentation" could not occur, or was there a gang of witches there with sticks constantly stirring up the pool where the pipe line ended and where there "had been no rain for weeks," and were they filling it with "mud soup"?

In regard to proper food for the sick, in paragraph 20 he says: "Water, rice, and milk — these three things were obtainable;" while in paragraph 24 he says: "Grave cases with bloody stools and mucous stools occurred, and were not readily amenable to treatment, due in part to the fact that milk and readily digested food, such as eggs, rice, etc., were not obtainable."

In paragraph 25, Surgeon Haubold, in speaking of venereal diseases, says: "Still it is not true that they were more prevalent than one would have a right to expect." When a soldier enlists in the army he takes an obligation to give his best services to the government for a fixed consideration. When he deliberately disables himself he breaks his contract, perjures himself, lays himself liable to peremptory dismissal from the service. He endangers his messmates, and becomes a dirty, nasty, stinking nuisance to the medical officers; he is simply a male whore, and deserves to be treated as such. How many of these people to a company or regiment would one "have a right to expect"?

In 1863 Rosencrans' army, after a march from Murfreesboro, through incessant rains and deep mud, and with scanty food, almost shoeless and in tattered clothing, and tentless, reached the battlefield of Chickamauga and fought the memorable conflict of the 20th and 21st of September. These troops left killed and wounded on that battlefield forty per cent. of their number; the remainder retreated to Chattanooga, to live out of doors, dig trenches, and to live on one-third rations, while General Wheeler with a large cavalry force swept across the State of Tennessee from east to west, and *en route* destroyed the wagon trains carrying provisions to that famishing army. Did they whimper and whine about their water? Did they cry out to the whole country that they could not get enough ice (to put in a hole in the ground), and that army rations were not well-selected food? Or did they, on the other hand, put their patriotism in evidence and prove to the world that they were the sons of their fathers? I maintain that the army at Chickamauga was very seriously damaged for effective service by venereal disease, and that, notwithstanding surgical accidents were frequent, including also an occasional gunshot wound, by far the most frequent operation was the enucleation of inguinal glands. As a military surgeon, I have never had any other feeling than that of disgust and contempt for those color-blind sidereal knights, who were constantly making observations of Venus, experimenting with Mercury, and giving daily exhibitions of Uranus.

The army at Chickamauga contained representatives of the best blood of the land, and they were good soldiers. But it also contained a large number of worthless milksops and hoodlums. The former should have been accompanied by wetnurses and kept on ice, while the latter in hundreds of instances should have been sent to military prisons, and decent messmates would have been relieved of the hardest lot that can befall a soldier, viz., living, eating with, and sleeping beside a dirty scoundrel with gonorrhœa or syphilis, or both. Have decent volunteers a right to expect this? The Chickamauga army was followed by an army of prostitutes, capable in time of ruining it, and the amount of venereal disease existing in the army was very great. The food was good. The water from the springs was delicious; that from the pipe line pure and wholesome, but warm. I had an abundance of ice, which I did not keep in a trench; a gum sheet and a stretcher made a tub, and baths were given right along. For a few days I was short of lumber and cots, but this deficiency did not last and the brave boys did not complain, nothwithstanding that a dozen hoodlums with gonorrhœa and syphilis were at that moment occupying cots on a board floor. R. S. SUTTON, M.D.,
Major and Chief Surgeon, Commanding Second Division Hospital, First Army Corps, Chickamauga.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending November 5, 1898:

	Cases.	Deaths.
Tuberculosis	178	152
Typhoid fever	56	14
Scarlet fever	92	5
Measles	104	3
Diphtheria	133	14
Laryngeal diphtheria (croup)	6	3
Cerebro-spinal meningitis	0	8
Yellow fever	0	1
Chicken-pox	19	0

Bismarck's Brain. — The *Medicinisch-Chirugisches Centralblatt* says that an anthropologist named Ammon states that Bismarck's brain was probably the heaviest on record. He judges from measurements of Schäfer's bust of the great chancellor that his brain must have weighed 1,867 gm. (over 58 ounces); Cuvier's brain weighed 1,830 gm.; Byron's, 1,807; Kant's, 1,650; Schiller's, 1,630; and Dante's, 1,420. The average for a well-built European man is given as 1,380 gm.

Unnatural Death.—Dr. Hill, master of Downing College, Cambridge, read a paper at the recent meeting of the Sanitary Institute of England, with the above title. He told his hearers that about one million babies were born annually in England. Thirty thousand of the million would die violent deaths from accident, 30,000 would die unnecessarily from tuberculosis, and 120,000 more from other absolutely preventable causes, such as small-pox, measles, and scarlet fever. Only 45,000 would be allowed to live out their natural lives, and nearly 1 in 20 would die because the machine was worn out. One-fourth of all the diseases which destroy life are absolutely preventable, and fifteen years would at once be added to its average duration if the practice of hygiene were placed on a level with its theory. Dr. Hill attributed the greater number of the diseases over which the individuals affected by them have personal control to mistakes in eating and drinking.—*London Times.*

Bullet in the Heart.—A French surgeon in 1875 presented to the Paris surgical faculty the heart of a woman who had been shot with a revolver. The bullets measured three lines (one-fourth of an inch) in diameter. One of them had passed through the right lung, had penetrated the heart by the posterior wall of the left ventricle, and was found lodged in the latter. She lived eighteen days, and nothing during life led to the suspicion that such a lesion had taken place. Auscultation revealed nothing and the pulse was regular. The hole made by the ball could hardly be discerned.—*Lancet*, 1876.

Syphilis in the Sixteenth Century.—The father of Catherine de Medici (the wife of Henry II. and queen mother during the reigns of Francis II., Charles

IX., and Henry III.) is stated to have died of syphilis a few days after his daughter's birth. Catherine was an only child and her mother died at her birth. Her portraits, which are numerous, show no evidence of inherited taint. At that time syphilis was a new disease in Europe, and, as it had not been in any way associated with sexual habits, no disgrace was supposed to be attached to it. Historians felt no delicacy in recording the fact that any one of whom they wrote had suffered from it. Many deaths of ecclesiastics as well as of civilians were attributed to it.—ROSCOE, "Life of Lorenzo de Medici," vol. ii.

Strange Foreign Body in Vagina.—Probably the strangest foreign body ever discovered in the vagina was one found by me—a cockchafer lying beside a pomade pot.—TREVES, "Surgery," vol. iii., p. 387.

Want of Tone.—A tendency to perspire on the slightest exertion is not unfrequently coincident with habitual chilliness, and both are indicative of want of tone.

Death of Sterne.—Lawrence Sterne died rather suddenly in lodgings in London, at the age of fifty-five years (1768). He had been suffering from a chest ailment for several years, and had been sent for long periods to the south of France. He was liable to attacks of what he termed "my vile influenza." It was from one of these that he died—no doubt, intercurrent catarrhal pneumonia.—HUTCHINSON, "Archives of Surgery."

A New Idea in Blackmailing.—Seldom has a more infamous system of blackmail been exposed than the diabolical plan for extorting money devised by the man Mitchell. The wonder is that anybody could have been silly enough to fall into his trap, but his victims were entirely women, whose utter ignorance of law and government made them an easy prey. His method was to send a typewritten letter to ladies who had purchased at a certain establishment some quack female pills or other medicine. This document, which was signed "Charles J. Mitchell, public official," contained an intimation that legal proceedings had been commenced against the recipient, who was charged with committing a criminal offence. These proceedings were to be stopped on receipt of £2 2s. (about $10), costs, and a solemn promise in writing that the offence should never be repeated. The police found evidence that more than five hundred persons had been frightened into paying the amount demanded, and the neighborhood of Northumberland Avenue, where Mitchell's office was situated, was besieged by unhappy victims, trying to obtain an interview with the blackmailer. If it had not been for the husband of one of the threatened persons, this new terror might have gone on indefinitely, with the most tragic results. —*Saturday Review.*

Strange Foreign Body in Groin.—A man developed an abscess in the groin. When the abscess was opened, it was found to contain a small spelling-book. It was ascertained that this patient, when a boy, was shot, and it is supposed that the spelling-book was in his trousers pocket, and was shot into the groin.—*Medical Press and Circular*, 1884, vol. ii., p. 419.

Drink Question in Belgium.—For some time past the drink question has been exciting among thoughtful people in Beligum serious reflections, and the figures collected by M. Jules Le Jeune, ex-minister of justice, certainly justify them. The population of Belgium is still less than seven millions, but it can boast of one hundred and ninety-eight thousand wine and beer shops, or one for every thirty-five persons, women and children included. The total drink bill of the country is valued at £20,000,000 ($100,000,000). It is said that seventy-nine per cent. of the paupers living in the State are drunkards, that eighty per cent. of the suicides have a similar origin, and finally that forty-five per cent. of the lunatics were victims to what is called the alcohol habit.—*London Times.*

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

AMERICAN POCKET MEDICAL DICTIONARY. Dr. W. A. N. Dorland. 12mo, 518 pages. W. B. Saunders, Philadelphia. Price, $1.25.

THE CHANGE OF LIFE IN WOMEN. By Dr. J. C. Burnett. 12mo, 185 pages. Boericke & Tafel, Philadelphia. Price, cloth, $1.00 net.

MEDICAL AND PHARMACEUTICAL CHEMISTRY. By Dr. E. H. Bartley. Fifth Edition. 8vo, 738 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia. Price, $3.00.

KING'S AMERICAN DISPENSATORY. By Dr. H. W. Felter and Dr. J. U. Lloyd. Eighteenth Edition. Vol. I. Royal 8vo, 941 pages. Illustrated. The Ohio Valley Company, Cincinnati, Ohio. Cloth, $4.50; sheep, $5.00, postpaid.

ESSENTIALS OF MATERIA MEDICA, THERAPEUTICS, AND PRESCRIPTION WRITING. By Dr. Henry Morris. 8vo, 288 pages. W. B. Saunders, Philadelphia. Price, $1.00.

ORTHOPEDIC SURGERY. By Dr. A. S. Roberts and Dr. J. K. Young. 8vo, 298 pages. Illustrated.

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Original Articles.

THE RADICAL TREATMENT OF PROSTATIC HYPERTROPHY.[1]

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THE term prostatic hypertrophy in its proper and generally well-recognized sense should be applied only to the senile hyperplastic changes peculiar to the organ. This hypertrophy is the result of a proliferation of the muscular and of the glandular structures. The changes in these different tissues, however, bear no definite ratio to one another, although as a general rule the great bulk of the increase in size is dependent on the muscular element. Associated with the hypertrophy of the tissues just mentioned there is also a proliferation of the connective tissue of the part. When the connective-tissue proliferation is abundant and dense the diseased organ is never greatly increased in size and is correspondingly hard and sclerous. When the opposite condition prevails, the hypertrophy may attain great size and is usually soft and succulent. Although a hypertrophied prostate as it presents itself to the touch of the finger tip on rectal exploration may, and often does, appear quite uniformly enlarged, there is in my experience practically no uniformity in connection with its enlargement, with reference to the prostatic urethra and bladder. Its encroachments on those cavities are, in the popular professional mind, represented by the growth of a so-called middle prostatic lobe, which is situated with a considerable degree of exactness dependently and just back of the vesico-urethral orifice. This projection is also usually pictured as a rounded knob, varying in size from that of a hazelnut to that of an English walnut. Such a condition may of course occur; still, as a result of much experience wherein I have been able to examine conditions minutely, by the sense of both sight and touch, through the medium of a suprapubic vesical opening, I cannot call to mind any two instances in which the existing lesions have presented perfectly similar evidences. Sometimes hypertrophies have occurred, packed more or less closely about the prostatic urethra, or a mass, in connection with the floor, the roof, or either side of that portion of the canal, has bulged into its cavity as an irregular tumefaction. Intravesical projections caused by the enlargement may jut into the vesical cavity as a collar about the vesico-urethral orifice or as irregular single or multiple tumefactions situated as regards the vesico-urethral orifice below, laterally, or above. Among the especially grotesque intravesical projections which I have encountered, mention may be made of the case of a negro, in which the lesion consisted of a mass about the shape and size of the terminal third of a banana, which from an attachment behind and to the upper left side of the vesico-urethral orifice extended downward and to the right, so as to lie entirely across the vesical outlet. In another case two projections, one from above and one from below the vesical outlet, each about the size and shape of the terminal half of the forefinger, met and projected backward into the bladder. I make mention thus particularly of the forms taken by prostatic hypertrophy, so that a clear idea may be obtained of just what one has to contend with in striving to accomplish a radical cure of the vesical disabilities which may be dependent on this lesion. I should further state that in very extreme conditions the hypertrophied tissue may equal a pound in weight, though half that weight is to be considered unusually large. Very many instances, however, are represented by from three to five ounces.

Although, as I have said, the general pathology of the senile change in the prostate just described is well recognized, still the diagnosis of that condition is not infrequently wrongly applied to other ailments producing symptoms of obstruction to urination, such as may be caused by prostatic hypertrophy. Thus it is common to encounter instances of seminal vesiculitis wherein such an error has been made. Simple and tuberculous inflammations of the prostate, and the condition which I have described as chronic contraction of the prostatic fibres encircling the vesical neck,[1] are among the other diseases which may in like manner be mistaken. Accordingly, when one hears of the occurrence of a cure of urinary disability, the result of prostatic hypertrophy, taking place either spontaneously or as the apparent result of medication, *régime*, or some non-eliminative surgical procedure, he has a perfect right to distrust the diagnosis.

Prostatic hypertrophy, no matter how extensive, causes the individual affected little or no discomfort or inconvenience, provided it so extends itself as not to interfere with the function of micturition or with vesical drainage. Accordingly, it is only the instances in which urinary obstruction results that demand the surgeon's attention.

As a further preliminary to the real object of this paper, and without which the question of radical treatment cannot be appreciated, the effects produced on the bladder itself by prostatic obstruction must be understandingly discussed. If a hypertrophy, which has hitherto caused little or no obstruction, suddenly from some accidental cause or complication becomes completely obstructive and vesical overdistention and overflow follow, then atony of the otherwise normal vesical walls results. In most instances the obstruction offered by the hypertrophy develops gradually, and to make up for this the vesical walls undergo a condition of compensatory muscular hypertrophy. In most such cases, however, the prostatic obstruction tends eventually, if nature be left unaided, to overbalance the vesical muscular hypertrophy, so that finally the bladder is here also left atonied from overdistention. In some cases of the latter class the bladder does not give up without a severe struggle, the result of which may be to inflict grave damage on the organ in the form of deep sacculi, the walls of all of which are thin, while in connection with some of them there is no muscular structure, their walls consisting only of peritoneum and mucous membrane. In this

[1] Read before the New York Academy of Medicine, November 3, 1898.

[1] American Journal of the Medical Sciences, October, 1897.

last and most serious form of sacculus severe and continuous vesical tenesmus has caused a hernial protrusion of the mucous vesical structure to take place through the muscular meshwork. So great importance has been attached to these conditions of vesical atony that Sir Henry Thompson held, when McGill introduced his operation of suprapubic prostatectomy, that it would be unsatisfactory in all cases in which complete vesical atony previously existed, since, the bladder having no contractile force, natural urination would not be restored, even though the obstruction causing it were removed. In other words, complete vesical atony caused by overdistention was supposed to be a permanent disability. Guyon not only agreed with Thompson, but went further and declared that senile prostatic hypertrophy was not in the least degree a local lesion, but a general one, identical with arteriosclerosis, and that the bladder was involved equally with the prostate. Caspar and others, as the result of much post-mortem research, have disproved Guyon's assertions. My experience shows me that these atonic bladders, if properly managed, recover their tone, and in three personal instances bladders, severely sacculated as well as atonied, have been made to resume their function. In one of these, natural repair occurred in connection with a diverticulum formed by a hernial protrusion of the mucous membrane through the muscular wall. Aside from the vesical lesions produced by prostatic obstruction to urinary drainage, severe instances of the disability cause dilatation of the ureters and their orifices, together with a certain degree of hydronephrosis. These lesions of the upper urinary tract eventually resolve themselves, provided all obstruction to urine drainage be removed. Their presence somewhat increases the gravity of operation for the removal of the prostatic obstruction.

In advocating a radical surgical procedure for the relief of elderly men suffering from prostatic hypertrophy, it has been my experience to expect opposition from the family and friends of the afflicted, and not infrequently from the profession, although the sufferers themselves are generally ready to accept any treatment which bids fair to relieve them, provided they have reached the stage of acute discomfort. In arguing against a resort to radical measures, the opposition lays special stress on the Bible precept, that three score years and ten fulfil the allotted time. Consequently the idea is not perhaps so much to prolong life as it is to make the end as comfortable as possible. Unfortunately, however, there is no palliative method of treatment by which the terminal stage of existence can be freed from great agony in all cases in which relief is no longer to be afforded by the catheter. In fact, in such cases the agonies of death are much the same as a woman would suffer should she be left unaided in childbirth when, owing to some malposition, natural delivery were impossible. The woman, however, would have the advantage of being relieved fairly promptly by death.

The question of the surgical tolerance of elderly individuals is generally and rightly brought up in opposition by the profession in this connection. Every one knows the serious effects that shock and confinement to bed often have on old people. In my radical treatmen of prostatic hypertrophy I have given the greatest weight to this consideration. I feel that every extra minute that a patient is under the anæsthetic counts against him. The instant he is anæsthetized I begin to operate. Generally at the end of fifteen minutes after the commencement of operation the anæsthetic is discontinued, the calculation being that the patient will be fairly out of his anæsthesia with the completion of the operation. I feel that any operator who is slow and dilatory will have a correspondingly large fatality in these cases. Everything should be done to avoid immediate and secondary post-operative shock. The patient should be taken directly from the operating-table to a warm bed, and hypodermic medication applied to aid the heart, in case that organ shows signs of fatigue. Secondary shock can be avoided by arranging at the time of operation for the subsequent comfort of the patient. This can be accomplished by providing free urinary drainage, and also by so arranging the wound that no pain may be caused by the subsequent adjustment of the dressings. In some of my early experiences, for instance, I feel that the pain and suffering attending the removal of vesical tamponage, such as was formerly thought necessary after a suprapubic prostatectomy, was sufficient to cause a fatal termination to what might otherwise have been successful issues. In order to guard against the bad effects of confinement in bed, the chief of which are hypostatic pulmonary congestion and œdema, the patient should never be allowed to lie long in one position. He should be carefully turned from side to side, and at intervals his shoulders should be elevated. At the earliest feasible time he should be lifted from his bed for short periods, once or perhaps twice daily, and placed, with no exertion to himself, on a reclining-chair. If all these details be carried out, the rule is that there will be developed a satisfactory degree of surgical tolerance. The coexistence of general diseased conditions would, of course, have the same weight in the argument against radical operation, with reference to prostatic hypertrophy, as in other connections. I always make a very grave prognosis, and avoid operating, if possible, in cases of arteriosclerosis wherein polyuria and cardiac hypertrophy have delevoped, and also in cases in which the larger surface arteries have the pipe-stem feel characteristic of advanced atheroma.

The pioneer operations on the prostate were performed through the aid of a perineal incision into the bladder. These operations consisted of little else than cutting through the prostatic floor and then subjecting the case to perineal vesical drainage. They were generally unsatisfactory. If the prostate was large, perineal drainage could not, as a rule, be maintained. If the bladder was atonied and became full of blood clot, then again there was trouble. Besides all this the prostatic obstruction often remained after recovery from the operation. A good result followed some of these operations when the prostatic lesion was really one more of chronic contraction of the muscular fibres encircling the vesical neck than of hypertrophy. The next step of advancement lay in attempting to tear away as much as possible of the hypertrophy, by seizing the same in the grasp of forceps introduced through the perineo-vesical incision and then by twisting it free of its attachments. Some hypertrophies admit of this being done more or less imperfectly. Many of them, however, do not. There is always considerable danger of injuring the vesical neck, and also of severe hemorrhage after such attempts. The final result also, although in most instances beneficial, is not perfect. McGill was the first, through the aid of a suprapubic vesical opening, to attack the prostate, with the object of removing the apparent obstruction to urinary drainage. What he did in most instances was to cut a V-shaped trough, connecting the post-prostatic vesical cul-de-sac with the urethral outlet. In doing this he removed a considerable section of bladder wall as well as some hypertrophied prostate. Belfield, recognizing that the deep wound, as made by McGill, especially when vesical infection pre-existed, required freer drainage than the suprapubic incision offered, advocated the making also of a perineal incision for counter drainage. Numerous strikingly good results followed these radical methods.

The objections to prostatectomy so performed are that the cutting through of a trough as described may not, and often does not, remove the real obstruction to vesical drainage, which may consist of a lateral or superior vesical projection or of a bulging mass packed about the prostatic urethra. Then, again, the cutting away of the section of the bladder inflicts needless damage on that organ, may cause an obstructing cicatrix to result, and, besides, makes the operation very bloody and consequently more dangerous. In fact, the hemorrhage subsequent to such an operation was generally so severe as to demand immediate vesical tamponage, a procedure the objection to which I have already mentioned. After this operation, also, the suprapubic wound was left open, necessitating a longer confinement in bed and thus increasing the opportunity for septic absorption.

In the operation which I have devised and which I practise, I have striven to avoid the objections to the McGill-Belfield procedure. I have also taken advantage of the fact that in most instances prostatic hypertrophies are capable of removal through enucleation rather than through cutting. I first described the technique of my operation in a paper entitled "Six Successful and Successive Cases of Prostatectomy,"[1] which I read at the May, 1895, meeting of the American Association of Genito-Urinary Surgeons, in the following words:

"The patient is placed flat on his back, neither the Trendelenburg position nor the Petersen bag being commonly found necessary. The bladder is carefully washed out, and then left moderately distended, to the extent of from eight to twelve ounces. The next step is to open the bladder suprapubically. The forefinger of the left hand is then introduced into the bladder, the location and extent of the prostatic obstruction are determined, and the vesical opening of the urethra is located. In the right hand is grasped a pair of rough, serrated-edged scissors with a long handle. These scissors are slipped along the left forefinger to the urethral opening, and are made to cut through the bladder wall in that region. The cut extends from the lower margin of the internal vesical opening of the urethra backward for an inch to an inch and one-half. The blades of the scissors, being rough and serrated, make an incision which bleeds but little. Then one of the forefingers, whichever the operator may find the more convenient, is slipped through the vesical hole made by the serrated scissors, while at the same time the fist of the other hand makes firm counter-pressure against the perineum. By means of this counter-pressure the prostatic growth is brought well into the reach of the forefinger of the other hand, which is employed all this time in enucleating the prostatic obstruction, *en masse* or piece by piece, as the case may be. The enucleation can be easily and speedily accomplished in this manner, and should not be desisted from until all the lateral and median hypertrophies, as well as all hypertrophies along the line of the prostatic urethra, have been removed. The vesical walls at the base, as elsewhere, are very elastic and dilatable, so that it will be found that the little cut made through the bottom of the bladder will be large enough to admit of the passage through it of the enucleated prostate.

"A perineal section is then made, and a large-sized (No. 26 American) soft-rubber tube is passed through the perineal cut, and the cut through which the prostate was enucleated, into the bladder. After this, hot-water irrigation is employed for some minutes, to wash out blood clot and to stop oozing. Then the suprapubic wound is closed by a deep layer of catgut sutures, which include the bladder wall, and by a more superficial layer of silkworm gut (Florentine) sutures. About in the middle of the cut the catgut stitch is omitted and a deep Florentine-gut suture is taken, which includes the vesical wall and the whole extent of the lateral abdominal wall. This suture, however, is not tied at the time of operation, thus allowing a rubber suprapubic drainage tube to remain temporarily in position. At the end of four or five days this suprapubic drain may in most instances be removed; then this last Florentine ligature can be tied, thus entirely closing the suprapubic cut. It is best not to remove these Florentine sutures till after the patient is up and about, as without their firm support there is oftentimes a tendency for the soft scar tissue of the wound to give, thus allowing a considerable spreading of the abdominal structures.

"I can say of my method of enucleation that by it the prostatic hypertrophy can be easily and thoroughly removed, without damage to the structures composing the vesical neck, and that hemorrhage resulting from it has always been of little consequence. Owing to the slight amount of bleeding, I have always found it feasible to sew up, as I have described, the suprapubic cut, and have never experienced trouble from secondary hemorrhage. The after-treatment consists largely in careful and thorough vesical irrigation, in conjunction with the internal administration of a large amount of diuretic water, in order to keep the kidney secretion free and active. By the adoption of this method I feel that the customary causes of death after prostatectomy can be in large measure avoided."

As this description of method was written three and one-half years ago, I naturally, as the result of much subsequent experience, have some observations and alterations to make. In the first place, I wish to state that some hypertrophies will be encountered which do not admit of enucleation by the finger in the manner described, owing to the abundance and denseness of the fibrous tissue helping to constitute them. In such instances I have found it necessary to introduce prostatectomy forceps through the hole made in the vesical floor, and, after seizing a piece of the hypertrophy, to twist it free. If sufficient tissue is not removed by the first twisting, the instrument should be reintroduced, and so on, till all obstruction has been taken away. On one or two occasions I have encountered tissue so dense and so adherent to the vesical wall that the forceps and the twisting process have seemed dangerous, owing to the force they would necessitate. In such unusual cases the tissue should be cut away, and for that purpose I would recommend Jessop's prostate scissors.[1] I also favor two suprapubic drainage tubes instead of one, following the example set by Guyon in the after-treatment of cases in which vesical growths have been removed suprapubically. In order to save time, and also because I find them unnecessary, I have discarded the layer of catgut sutures and now employ simply the one layer of silkworm gut to close the wound. One of these sutures after passing through all the abdominal layers includes also the bladder wall at the upper portion of the vesical incision, while another one in like manner includes it at the lower portion of the incision. In this manner the vesical is kept up in close apposition to the abdominal wall, so that there may be no escape of extravasated fluid into the space of Retzius. In doing this operation I very rarely tie a blood-vessel, thereby saving considerable time. In order to be able to perform prostatectomy of this description with neatness and dispatch, a surgeon should have good control of his forefinger and be possessed of some strength of wrist and forearm. I am fortunately sufficiently ambidextrous to be able to change hands in difficult cases, thus obviating the necessity of waiting to rest the tired member.

[1] Journal of Cutaneous and Genito-Urinary Diseases. June, 1895.

[1] See British Medical Journal, December 9, 1893.

There is employed at the present time a method of prostatic enucleation different from the one I have just detailed, wherein the hypertrophy is removed through a spacious perineal incision. Von Dittel was the first to show that hypertrophied prostatic tissue could be so removed. He made a transverse dissection between the rectum and urethra, avoiding both these structures, and thus exposed the prostate. Von Dittel's method is not, however, very practical, since there is need of counterpressure to bring the prostatic enlargement well into reach through the perineal incision. To meet this objection Alexander, of this city, and Nicoll, of Glasgow, both independently and nearly simultaneously advocated opening the bladder suprapubically, so that the forefinger of the operator's left hand could be introduced in order to push the hypertrophied tissues requiring elimination down into reach, thus facilitating their perineal removal. By the intravesical feel also the operator could determine whether or not all obstruction had been removed. Nicoll's plan is not to open the vesical floor but lightly to pack the perineal wound and to drain the bladder suprapubically. Alexander, however, advocates perforating the vesical floor for dependent urinary drainage. A patient after Alexander's operation is thus left with suprapubic and perineal vesical drainage as after the method I employ.

In the August, October, and December, 1895, numbers of the New York *Journal of Cutaneous and Genito-Urinary Diseases* is published the controversy that Mr. Nicoll and myself indulged in regarding our operative procedures, and any one specially interested in the subject can perhaps with advantage study it. I think that Alexander's procedure is better than that of Nicoll, in that it provides more completely for vesical drainage and rest. I consider my own preferable to either of them, since it is quicker of accomplishment and less bloody. Consequently it should be attended by less mortality. A spacious perineal dissection, such as is required for the extraction of prostatic hypertrophy, consumes considerable time, and calls for the ligation of numerous large arteries in positions where the placing securely of ligatures is a matter of some difficulty; whereas my perineal puncture for drainage takes but a minute or two, and, as I have said, in the performance of my operation it is rarely necessary to delay to tie a blood-vessel.

In my opinion these operations, the purpose of which is the entire removal of obstruction and the establishment of a long-continued vesical rest, so that the vesical lesions caused by the obstruction can be repaired, are the only ones to which the term radical can be rightly applied. The result to be expected is likewise lasting. The patient should be expected to empty his bladder completely after the act of urination, and he should have a full and forcible stream. This is owing to the from three to five weeks of complete rest which the bladder receives. Besides accomplishing vesical repair, free vesical drainage effects another potent purpose. It allows the surgeon to rid the urinary tract of the chronic infection which so often complicates these cases. The urinary tract can be so thoroughly flushed out, by making the patient drink for a considerable interval very large amounts of diuretic fluids, that germ colonizations are swept away and so eliminated. This cannot be done in obstinate cases without free vesical drainage, owing to the complications which may arise, due to the rapid accumulation of fluid in a bladder robbed of its function.

In looking over my notes I find the records of twenty-seven personal cases of prostatectomy, most of which were subjected to my method. These cases I have divided into two classes: (1) Those in which all the larger surface arteries were felt to be markedly atheromatous; and (2) those in which such changes were absent or not prominently evident. Five of my cases come under the first heading and twenty-two under the second. Out of the five patients of the first class three died after operation. One of them, who was apparently progressing favorably, experienced a severe seizure of cerebral apoplexy on the third day. In another, the post-mortem showed extensive post-operative hemorrhage into the space of Retzius and underneath the peritoneum, occasioned by the calcareous condition of the blood-vessels. The other died suddenly on the fifth day, perhaps of thrombosis. Out of the twenty-two cases of the other class two died—one of suppression and shock and the other of peritoneal symptoms, but of just what nature, in the absence of autopsy, I could not determine. Many of these latter cases were very bad apparent risks. Some of them were operated upon in emergency, it being impossible to relieve the bladder except by aspiration. Most of them were suffering also from the effects of vesical infection, and in a good percentage of these cases the infection had ascended to the renal pelvis. One patient, sixty-seven years old, had a temperature from infection of 104° F. at the time of operation. Another infected patient who recovered and has since married, was a gentleman, seventy years of age, from the vesical mouths of whose ureters, both right and left, I also removed large encysted calculi, which had aided the prostatic obstruction in damaging the upper urinary tract. One patient was in such a bad physical condition when brought in for operation as to cause a confrère to ask, "What is the use of operating on a corpse?" This man left the hospital at the end of five weeks, having gained during his stay ten pounds. His bladder, although one that was sacculated, has recovered its tone completely. Two cases, both earlier ones, passed from my view with suprapubic fistulæ. They were careless individuals from the lower social strata. I do not feel that such an after-lesion need be reckoned upon as at all likely or necessary, provided a patient co-operates with the surgeon. A post-operative inconvenience sometimes complained of and which is usually of temporary duration, is the loss of a drachm or so of urine when there is some vesical pressure as a result of bodily activity. In one instance vesical incontinence persisted after operation, due, I am inclined to think, to chronic sclerous perivesical inflammation. As a result of my experience I would avoid operating on individuals of the first class except for the relief of suffering, since the chance is against their recovery. The value of the operation, with reference to the other class, speaks for itself.

Castration and Bottini's operation I will refer to briefly. I do not condemn either of them. Their simplicity brings them within the professional reach of all. I do not feel, however, that the term radical can justly be applied to them. They do not provide the element of vesical rest so necessary for the repair of a badly damaged bladder. Neither are they applicable in cases of emergency, when the catheter is no longer of service and when delay in the establishment of free vesical drainage means death. I should also consider a resort to either of them very injudicious in cases complicated by calculus or by an ascending infection which has involved one or both renal pelves. The death rate following castration in old men is as large as, if not larger than, that after skilfully performed prostatectomy. The result on the prostate itself, leaving the bladder lesions out of account, is many times negative, generally imperfect, and rarely wholly satisfactory—that is, the patient being so left that he can completely empty his bladder. Although the loss to old men of their testicles is naturally held by most persons, aside from the patients themselves, to be of little or no account, still I cannot refrain from pitying within myself the old men; and as I have never yet

brought myself to the point of arguing strongly with them against their natural wishes not to part with their organs, I have consequently had comparatively little personal experience with castration in this connection.

The Bottini operation, after having lapsed into desuetude without attracting general attention, has recently been brought afresh to notice by Freudenberg, who has considerably modified the original procedure. I have had the pleasure of seeing Freudenberg operate on one occasion and have noted the quite decided improvement which shortly followed. Numerous instances of this operation are now coming to hand. Whether the results in such of them as have been immediately favorable are to be lasting it is impossible to state, since sufficient time has not as yet elapsed. The operation, as has been noted, is applicable, in my opinion, only to the less serious instances of prostatic obstruction wherein the bladder has not as yet suffered grave damage and which are also free from complications relating to the catheter or to the upper urinary tract. Very few, indeed, of the results reported from the modified operation have been radical, in that although an improvement in the urinary function has followed, still residual urine to a greater or less degree has persisted. This, to my mind, makes it probable that a goodly percentage of what at the present time seem fairly satisfactory cases may not continue so. The objections, in my opinion, to the operation are that it inflicts more damage on the neck of the bladder than on the prostate. The deep furrows which it burns through the vesical tissues will, of course, leave dense contracting cicatrices, which will, I fear, eventually cause a marked stenosis at the vesical neck —a very disagreeable state of affairs for the patient as well as for the surgeon. A stenosed vesical neck would of course interfere sadly with the vesical function. If Bottini's operation is unsuccessful, or if a relapse follows, a subsequent prostatectomy will, I expect, be a very difficult and grave matter, owing to the dense cicatrices which will bind down the hypertrophy, and which will so amalgamate the prostate to the adjacent walls of the bladder that serious lacerations of the vesical neck would attend the removal of the obstructing prostatic tissue.

Although it is evident that the burning of three deep furrows—one dependent and two lateral—such as Freudenberg practises, will immediately do away with much of the obstruction to urine drainage in many of these cases, still there are numerous grotesque forms of prostatic obstruction which would not be obliterated by such means. In cases also in which the obstruction is of great bulk—when, for instance, had a radical prostatectomy been performed over half a pound in weight of tissue, or thereabouts, would have been removed—this method of operation would naturally fail. Genito-urinary surgeons whose experience extends over the last ten years have on two occasions been treated to grave disappointment, with respect to the curative value of electricity as applied to the treatment of stricture. On both occasions the most extravagant claims were advanced in its behalf, but these claims did not materialize. Electrolysis, as far as it relates to stricture, has at the present time the sanction of little or no authority. I hope the Bottini operation will fare better than have the kindred methods just mentioned.

In conclusion, I would recommend that the radical treatment for prostatic obstruction be not delayed till the patient is forced to it as a last resort. It is a question which can often be well raised when the vesical function begins to falter and when dependence on the catheter is imminent. It is the question which should always be brought prominently forward when the passage of the catheter ceases to be followed by a fair interval of vesical comfort, and when through vesical lavage urinary decomposition cannot be kept in abeyance. It is the only question to be considered in an emergency when the catheter can no longer be employed.

In my experience there is no class of results the contemplation of which gives me greater pleasure than those following prostatectomy.

THE TECHNICS OF THE OPERATIVE TREATMENT OF INTESTINAL OBSTRUCTION.[1]

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The various conditions for which operations are usually undertaken for the relief of intestinal obstruction may be enumerated as follows: (1) Strangulation of the gut by bands, extensive adhesions, or apertures; (2) volvulus; (3) compression by tumors external to the gut; (4) obstruction due to foreign bodies, such as gall stones and enteroliths; and (5) fæcal masses.

When the patient is suffering from the acute form of obstruction, little time should be lost in making preparations for his relief, once the diagnosis has been established and he has consented to operation; for it is a fact that a very large proportion of all who succumb to operations for intestinal obstruction do so because of the delay which has occurred between the onset of the condition and the time of operation. Hospital patients, who are more under the guidance of the physician, are operated upon more promptly than private patients, and consequently have a far better chance for recovery than the latter. As haste is a prime requisite when our patient is suffering from an acute form of intestinal obstruction, little can be done in the way of preparing the room selected for the operation. A room, preferably with a north light, should be selected; and, if time permits, the carpets, furniture, and hangings should be removed, the room thoroughly cleaned, and the woodwork and floor, after being scrubbed, should be well washed over with mercuric chloride solution, 1 to 500. But, as a rule, in the acuter forms of obstruction there is no time for this careful preparation of the room. When this is the case, all that should be done is to remove all the loose pieces of furniture, care being taken to avoid raising any dust; and sheets wet in either carbolic-acid solution, 1 to 20, or mercuric-chloride solution, 1 to 500, should be placed over the carpet. A kitchen table and one or two smaller tables which have been well scrubbed and washed with a carbolic or mercuric chloride solution are placed in the room, together with several basins and pitchers, which have been thoroughly cleaned and sterilized. While this is in doing, a washboiler should be thoroughly cleaned and filled with water, which should then be sterilized by boiling for an hour. Some of this water should be rapidly cooled by placing it in pitchers and surrounding them with ice water. In extremely urgent cases the hot water may be taken from the ordinary faucet, but this should be avoided when possible. If the case is urgent and the patient is suffering much pain, it is well to defer the preparation of the abdomen until the administration of the anæsthetic. If there has been much vomiting or great abdominal distention, it is wise to follow Kussmaul's method by introducing a tube into the patient's stomach and washing it out. This is easily accomplished if the tube is carried along the roof of the mouth, and as it passes down the œsophagus the patient is instructed to swallow. The stomach is washed out with a quantity of saline or boric-acid

[1] Read before the New York State Medical Association, October 19, 1898.

solution by the siphon method. In this way large quantities of gas will be removed, and also considerable irritating matter.

In cases in which the patient has been vomiting persistently, and is feeble in spite of resort to the ordinary cardiac stimulants, it is well to introduce from one to three pints of saline solution into the circulation, through the veins, prior to beginning the abdominal operation.

The instruments should have been already prepared by boiling for ten minutes in a two-per-cent. solution of carbonate of sodium, and should then be placed in trays containing sterilized water. The towels for use in the operation should be sterilized, either by the use of a sterilizer or by boiling. A large quantity of saline solution (one teaspoonful to the quart) should be on hand.

These preparations having been attended to and the patient anæsthetized, the skin is made ready for the incision by being thoroughly scrubbed with tincture of green soap, special attention being paid to the umbilical region. A solution of peroxide of hydrogen is next applied, after which a lather is made and the skin shaved. The soap is next washed off with water, and

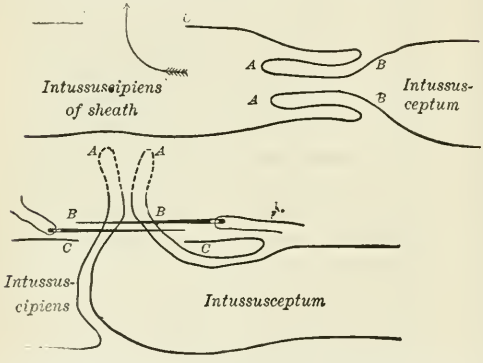


FIG. 1.—Diagram of Longitudinal Section of Intestine, showing an acute irreducible intussusception, and the method of its treatment. *C C*, Longitudinal opening made in the superior border of the intussuscipiens; *A A*, apex of intussusceptum; *B B*, neck of the intussusceptum.

this is followed by an application of equal parts of alcohol and ether to remove the remaining fatty substances. This is, in turn, followed by an alcoholic solution of mercuric chloride, 1 to 500. A final washing is given with sterile water or saline solution. Before the incision is made, the bladder should be emptied by catheter.

When the site of the obstruction cannot be definitely located, the incision should be made a little to the right of the median line, between the umbilicus and pubes, and should be about four inches in length. It should be made through the rectus muscle, because there is less danger of subsequent hernia than when it passes through the linea alba. Such an incision is desirable, as it gives ready access to the cæcum, which should be the first part sought after, and also gives the operator a good command of the small intestine, a large portion of which is usually found in the pelvis. It is also possible through such an incision to make a satisfactory exploration of the colon, and it can be readily extended upward if this should become necessary. It is better to have the incision a little too long than too short, as the longer incision facilitates the manipulations.

When the abdominal cavity has been opened, if greatly distended coils of intestine obstruct the view, the distention should be relieved by aspiration or incision. The incision so made should then be closed by suture, and the spots disinfected by the application of a few drops of hydrogen dioxide. As has been previously stated, the hand should be introduced into the abdominal cavity and an effort made to locate the cæcum. If the latter is found to be much distended, it is good evidence that the obstruction is located in the colon; but if, on the other hand, it is empty or only moderately filled, then it is most probable that the stoppage is in the small gut. If there is reason to believe that the obstruction is in the colon, the hand should be passed over the entire length of this intestine until the obstruction is found. It is presumed that the rectum has been explored prior to operation. When the small bowel is involved, it is well, if possible, to seek the collapsed portion and follow it down to the obstruction. The operator should begin by looking for the non-distended coils in the region of the cæcum or about the brim of the pelvis, as advised by Mr. Hulke. The various hernial orifices should also be examined. Sometimes two forms of obstruction coexist, and it should be borne in mind that one of them is often overlooked.

If the obstruction proves to have been due to bands, the latter should be ligated on both sides near their attachment, which is usually the mesentery, and removed. When the gut is found to be gangrenous, it must be resected in the manner to be hereinafter described. If the obstruction is due to a diverticulum or to an adherent appendix, these portions of the bowel should be removed in the ordinary manner, and the opening in the gut closed with Lembert sutures. While volvulus usually occurs in the sigmoid flexure, it may occur in the small intestine, and in the latter case it is usually necessary to draw the intestine out of the abdominal cavity. It is the writer's experience that, contrary to the usual authorities, this does no harm, provided the exposed bowel is properly protected with gauze or soft towels wrung out of hot saline solution. The following case illustrates well this point:

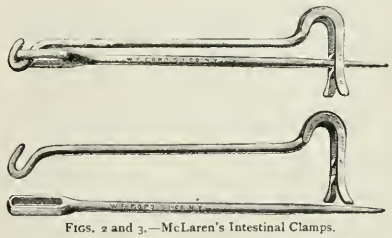
J. K——, forty-five years of age, married, and a native of Ireland, was admitted to Ward 11, Bellevue Hospital, on October 1, 1898. For about a year previously he had suffered more or less from colicky pains in the abdomen, but they had yielded readily to household remedies. Eight days prior to admission, while working in the fields, he was taken suddenly with a chill and a feeling of dizziness. He had been troubled for several days prior to this with obstinate constipation. He went home and summoned a physician, who blistered his abdomen, and tried, but without success, to move the bowels by cathartics and enemata. All this time the man was suffering from nausea and vomiting and complete loss of appetite, and there was pain which he referred to the right side and umbilical region. His physician, being unable to give him relief, advised him to go to the hospital for treatment. On admission, temperature, 99.8° F.; pulse, 108; respirations, 22. Physical examination showed the patient's face to be pale and drawn; the abdomen was considerably distended, and the right rectus muscle seemed rigid. The whole abdomen was tender to the touch, but especially so over the umbilical region. The lower part of the abdomen was blistered and raw. There was no dulness on percussion, and no tumor discoverable on palpation. An enema consisting of two quarts of saline solution was administered, with a fair result. At this time the patient was supposed to be suffering from a catarrhal appendicitis. Temperature, 100° F.; pulse, 60; respirations, 20. On October 3d it was noted that he was suffering from much pain, and an ice bag was applied to the inguinal region. Temperature then, 100.2° F.; pulse, 94; respirations, 20. On October 4th his condition was about the same,

and calomel was administered, without result. It was recorded on October 6th that the patient felt much more comfortable in the morning, but by 6:30 P.M. the colicky pains recurred, and these were followed by an intense, steady pain, referred to a point just above the umbilicus. A saline enema was administered by the house surgeon, with fair result, but it did not relieve the pain; so he then administered morphine hypodermically. Notwithstanding this treatment, the pain continued to increase in severity, and, the general condition of the patient becoming worse, he was stimulated with strychnine and nitroglycerin. About 11 P.M. the patient was seen by the writer and by Dr. Joseph B. Bissell. It was decided that he was suffering from acute intestinal obstruction, and that an operation was immediately demanded. Ether was administered at once, and the field of operation was prepared as already described. An incision was made, about three inches in length, through the right rectus muscle. The cæcum was located, and the appendix was found to be normal. A systematic examination of both large and small intestine was next made, and, as no bands could be felt, the collapsed bowel, which began at the cæcum, was withdrawn. On following it up to the upper portion of the ileum, a point was found where the gut was twisted upon itself and apparently constricted. Above this point the intestine was distended. Several small bands were found passing over the intestine, and these were broken up. During the examination the portion of intestine withdrawn was kept warm and moist by being wrapped up in towels wet with warm sterilized saline solution. Before being returned to the cavity the intestine was washed off with hot sterilized saline solution, and then, the patient having been turned slightly on one side, the bowel was returned to the abdominal cavity, partially by the aid of gravity. The general peritoneal cavity was next irrigated with hot sterilized saline solution, at a temperature of 110° F., and a quantity of it was allowed to remain. The abdominal wound was closed by layers, as the muscular tissue was very deficient. The wound was sealed with ten-per-cent. iodoform collodion and cotton, without drainage. The patient rested well during the night, and exhibited no shock. On the following day it was recorded that, with the exception of slight abdominal pain, he felt well. The bowels moved spontaneously on that day. His further convalescence was uneventful, and the wound healed by primary union.

In those cases in which the obstruction is found at the time of operation to be an intussusception, the best method for reducing the invaginated portion of the bowel seems to be that wherein the tumor is encircled below its apex by the finger and thumb, while the intussuscipiens or sheath is held a few inches lower down, the apex of the tumor being pushed in an upward direction. Traction from above the tumor should not be employed. If, however, the tumor prove to be irreducible, it is the writer's belief that the method described by the late Prof. H. Widenham Maunsell (see Fig. 1) is the best yet devised for treating this most unfortunate complication caused by delay. A slit is made in the intussuscipiens, and gentle traction is exerted on the intussusceptum until its neck appears outside the opening in the intussuscipiens. The base is then transfixed with two straight needles armed with horsehair, and the intussusceptum is amputated one-fourth of an inch above the needles, leaving a fair stump beyond them. The sutures are now passed through the invaginated bowel, caught up in the interior of the bowel, divided, and tied. This having been accomplished, the invagination is reduced and the longitudinal slit is closed.

When the obstruction is due to a neoplasm, the latter should generally be removed. Intestinal surgery has improved so much of late years that these growths can usually be excised, and when this can be done it is better to do so by the method to be described than to perform colotomy. When, however, it is deemed inadvisable to resect the portion of bowel containing the growth, the colon should be opened by the operation described by Nydls. An incision, four inches long, is made over the portion of colon to be opened, and in the direction of the fibres of the external oblique muscle. When the peritoneal cavity is opened, the bowel is drawn upward until its mesenteric attachment is on a level with the external incision. A slit is then made in the mesentery, and a glass rod is passed through and iodoform gauze wound around the ends of the rod. The rod is left in position until adhesions have formed; then the gut is opened. If the fistula is to be a permanent one, the divided edge of the upper portion of intestine is attached to the borders of the skin, and the edges of the lower end are inverted and closed by suture, after which the segment of gut may be returned to the peritoneal cavity. If, on the other hand, the fistula is to be a temporary one, an opening is simply made in the bowel.

When the intestinal obstruction is due to a neoplasm external to the gut, the new growth should be



Figs. 2 and 3.—McLaren's Intestinal Clamps.

removed, if possible; when it is not possible, a fæcal fistula must be established above the point of obstruction. Fortunately, at the present time there are few intra-abdominal neoplasms that cannot be successfully removed, provided the patient is not moribund when the operation is begun.

When the obstruction is due to gall stones or enteroliths, these bodies should be pushed above or below the point where they are found, and then removed through an incision, rather than an opening made at the point where they have been lodged, as at the latter place the gut is likely to be damaged and is not so likely to heal promptly. The opening left in the gut after their removal is to be closed with Lembert sutures. If, however, the foreign body cannot be easily dislodged, the portion of gut containing it should be excised and an end-to-end anastomosis effected in the manner hereinafter to be described.

When the obstruction is dependent upon fæcal masses, these should be removed. This can best be done by the employment of small doses of calomel and soda, accompanied with the use of saline enemas. The enema is best given with the patient lying on the left side, a fountain syringe being used for the purpose, but its reservoir should not be elevated more than three feet above the patient's body. A bulb syringe should not be used for this purpose, for, in the first place, it injects the fluid irregularly and with too much force, and consequently only a small quantity can be employed; and, in the second place, it is apt, with careless use, to admit air to the bowel. The fluid for the enema should have a temperature of 100° F., and should be introduced into the canal slowly, being frequently intermitted as the patient complains of a feeling of distention or of intestinal colic. It should be continued if both of these sensations cease. The patient should be encouraged to retain the fluid as

long as possible, as the object of the enema is to allow the absorption of the water and the softening of the mass, rather than the stimulation of peristalsis. The first effort frequently fails to bring away more than a little fæcal matter, but the latter has commonly a foul odor in cases in which the fæcal accumulation has lasted for some time. After several hours have

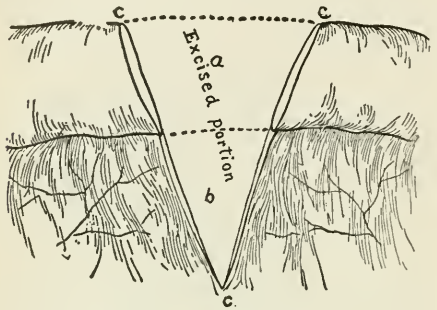


Fig. 4.—*a b*, Portion of intestine and mesentery to be removed; *b b*, mesentery; *c c c*, lines of the incision.

elapsed, it is well to repeat this procedure, as the non-irritating character of the fluid usually causes little discomfort.

In a case in which the writer was called with a view to operating for intestinal obstruction, the statement was made that ordinary cathartics and enemas had failed to produce any result. The patient was vomiting, and had been unable to retain nourishment for some days. On examination of the abdomen, no special point of tenderness could be found, but there was dulness over the entire length of the colon. Permission was given to the writer to supervise the administration of a saline enema. This was given in the manner just described. Two quarts were administered, and were retained for about three-quarters of an hour. When this finally escaped, a few small particles of fæcal matter came away with it, and these had a very foul odor, indicating long retention in the gut. A few hours afterward a similar enema was given, and this was repeated on the following morning, small doses of calomel having been administered meanwhile. The third enema was followed by a copious movement, and the patient then made an uneventful recovery.

When the gut is gangrenous or in a doubtful condition, it is wise, as already stated, to remove it. An end-to-end anastomosis should be effected with the Murphy button, or, preferably, by some form of suture, such as the method suggested by the late Prof. H. Widenham Maunsell, or the writer's modification of it. The original method of Maunsell was fully described by the writer, in a paper entitled "The Technique of Maunsell's Method of Intestinal Anastomosis," which was read before this association on October 17, 1895, and published in the *New York Medical Journal* for December 14, 1895. In the writer's simplification of the operation, which consists in eliminating the invagination and the slit, the steps are as follows: The portion of intestine to be excised having been located, it is brought outside the cavity, accompanied by about six inches of healthy intestine on either side. It is next emptied of its contents above and below the diseased spot, by passing it between the finger and thumb and gently pressing it. The empty gut should be clamped on either side of the diseased portion of bowel at a point six inches distant, to prevent the escape of fæcal matter at the time of excision or during the subsequent manipulation. A useful instrument for this purpose is the McLaren clamp (see Figs. 2 and 3). The general peritoneal cavity should be protected with flat sterilized sponges wrung out of hot saline solution. The portion of intestine to be removed is excised by means of a V-shaped incision, having its apex in the mesentery and its lateral borders on either side of the diseased area (see Fig. 4). The mesenteric vessels are ligated before being cut, by passing a needle armed with catgut around them and tying them. The wound in the mesentery is closed by means of a continuous or an interrupted suture (see Fig. 5). After the divided ends of the intestine have been carefully washed with hot saline solution, followed by a small quantity of a fifteen-volume solution of hydrogen dioxide, the proximal and the distal ends are united by means of two sutures which are passed through all the intestinal coats. The first suture is placed at the inferior or mesenteric border, and is passed in such a manner as to include a portion of mesentery on both sides (as shown in Fig. 6). It is then tied in the bowel and the ends are cut short. The second is placed directly opposite, at the highest point of the superior border, and temporarily secured with a clamp. On either side, and half way between the upper and lower, the third and fourth sutures are passed in a similar way, and clamped. The other sutures are passed in the same way, the needle going from within the gut and piercing all the coats, then back through the peritoneal, muscular, and mucous coats to the interior of the other segment of bowel. The ends are then tied in the bowel. This process is continued with all the sutures, with the exception of the last one or two. Here the Lembert suture is substituted. If the sutures have been properly introduced, about one-fourth of an inch from the edge, and tied sufficiently tight, it will be found that the peritoneum is turned in and the stitches are no longer visible (see Fig. 7). If some of them have been so loosely tied that the sutures are visible in the peritoneal coat, it is best to insert a few Lembert sutures at these points. Before closing the last one or two sutures, it is well to introduce into the gut one or two ounces of a saturated solution of the sulphate of magnesium, to insure the early action of the bowels. The sutured portion of bowel should now be washed with a small quantity of a fifteen-volume solution of hydrogen dioxide, then washed with saline solution, and returned into the abdominal cavity, which should also be washed with saline solution before the abdominal wound is closed.

Usually one row of silkworm-gut sutures is passed through all the coats, from the skin to the peritoneum. These deep sutures should be inserted about one inch apart, and should be loosely tied, to allow for swelling, which ordinarily takes place as soon as the patient rallies from the operation. The edges of the skin are approximated, either by a continuous catgut suture or

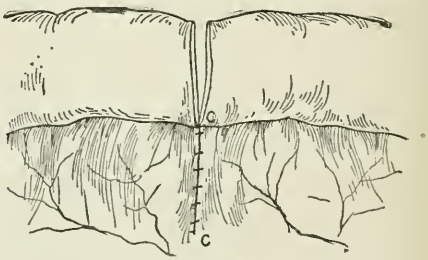


Fig. 5.—*c c*, Incision in mesentery united by continuous suture.

by a subcutaneous suture. After the wound is closed, it is well to use the hydrogen dioxide and follow it with ether or alcohol, for the purpose of drying the skin. The wound is then sealed with a ten-per-cent. solution of iodoform in ether, and a little cotton, after which the usual gauze dressings are applied.

For some time past it has been the writer's opinion

that the chief point of value in the Maunsell method lies in its demonstration of the fact that sutures can be passed through all the coats of the bowel with impunity, and that the invagination and the slit are unnecessary. The following case is illustrative of this point:

L. M——, eighteen years of age, was admitted to Ward 12, Bellevue Hospital, as the writer's private patient, August 2, 1898. She was suffering from bi-

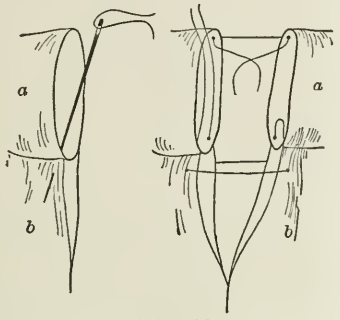


FIG. 6.—*a a*, Segments of bowel; *b-b*, segments of mesentery.

lateral pyosalpinx. On August 4th, after the usual preparations, the abdominal cavity was opened by means of an incision, two and one-half inches long, in the left rectus muscle. The intestine was found to be adherent about the fundus of the uterus and the tubes. These adhesions were separated, and the tubes exposed. As both tubes and ovaries were diseased, the uterus was removed, being amputated just above the internal os. After this had been done, the appendix was examined and found to be inflamed and injured; so it was removed. Further examination of the bowel showed that the peritoneal coat covering a large proportion of the circumference of two and one-half inches of the ileum had been torn in separating the adhesions. An attempt was made to close the peritoneum by means of Lembert sutures, but it was found dangerously to narrow the calibre of the gut. It was therefore thought best to resect the injured portion of bowel. This was done, and the sutures were inserted in the manner already described. Two ounces of a saturated solution of sulphate of magnesium was thrown into the bowel just before final closure. A small rent in the peritoneal coat some distance above the resected portion was closed with a Lembert suture. After the bowel was washed with hydrogen dioxide and saline solution, it was dropped back and the abdominal wound closed as previously described. The operation was a long one, yet only nine ounces of ether was employed. Before the patient regained consciousness, a tube was passed into the stomach and the latter washed out, and one pint of decinormal saline solution left there. She reacted well, and was completely conscious in two hours. On August 5th the patient felt well, and the bowels moved three times. She had not vomited since the operation, and took eight ounces of peptonized milk every four hours. On the morning of August 6th the temperature was 99.8° F., pulse 104; in the evening, temperature 100.8° F., pulse, 104. On the following day the temperature was 98.8° F. and pulse 76 to 96. At this time it was reported that there were no gastric or intestinal symptoms. On August 8th, the fourth day after operation, her temperature and pulse became normal, and her further convalescence was uneventful. The ordinary light solid diet was allowed on the eighth day, and the wound was found to have healed by primary union. The bowels were moving regularly.

The operation having been completed and the dressings applied, the patient should be returned to bed and placed directly within the folds of a blanket and surrounded, if necessary, with hot-water bags or bottles. Care should be taken that they be not overheated, and so blister the still unconscious patient. When a quantity of saline solution has been allowed to remain in the abdominal cavity, the patient generally leaves the operating-table in good condition, and with a warm, moist skin. When the pulse is weak and rapid, it is well to raise the foot of the bed; and when consciousness has been fully regained, to administer one-eighth grain of morphine and one one-hundredth grain of atropine subcutaneously, to quiet the patient. After this one dose, the use of morphine should be discontinued, as it deranges the digestive system and obscures the various symptoms. It is not necessary that the dorsal position should be maintained for several days, as is usually taught, as the nurse can turn him safely from time to time. During the first twelve or eighteen hours following the performance of the operation, nothing should be allowed by the mouth except a little warm water from time to time. If the demand for fluid is urgent, it can be usually successfully combated by two or three large doses of subnitrate of bismuth. During these early hours of convalescence nourishment and stimulants, if needed, should be administered by means of enemas. With the passing of these first twelve or eighteen hours, if there is no nausea or vomiting, and the pulse is about the same as before the operation, a drachm of liquid peptonoids or some other similar preparation may be given, and repeated, if well borne, every twenty minutes until four doses have been taken, when, after an interval of two hours, a small quantity of equal parts of milk and lime water, or of peptonized milk, may be given from time to time until four ounces have been taken. After this there should be an interval of two hours, and then half an ounce of liquid peptonoids may be administered. After another interval of two hours, four ounces of peptonized milk may be given. The quantity of milk should be gradually increased and the interval lengthened until the patient takes eight ounces, or its equivalent in soup, every three hours; but once during the night the interval should be lengthened to six. The general tendency is to give too small quantities of nourishment at too frequent intervals, which fatigues the stomach and is apt to cause irritability of this organ and engender a disgust for food. During the interval, if the patient desires more liquid, egg albumen and water (the whites of

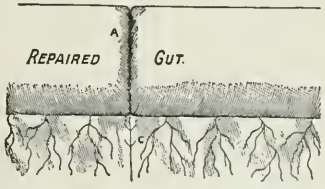


FIG. 7.—This figure shows the intestine after the completion of the anastomosis. *A*, line marking the point of union between the ends of the bowel, showing that the peritoneal coat is well turned in, and that the sutures and knots are all inside the gut.

three eggs to a pint of water, to which a little salt has been added) may be allowed freely.

During the first forty-eight hours after operation, if the patient is disturbed by reason of intestinal gas, great relief is often afforded by the introduction through the sphincter of a short rectal tube. On the third or fourth day, one-tenth grain of calomel and one grain of soda may be given every half hour for five hours, or until the bowels act. If they do not act, however, within three hours after all the calomel has been taken, a Seidlitz powder should be administered, and repeated after another interval of three hours. After the bow-

els have acted, the pulse rate should be normal, in which case the patient may be rapidly allowed to resume ordinary diet.

The dressings should be removed on the fifth day, and if the sutures are beginning to cut the tissues they should be removed and the wound supported with strips of adhesive plaster; otherwise they should be allowed to remain a few days longer. Before the sutures are removed, the wound and its surroundings should be thoroughly cleansed. The suture is then picked up on one side by means of a pair of forceps, and the skin at the angle is depressed by the flat surface of a pair of scissors, the blades of which straddle the strand of gut, which is then cut through. The object of this manœuvre is to cut the portion of suture which has been buried in the tissue, and which is therefore clean, so that in dragging the silkworm gut through the tissues and the peritoneal cavity danger of infection will be reduced to a minimum. The patient should remain in bed about eighteen days, and may then be allowed to sit up, and soon thereafter to walk about and resume his ordinary occupation.

In closing, the writer wishes again to call attention to the fact that the prognosis in operations for the conditions which have been considered in this paper depends more largely upon whether or not the operation is performed early or late in the disease than upon any other factor.

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FIVE WEEKS' EXPERIENCE AT BAD NAUHEIM.[1]

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So voluminous has the literature of Nauheim become, especially in England and this country, during the past few years, that I have hesitated to add to it; but it has seemed to me that perhaps a brief account of a personal experience there might be interesting to the society, and I have therefore determined to ask your attention to the subject for a few minutes. I make no pretence of having prepared an exhaustive or elaborate paper; but when I tell you that the most exhaustive and elaborate criticism of Nauheim has been written by men who simply devoted a few hours to the place—stopped over a train, or a night—you will perhaps be surprised that as a result of five weeks' residence there I can do no more. I submit that a time has come in Nauheim's history when it should be taken seriously or not at all.

The place is accessible from all parts of Europe, being less than twenty miles north of Frankfort, on the main line between Frankfort and Hamburg. For Americans who wish to go directly there, the route via Hamburg will probably be more convenient than that via Bremen, for this latter reason.

It has seemed to me that Nauheim has suffered in two ways in its literature: at the hands of its advocates, who claim too much for it, and at the hands of its critics, who often without sufficient investigation indulge in *a-priori* condemnation of it. It was in order to ascertain for myself if possible what its merits really are that I undertook last spring to spend some weeks in its investigation. Accordingly I went there about the middle of May, and remained until after the middle of June.

Professors Heineman and Schott extended to me every facility for my investigations, and were most kind, not only in affording me access to all the many baths and other public places which interested me, but also in placing at my disposal a large clinical material, consisting of their private patients. It was a source of much surprise to me to learn how willingly these ladies and gentlemen lent themselves to my uses when they knew that I was in search of information which they could convey, either by their histories or by allowing physical examination.

The heart cases which seem to be especially benefited by Nauheim are of several kinds. They include those in which with valvular lesion compensation is slow in being established; those in which compensation, having existed, has failed, with the result of the production of all the symptoms of failure of the muscular power of the heart; those in which with or without physical signs angina pectoris has developed as a symptom, and again many forms of cardiac neurosis (other than angina), which may be due to such a great variety of causes.

Much has been said and written about the immediate effect of the Nauheim treatment upon a dilated heart; much acrimonious discussion is possible as to the accuracy of physical examination in determining slight changes in a heart's size and position. All of this appears to me so unnecessary that I was somewhat surprised to see that most of the many doctors who go to Nauheim as I did seem to think it of chief importance to examine a large number of patients before and after the baths and exercises, in order to see for themselves what changes take place in the heart, if any, as the immediate effect of therapeutic procedures. These are points of interest without doubt; but it was to others that I chiefly addressed myself. Before leaving this part of the subject, I may say that I convinced myself that the apex beat does change in position after the baths and exercises, and that the pulse often becomes slower, fuller, softer, and more regular in patients in whom deviation from the normal existed in these respects.

I am permitted by Professor Schott to refer to photographic work of his with the *x*-rays, which he intended to publish this fall as being convincing ocular demonstration of changes in size and shape and position of dilated hearts, as an immediate effect of baths and also of exercises. Professor Heineman, too, has accumulated much material of this kind, which shows the same thing, and he, too, was most helpful to me in assisting me to look up this part of the subject, as he was in regard to every other detail of Nauheim life, therapeutic and otherwise.

This change in size, when it is observable, seems to be chiefly a reduction in size of dilated right-heart chambers. I am not inclined to insist upon this as peculiar to Nauheim methods or as necessarily characteristic of them, or even as of much importance. Careful observations, according to Sansom, have shown that the bulk of the heart may greatly change under varying conditions within very short periods of time. Broadbent admits a diminution of the volume of the heart under the influence of these baths and exercises, but adds that such changes in size of the heart are common under other methods of treatment and from various causes.

As I have said, other matters were to me of greater interest than these: to me it is of small moment what may take place in the dimensions of a heart temporarily as the immediate effect of a therapeutic procedure, if the patient does not improve as a remote consequence of it all. And, conversely, if the patient does get steadily and permanently better under any therapeutic procedure, it matters but very little what the intermediate, transitional steps in the process of improvement may be. They certainly are not worth quarrelling about.

What interested me more at Nauheim, after a careful study of all the methods of treatment in vogue and

[1] Read at a meeting of the Practitioners' Society, October 14, 1898.

a prolonged trial of the effects of these methods upon myself, was to talk with Nauheim patients, chiefly patients from England, and ascertain exactly what their histories had been, how they had suffered and how long, what their ante-Nauheim condition had been, how they had borne the somewhat fatiguing treatment, and what changes in their symptoms had been obvious to them in what I may call their post-Nauheim condition. I was enabled by the kindness of these gentlemen whom I have named to pursue this as well as other branches of the subject to the fullest possible extent, and I came away quite satisfied that it is certainly very common for all the classes of heart invalids which I have named to be materially relieved by the treatment applied. Especially was I impressed with cases of angina, and the great and lasting relief that they derive there. If these cases were few, one would have to think of the possibility of coincidence as explaining them; but they are far too numerous to eliminate the relation of cause and effect. It is not claimed that one single course of treatment, extending over five or six weeks, is sufficient to bring a permanent relief of symptoms—although this occasionally happens; but many of these heart invalids, whose symptoms under usual circumstances are so difficult to cope with, are enabled to lead active lives of usefulness and happiness by an annual resort to Nauheim for four or five weeks. This is much. It is certainly more than our usual therapeutic means can accomplish. There must, of course, be a shadow side to the picture—there must, of course, be failures in these grave cases at Nauheim; and it is only fair to say that such an investigation as mine is not likely to disclose them.

Subacute rheumatism is greatly benefited here, as it is at warm springs in general; and one sees many sufferers from cerebral and spinal paralyses, as to whose improvement there seems to be much less available evidence than there is in the heart cases. Pelvic and abdominal exudations of plastic character, after they are fully organized, seem to yield to the Nauheim methods; but whether there is anything specific in the Nauheim treatment of these maladies, whether they would not be as well influenced by warm baths and massage elsewhere, may perhaps be open to question.

So many descriptions of Nauheim routine have been published that I have concluded not to ask you to listen to my account of it. I shall merely summarize it by saying that treatment is in part dietetic; that the physical part of it consists chiefly of massage, baths in the local water, as well as in this water from which the natural carbonic acid has been allowed to escape, very gentle exercises against resistance which is applied by a trained attendant, together with a period of rest of at least one hour's duration after each bath and each exercise. One is allowed to walk and drive, but not to incur fatigue or excitement, and is urged to live well, but not to eat heartily at any one meal. Coffee is replaced by tea, strong alcoholics are forbidden, and tobacco is kept within narrow limits.

As to exact details of treatment, there seems to be no consensus of opinion among the Nauheim physicians. One will order more frequent baths than another, or baths of longer duration. All agree that one must not bathe every day, but whether the days of rest shall be one, two, or three a week, seems to be a matter of individual preference among the local doctors. Thus the duration of baths varies from four to fifteen minutes, according to different advisers. Much the same discrepancy exists as to duration of exercises.

It would seem to be possible to apply this treatment anywhere to a very satisfactory extent. Heineman, who has tried it, thinks that fully seventy per cent. of the benefit may be thus imparted away from Nauheim by careful attention to details. The salts of the Nauheim waters, obtained by evaporation, can be imported in bulk and dissolved in ordinary water in proper proportion to imitate the natural water; and carbonic acid can be dissolved previously in the water, under pressure, so that the two varieties of baths upon which dependence is chiefly placed can thus be artificially prepared. The exercises can, of course, be equally well done anywhere, with trained attendants.

The best results are seen among the well-to-do, who can afford to give themselves up wholly to the treatment during the few weeks of its application; but they must have sufficient intelligence never to overtax their hearts at any time by overexercise or overindulgence in any way.

That Nauheim methods are not to be carelessly applied, and are potent for evil if too persistently used, admits of no doubt. During the treatment one often feels quite prostrated by it; and the method in general, as well as the duration of the individual baths and exercises, must be carefully adapted to suit the needs and the strength of each patient. Too vigorous a course of treatment, baths too frequently administered or of too long duration, can easily produce quite alarming degrees of prostration; and under circumstances, which occasionally may arise, of weakness induced by other causes—such, for instance, as an attack of diarrhœa or bronchitis—the treatment should be wholly suspended.

Nauheim will not accomplish miracles, but I am convinced that its power in heart cases justifies us in giving it very serious consideration. It is certainly a great deal to be able to relieve distressing and even dangerous symptoms, and to enable people to work who have been led to believe that their days of usefulness were over, as it is also to enable those who are working with undue fatigue and weariness to accomplish their daily tasks with less effort or even with pleasure.

PRIMARY FOCAL HÆMATOMYELIA FROM TRAUMATISM—A FREQUENT BUT OFTEN UNRECOGNIZED FORM OF SPINAL-CORD INJURY.[1]

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It is the object of this paper to call attention to a variety of spinal-cord injury which often passes unidentified, although few clinical conditions are more clearly cut than it. It arises from a definite kind of injury; its symptoms differ in association and evolution from those of the commoner traumatisms of the spinal cord. That its prognosis is in general good, is alone sufficient to render it conspicuous among affections of this class. The best designation for the condition seems to me to be primary focal hæmatomyelia from traumatism. The word primary indicates that the bleeding originates from force exerted directly upon the spinal cord, without the intervention of a fracture of the spine. Primary traumatic hæmatomyelia is thus differentiated from the hemorrhages which frequently complicate crushes of the spinal cord and which should be called secondary. In the primary variety demonstrable lesions of the bones to help explain the symptoms are absent, and the hemorrhage accordingly constitutes the chief lesion, being uncomplicated by the general mutilation of the cord, which is unavoidable when pressure is exerted upon it from the outside, as is the case when protecting structures are broken down. The rest of the name proposed for this variety of injury explains itself. Focal, in contradistinction to disseminated, indicates that the hemorrhage is localized; hæmatomyelia, that it is into the substance of the spinal cord; the factor of traumatism is mentioned

[1] Read by invitation before the Johns Hopkins Hospital Medical Society, November 7, 1898.

in order to avoid any possible confusion with idiopathic hæmatomyelia.

Thorburn[1] was the first to call general attention to the frequency and importance of traumatic hæmatomyelia. Valuable as his observations were, and are, they were incomplete. To Minor,[2] of Moscow, is due the credit of having pointed out that the character of the sensory symptoms was the one pathognomonic sign upon which the diagnosis rested. Minor was at first obliged to base his deductions upon clinical observations alone. Within the past two years the correctness of his views has been authenticated by post-mortem testimony, and it has become possible by combining autopsy findings and careful clinical histories to arrive at definite knowledge concerning the causation, pathological anatomy, symptoms, and prognosis of primary traumatic hemorrhage within the spinal cord.

It is incumbent upon any one who proposes an addition to existing terminology or who attempts to reclassify well-recognized conditions to state his reasons for so doing. My apology is this: In Minor's first descriptions, under the title of "Central Hæmatomyelia," of the dissociated anæsthesia observed after certain injuries of the cervical region, and in the subsequent observations by others, it is stated that the ordinary surgical symptoms of fracture or dislocation were absent. Of the various clinical histories accessible to me, I can recall no one in which the pure type of dissociated anæsthesia—*i.e.*, tactile sensibility absolutely normal; sensibility to temperature or pain, or to both, lost—existed together with such surgical symptoms. The presumption from these clinical data that dissociated anæsthesia resulting from traumatisms of the neck does not, as a rule at least, accompany fractures, is borne out by the evidence of operations and autopsies, when the condition of the vertebræ is accurately ascertained. On the other hand, autopsy records are now available which prove that properly exerted force can bring about a central hemorrhage in the cervical region, with a resulting dissociated anæsthesia, without there being any traces of injury to the vertebræ. These facts seem to indicate that traumatic central hæmatomyelia causing anæsthesia of characteristic selective type results most frequently, if not always, from some kind of violence other than the ordinary compression through displacement of some of the component parts of the spine. This does not imply that the same force which acts directly upon the spinal cord may not, at the same time, cause some injury to the column, although experience indicates that such is not often the case; nor is it possible to assert positively that compression from without cannot, under any circumstances, cause the symptoms of a pure central affection, although there is little if any proof that it does so. Even when due allowance is made for these possibilities of confusion, there is abundant evidence that pure central hæmatomyelia from traumatism is most frequently primary, and sufficient reason, as it seems to me, for this class of cases to be considered, for the present, at least, under the proposed designation.

Frequency.—This affection is certainly more frequent than is generally recognized. It receives brief if any mention in text-books on surgery. Yet of twenty-one cases of spinal-cord traumatisms examined by Thorburn, six were interpreted as examples of hæmatomyelia. In none of these were evidences of fracture present during life; in the only fatal case the column was found after death to be intact. Of seven fatal cases examined by Parkin[3] the column was normal in one. Of Stolper's[4] twenty-two autopsies on various spinal-cord injuries, two were examples of primary focal hæmatomyelia.

But the percentage of primary cases, as shown by autopsy, is by no means expressive of their relative frequency, because this is the form of injury to the spinal cord in which recovery occurs most often. Neither are we as yet in a position to determine the frequency from clinical reports, because it is only recently that attention has been directed to the most important diagnostic sign, *i.e.*, dissociated anæsthesia. When search for this symptom becomes part of the routine examination in surgical wards, we may expect to hear more of primary focal hæmatomyelia from traumatism.

Pathological Anatomy.—As implied by the definition, the vertebral column is not injured, or, at least, not in a way to affect the spinal cord. The most prominent feature in the spinal cord is hemorrhage. With it there must be associated a certain amount of primary laceration of the centrally situated nerve fibres. Primary laceration when slight is, however, extremely difficult to identify under the microscope, and we are obliged to rely on the hemorrhage as the index of the violence the cord has undergone. But, reasoning from the clinical side, from the temporary character of many of the symptoms, the inference is unavoidable that laceration, in most cases at least, is not an important element of the lesion.

Knowledge of the disposition of the blood in primary focal hæmatomyelia from traumatism is derived from autopsies on patients who have died of this particular lesion, and, by analogy, from hemorrhagic conditions of different characters in the spinal cord, and by experiment. The hemorrhage is poured out first, and most profusely, in the gray matter. This central limitation of the hemorrhage is often so sharply defined that upon section of the affected segment or segments, when the hemorrhage is profuse, the configuration of the whole gray matter is distinctly marked in red. The total occupation of the gray matter by blood cells, even in severe cases, is usually confined to one or two segments, at the focus of greatest injury. Above and below, the blood decreases in amount, so that parts of the gray matter, especially the gray commissure, are entirely free from it. But if serial transverse sections are made up and down the cord, it can be seen that there have been extensions of the blood in pencils or columns, either upward or downward, or in both directions, from the place of the most extensive hemorrhage. These columnar extensions proceed through two, three, or even four or more segments, in one or both directions. They are not equal in length, one penetrating for a longer distance than the other. In my experience the longest extension is usually the one which goes upward. The seat of the extension is almost always in the gray matter, usually in the anterior or posterior horn, on one side of the cord only; the extension above the seat of the most extensive hemorrhage is usually opposite to the one below. When the original hemorrhage is profuse, it may escape, at the focus of greatest injury, beyond the limits of the gray matter and infiltrate the white columns. This occurs in the form of one large clot, occupying a greater part of the circumference of the cord, or as smaller collections of punctate extravasations. Similarly, though much less frequently with the columnar extensions, they may not be confined to the gray matter, but extend laterally beyond it. When this occurs, it does so most frequently into the white matter just behind the middle commissure. As to the situation in respect from trauma to the long axis of the cord, primary focal hemorrhage has never been demonstrated except in the lower cervical and upper thoracic regions. It is probable, however, that it may occur in the conus medullaris.

The evolution of the lesion is as yet somewhat ob-

[1] "A Contribution to the Surgery of the Spinal Cord," Philadelphia.

[2] Neurolog. Centralblatt, 1890, 1892, 1895. Arch. für Psych., xxiv., p. 693; xxviii. [3] Guy's Hospital Reports, 1891, p. 107.

[4] Monatssch. für Unfallheilk., February 15, 1898.

scure. The blood degenerates and forms a viscous fluid. If life is prolonged, the natural tendency of this fluid is toward absorption, so that a cavity is left in the parts of the cord which it had occupied. Lax and Müller[1] have recorded a case in which such a cavity was found three years after the accident. In a case to be cited in this paper the cavity had been in large part filled up by new connective tissue. We may therefore deduce that cavity formation is a constant sequel to hæmatomyelia, unless death follows the injury almost immediately, and that the cavity may remain patent or be replaced by new tissue. The extent of damage sustained by the spinal cord is proportionate to the amount of the bleeding. If this latter is excessive, it may burst into the white matter and bring about as disastrous consequences as though the cord had been crushed from the outside, the symptoms then being those of a general lesion. In most cases, however, the hemorrhage remains confined to the gray matter, the symptoms are selective, and the resulting degenerations are not pronounced.

Etiology.—With the exception of pistol-shot wounds primary focal hæmatomyelia results almost exclusively, when the exact cause can be ascertained, from sudden forced flexions or extensions of the neck.[2] As examples may be cited falls on the head, the dropping of heavy weights on the head, or, as occurred in three personally observed cases, by diving into shallow water. Thorburn explained the mechanism of the lesion's production by a momentary dislocation of the cervical vertebræ. In view of the already stated fact, that the symptoms in these cases differ materially from such as are seen when fracture or dislocation can be proved, and that in the autopsies there were absolutely no traces of any change of position in the vertebræ, this theory is hardly satisfactory. I believe that the hemorrhage occurs not from external compression but from a rupture of one or more of the blood-vessels of the central gray matter, brought about by the stretching of the cord during the forced flexion or extension of the neck.

Symptoms.—As neither fracture nor dislocation belongs to primary focal hæmatomyelia, but little need be said as to these conditions. There may be œdema, subcutaneous extravasations, stiffness, pain, etc., in the neck, the results of the sudden and excessive strain to which the cervical vertebræ and superimposed structures have been subjected; but crepitus, false motion, or pathological irregularities in the vertebral spines are conspicuous by their absence. The symptoms directly referable to the spinal cord, as they are the results of an internal and generally circumscribed injury, differ from those of crushes of the cord in which both white and gray matter are commonly implicated. If the hemorrhage is so extensive that it bursts beyond the gray matter and involves the cord, either directly or by pressure in its whole cross-section, the clinical evidences of paralysis, anæsthesia, etc., would be identical with those of a transverse lesion. When, however, as is usually the case, the hemorrhage exceeds the gray confines but little or not at all, the clinical picture has a distinct individuality, of which the most salient features are an initial motor paralysis which soon becomes modified, and anæsthesia for temperature or pain, or both, without impairment of the sense of touch. The motor and sensory symptoms deserve particular mention.

Motor Paralysis.—The paralysis of voluntary motion, with few exceptions, ensues instantly upon receipt of the injury. The muscles involved at the level of the injury (since the hemorrhage is most constant in the lower cervical region) are those of the forearm and hand, and sometimes of the upper arm; those below, of the lower extremities. The paralysis of the upper extremities has a different anatomical basis from that of the lower. The first is due to the blood being poured directly into the spinal nuclei of the brachial nerves, thus constituting a destructive lesion. From such a condition perfect recovery is improbable, and, in fact, most of the patients remain permanently paralyzed, though the paralysis may be very limited, in some of the muscles of the upper extremity. The parlaysis of the legs, on the other hand, is the result of conditions often permitting recovery. The most feasible explanation of this paralysis, from which recovery may be expected, is that the hemorrhage, although occupying the central portions of the cord, exerts sufficient pressure, or is followed by œdema sufficient to compress for a time the pyramidal tracts which lie a little distance from it, and which are carrying the long cerebral fibres destined for the muscle nuclei situated at lower levels. When the hemorrhage ceases, the commotion it has caused in its vicinity subsides and the pyramidal fibres are permitted to resume their wonted function. The distribution of the paralysis varies with the situation and extent of the hemorrhage. If below the first thoracic segment, an unusual situation, the arms escape. If above the second thoracic segment, the paralysis affects the muscles whose nuclei are below the upper limit of the hemorrhage. If the hemorrhage is very small and on one side of the cord only, the paralysis may affect one arm chiefly or only; if larger, but still confined to one side, there is spinal hemiplegia. In the following case the final picture was slight atrophic paralysis of both arms and spastic weakness in one leg:[1]

Case I.—A young man, upon diving into shallow water and striking the bottom with his head, instantly lost power in arms and legs. When examined two years later, much of the paralysis had disappeared, there being left an atrophic weakness of the small muscles of both hands and a spastic paresis of the left leg. There were no signs of fractured vertebræ. The patient could use both hands fairly well and walked easily, though with a limp. The patient stated that he had never lost the sense of touch; it is probable that thermo-anæsthesia existed originally, but there were no traces of it at this late examination. In this case there was undoubtedly a bilateral hemorrhage in the nuclei of the first thoracic segment of the spinal cord, which had also pressed on the left pyramidal tract.

In a large number of cases the hemorrhage is sufficient to cause at first paralysis of both arms and of both legs. When the patient is seen immediately after the accident, the paralysis is flaccid in character. The muscles are soft and yielding, without rigidity, and the paraplegia is complete. The knee jerks are diminished or lost. (This does not indicate a transverse lesion, as is often maintained.) When the lesion is very small, the knee jerks may be hypertypical or exaggerated at once. In the lower extremities the paralysis soon undergoes a change, and from being flaccid, it becomes spastic. The knee jerks, if they were diminished or lost, return and become exaggerated, and ankle clonus is added.

With the establishment of the spasticity strength returns to the legs. Some patients are able to walk a few weeks after being completely paraplegic. The recovery in the legs comes sooner than that in the arms; in the arms it is also less perfect than in the legs, there usually being left a permanent atrophic paralysis in some of the brachial muscles.

[1] Deut. Zeit. für Nerv., 1898, xii., 304.

[2] For a discussion of central hemorrhage caused by pistol-shot wounds, the reader is referred to an excellent paper by Cushing, American Journal of the Medical Sciences, June, 1898. This particular class of injuries will not be considered in the present article.

[1] This case has been fully described by me in "Accident and Injury: Their Relation to Diseases of the Nervous System." New York. D. Appleton & Co., 1898.

Of these muscles the most frequently affected are the small ones of the thumb and the interossei. Thus a patient recovering from this affection may present a picture very similar to that of progressive muscular atrophy (amyotrophic lateral sclerosis), viz., a paralysis of the upper extremities of the peripheral neuron type, with atrophy, fibrillation, and degenerative electrical reactions, and of the lower extremities of central neuron type, with rigidity, increased knee jerks, and ankle clonus.

When distinctive sensory symptoms are added to those of progressive muscular atrophy, the picture changes to that of syringomyelia, and, as has often been emphasized, primary focal hæmatomyelia from trauma has many things in common with syringomyelia. There is little chance, however, of confusing the traumatic affection with either of these chronic and insidious diseases.

Sensory Symptoms.—From the study of syringomyelia, a disease affecting primarily the central gray matter, and having for its most distinctive clinical

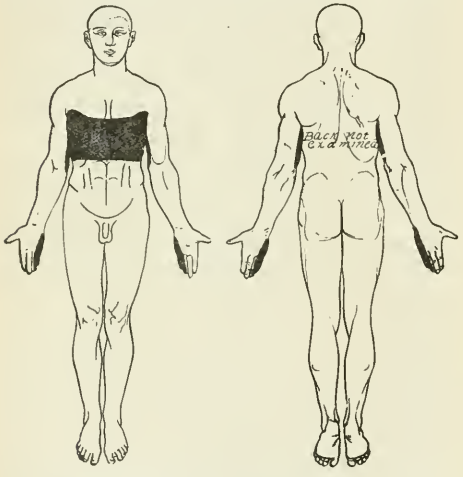

Fig. 1.—Loss of Temperature Sense in a Case of Primary Focal Hæmatomyelia from Traumatism (Case II., verified by autopsy).

manifestation a dissociated anæsthesia, the gray matter of the spinal cord has come to be regarded as intimately connected with the passage brainwards of the sensations of temperature and of pain; and it is further probable that, whatever may be the paths for the sensations of touch, they are not in the gray matter. We expect, therefore, that in all cases, whether chronic or acute, in which the lesion is confined to the structures surrounding the central canal, the ability to recognize thermic and painful stimuli will be impaired or lost, while tactile sensibility remains normal. Such is the condition in primary focal hæmatomyelia, except in the few cases in which the blood clot is so extensive that it causes the total anæsthesia of a transverse lesion. The hemorrhage may be of considerable size without doing so, however, as is illustrated by the following case:

Case II.—A man, twenty-five years of age, dived into shallow water and became immediately paralyzed in both arms and legs. Retention of urine; incontinence of fæces. Two weeks afterward he was brought to St. Luke's Hospital, to the service of Dr. B. Farquhar Curtis, at whose request I saw him. The paralysis in the legs was almost complete. In the upper extremities it involved the interossei especially, although the flexors and extensors of the wrist were very weak. Tactile and pain sensibility was normal everywhere; but thermo-anæsthesia existed below the nipples on the trunk, on the legs, and on the inner sides of the arms. Later the thermo-anæsthesia disappeared from the legs altogether; the distribution, as shown in the cut (Fig. 1), was permanent. The knee jerks were absent for a few weeks and then returned and became exaggerated and associated with foot clonus. The man improved considerably, but was troubled with bedsores and cystitis and died after a few months, with the symptoms of septicæmia. At the autopsy the vertebral column and canal were found intact, but the central portions of the spinal cord were almost totally destroyed in the eighth cervical and first thoracic segments, and partially so in the seventh cervical. The destruction had also encroached considerably on the white matter. Microscopical examination showed that the lesion was hemorrhagic in origin. The holes left by the blood were in large part filled up by new tissue. Thus in this case, although the hemorrhage exceeded the gray confines and was sufficiently extensive to lead to death, tactile sensibility remained perfectly normal.

The clinical characters of the impairment of cutaneous sensibility in primary focal hæmatomyelia vary. The chief characteristic is that while sensibility to touch is not affected, there exists thermo-anæsthesia or analgesia, or both together. The distribution of these disturbances is in general the same as that for the total anæsthesia of transverse lesions. The Brown-Séquard type is often seen, viz., a motor paralysis of one arm and leg, with loss of pain sense and temperature sense in the arm and leg of the opposite side. The degree of thermo-anæsthesia and analgesia is not constant. As a rule, analgesia is the less of the two; in recovery also, it is the first to improve or disappear. From personal experience I can speak only of the loss of temperature sense. That has generally been, for the first few weeks after the accident, complete, so that the patients were not only unable to distinguish between heat and cold, but felt no discomfort from contact with the test tube of boiling water, although other kinds of painful stimuli were appreciated at their true value. When the symptom was incomplete at first, or when time had permitted it to become so, it appeared as delayed perception. The tendency of these affections of the pain and temperature sense is toward improvement and sometimes recovery is perfect.

Of the other symptoms referable to the sphere of sensation, pain is most prominent. Some cases run an entirely painless course; in others, pain, both spontaneous and on motion, is referred to the site of the lesion. The sharp lancinating pains down the arms or legs, the so-called irritative root symptoms, are not prominent in pure central traumatic hæmatomyelia; neither are numbness, tingling, or other forms of paræsthesias frequent. The patient may say that he felt such perverted sensations for a short time after the accident, but that they were temporary; he most frequently states that he "feels everything," being ignorant of the fact that he cannot tell heat from cold, or recognize either one of them. As the hemorrhages are in the vicinity of the centres of the cilio-spinal reflex, pupillary phenomena are constant. If the amount of blood on the two sides is equal, the degree of myosis on both sides is equal. More frequently, however, the myosis, like the paralysis, is more pronounced on one side. Other evidences of lesion of the cilio-spinal centres are less frequently mentioned.

The other symptoms which sometimes occur in primary focal hæmatomyelia may be dismissed with brief mention. Thus retention of urine, incontinence of fæces, bedsores, priapism, œdema, cyanosis of the extremities, distention of the abdomen, chills and fever, all have been observed. These are the general symptoms of any traumatism of the spinal cord, and one or all of them may be present in the special affec-

tion under discussion. In it, however, they are generally characterized by short duration and by one or more of them being absent. Thus, the incontinence of fæces may stop in a day or two; control of the bladder is usually slower in returning, but it generally does return. Bedsores do not occur in mild cases.

Diagnosis.—The nature of the accident, the extent and character of the initial palsy, the sphincter defects, the absence of external signs of bone lesion, may all be the same in other kinds of spinal-cord injuries as in primary focal hæmatomyelia. The chief distinguishing guide, immediately after the accident at least, is to be sought in the sphere of sensation. When the other symptoms are in accord with an acute injury, and when there is anæsthesia for pain or temperature, in characteristic areas, without any impairment of the sense of touch, the diagnosis can be made, I think, without hesitancy. The fact that such a dissociation of sensation occurs in other spinal-cord affections, in certain forms of neuritis, or even in hysteria, can hardly cause confusion to any one who looks at the case from every point of view. The chief difficulties to certainty of diagnosis will be met in cases in which the hemorrhage is very small and in those in which it is very large. In the first category it seems entirely possible that a hemorrhage, if confined to the anterior horns, would cause no sensory symptoms, and few or no symptoms of general commotion, and the diagnosis would therefore have to be made from the paralysis and wasting of one upper extremity. Similarly, if the hemorrhage were in a posterior horn, the resulting sensory defect might easily be overlooked. In an autopsy made on a man who died from rupture of the viscera ten days after a severe general traumatism, I found a small hemorrhage (no vertebral fracture) which occupied about one-fifth of the area of one anterior horn of the first thoracic segment of one side. The man had no symptoms pointing to a destructive lesion in the nervous system, and the fact that his other injuries were complicated by primary hæmatomyelia became apparent only after death. In contrast to these minute lesions are the extensive ones, which lead quickly to death. It is entirely possible for a large central hemorrhage to have the same effect, by pressure or by actual destruction; to cause symptoms, both motor and sensory, identical with those of general crushes. It seems, however, that such cases are unusual; that the fibres for sensibility here as elsewhere are much more resistant to pressure effects than are those of motion. Between these two extremes are the most frequent cases of primary focal hæmatomyelia, which, in addition to the sensory symptom complex, have other characteristics of their own. Among these may be mentioned the strong tendency toward improvement of muscular power, more rapid in the legs than in the arms; frequent unilateral distribution; the comparatively quick return of sphincter control and the general absence of bedsores.

Prognosis.—That this class of cases merits careful observation and record is shown by the favorable course which they so frequently follow. To call good the prognosis of any injury to so vital a structure as the spinal cord, may seem exaggerative. Yet, compared with secondary injuries, the prognosis of primary focal hæmatomyelia is extremely favorable.

That recovery is the rule is shown by the infrequency of autopsy records compared with the large number of clinically reported cases.

To cite instances bearing on prognosis: In Case I., after complete paraplegia, the patient recovered the use of the arms and hands for everything except the finest movements, and could walk easily, though he dragged one leg somewhat. A patient of Thorburn's, paralyzed in legs and arms on December 19th, was discharged on January 16th, "cured, except for some feebleness of the grasp."

Barling[1] reports the case of a man who fell about ten feet, striking on the head and neck. The right upper extremity was almost completely paralyzed and there was general weakness in the right lower extremity. Analgesia in the right leg was the only sensory symptom. There was no evidence of fracture of the spine. In six months the patient resumed his occupation as a fireman on an engine, and "was as well able to do his work as before the accident."

A patient of Minor's, injured on July 6th, walked on the September 5th following, and left the hospital on September 8th. Another patient of the same physician, totally paraplegic at first, could stand alone seven days after the accident. To these citations may be added two personally observed cases.

Case III.—On or about June 20, 1898, a strong man fell thirty feet through a hatchway and was instantly paralyzed in both legs. He was taken to the Hudson Street Hospital, in the service of Dr. P. R. Bolton. Symptoms: Arms unaffected in any way; complete

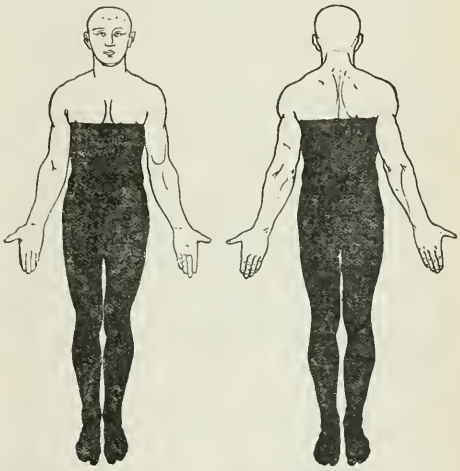

Fig. 2.—Loss of Temperature Sense in a Case of Primary Focal Hæmatomyelia from Traumatism (Case III.).

motor paraplegia of legs, with retention of urine; diminution (almost extinction) of both knee jerks. Sensibility to touch and pain were normal, but a pronounced thermo-anæsthesia was present below the nipples (Fig. 2). No bedsores. Recovery was very rapid. The retention of urine disappeared in ten days and in six weeks the patient could walk unsupported. On August 23, 1898, the patient walked to my office with Dr. A. Michaelis, when the following notes were made: The man now walks easily and without a marked limp, although the right leg is stiff. All movements of the lower extremities are performed quickly and with good force. Both knee jerks have now become exaggerated and there is also double ankle clonus. Thermo-anæsthesia has in large part disappeared, though traces of it are still present in the legs, especially the left. At the first examination the vertebral column appeared normal. At this second examination there was a kyphosis in the upper dorsal region. The patient had secured a place as night watchman, and said he could perform his duties without fatigue. Thus in two months from the receipt of the injury this man had recovered from a complete motor paraplegia with bladder paralysis, and had again become a bread winner.

[1] Birmingham Medical Review, 1893, xxxiv., p. 149.

Case IV.—A healthy man on July 5, 1898, struck his head on the bottom in diving, and became paralyzed in all four extremities. He would have drowned had not his friends pulled him out of the water. At the request of Dr. G. B. Crary I saw him at Roosevelt Hospital on July 18th. His condition had already improved greatly, but for several days after the accident he had been unable to move hand or foot, to pass his water, or to control his bowels.

At the time of my examination sphincter control had already returned, there had been no bedsores, and the patient, though still bedridden, could move both legs and the right arm freely but feebly. In the right upper extremity complete paralysis of the deltoid, of the triceps, and of all the muscles of the forearm remained. The knee jerk was absent on the right side and much diminished on the left. The right pupil was smaller than the left. The only objective anomaly of sensibility was a slight thermo-anæsthesia in the left upper extremity. The spinal column appeared normal. Within four weeks of the receipt of this injury the patient could get around on his legs. Seen again on August 20, 1898, he had regained so much power in the legs that he could walk with ease, without cane or crutches and without noticeable defect, although the legs were somewhat stiff and not so strong as they had been before the accident. He had, however, walked up four flights of stairs, without assistance. Recovery in the left hand had kept pace with that of the lower extremities, but the right hand and arm, though much better, still showed signs of serious involvement. Any movement with them the patient could make, but all the muscles of this member were unmistakably feeble, as shown in the grip, in movements of the fingers, etc. There was a marked atrophy also of the thenar eminence. The patient said that he had, with difficulty, been able to sign his name, but that for practical purposes the right hand was of little service to him. Both knee jerks were now exaggerated and there was a foot clonus on the right side. He complained at this examination, as he had done at the previous one, of pain in the back of the neck. The pain was dull, not particularly increased by movement, and never very severe. These were the only symptoms left in a patient who, forty-six days before, had been unable to move hand or foot, to control his bowels, or to empty his bladder. The disturbances in the perception of thermal sensation had vanished, the restoration of rectal and vesical function was complete, and the man was nearly ready to resume his occupation.

These cases show how complete recovery may be in primary focal hæmatomyelia from trauma, even when the initial symptoms are of alarming character. The prognosis as to life and as to restoration of function is directly proportional to the extent of the hemorrhage. With this latter excessive, tearing and lacerating the cervical cord in nearly total cross-section, the patient usually dies in a few hours or a few days. These are the cases most frequently seen at autopsy. When, on the other hand, the amount of the hemorrhage is small, the degree of possible recovery, as shown in the above-cited cases, is truly astonishing.

Immediately after the accident, it may be extremely difficult to determine the extent of actual injury undergone by the cord. As shown by Case II., the destruction may involve the white matter considerably and the clinical type of central affection still be preserved. But whenever the symptoms remain sufficiently selective to make the diagnosis of primary focal hæmatomyelia possible, the immediate inference is justifiable that the outlook is more favorable than for any other variety of traumatism of like initial severity in the cervical region. More light as to prognosis is shed in the few days following the accident. The early restoration of sphincter control, the quick return of voluntary motor power in some muscles, the absence of the tendency to bedsores, all speak for a favorable termination eventually. It is as yet rather early to speculate as to the ultimate fate of patients who have suffered a primary traumatic hemorrhage in the cervicothoracic cord. Destructive lesions in the brachial nuclei are of course irreparable. Even the legs, in which the recovery is most perfect, are left stiff, and will probably always be weaker than before the accident. It would also be at variance with the general principles of nervous pathology if, after such accidents, the patients themselves were not more irritable and restless, less capable of exertion, less tolerant of fatigue, and less resistant to disease-inducing agents.

Treatment.—After having emphasized the contraindication of all operative interference, there is no occasion to speak of treatment in this paper. It is by no means intended to imply that treatment is unimportant; on the contrary, skilful management of these patients may condition recovery. But the treatment itself is not different in its principles from that of other spinal-cord injuries, and can be found fully described in text-books on surgery.

This paper is a preliminary and consequently much condensed communication from an essay on traumatic hæmatomyelia and other varieties of injury to the spinal cord, in course of preparation by Dr. P. R. Bolton and the writer.

4 West Fiftieth Street.

Progress of Medical Science.

Multiple Abscess of the Liver is another recognized result of dysentery, though I rather think the statement has been exaggerated and more universally accepted than the facts warrant.—John Anderson.

Subjective Dyspnœa a Symptom of Dry Catarrh of the Nasal, Pharyngeal, or Laryngeal Mucous Membrane.—Dr. M. Sänger (*Münch. med. Wochenschrift*, No. 15, 1898) calls attention to a very common yet heretofore overlooked symptom in rhinitis, pharyngitis, and laryngitis sicca—namely, subjective dyspnœa. The patients complain of shortness of breath and of a feeling that they do not receive a sufficient quantity of air during inspiration, with a sense of obstruction in the nose or throat. This subjective dyspnœa is relieved by curing the dryness of the respiratory mucous membrane. The writer attributes this symptom to a diminished sensibility of the terminal filaments of the nerves not permitting a correct conception of the amount of air inspired, and also to the diminished moisture.

Paralysis of the Arm Due to Decayed Teeth.—In the *Münchener medicinische Wochenschrift*, No. 29, 1898, Dr. Mühl Kühner, a surgical dentist of Landen (Pfalz), reports the case of a young woman, twenty-four years old, who for two and one-half years was affected with paralysis of the right arm and right side of the neck. This was supposed to have been the result of a fall, in which her arm was fractured, but appropriate treatment failed to improve the condition. She visited Dr. Mühl Kühner to have her teeth attended to. Several of the teeth were filled, and one, the third upper molar (wisdom tooth) of the right side, was extracted on account of deep-seated caries. The next day the patient returned to inform the doctor that her palsy had disappeared and she was happy in the full and free movement of the previously affected parts. A similar case is reported in the *Correspondenz-Blätter für Zahnärzte* of April, 1898.

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THE QUESTION OF CONSULTATIONS.

IN all walks of life, but particularly in the practice of medicine, consultation with one more versed in his art or supposed to be endowed with a greater practical knowledge of the conditions in question forms a prominent feature of present-day practices. The day has passed in medicine when the patient or his immediate relations and friends feel that the sole care of a severe illness should be left to the discretion and judgment of a single man. If matters are not progressing favorably—even though nothing which would conduce to the best interests and well being of the patient is left undone—they are apt to reason that two heads are better than one, not only because they contain four eyes, but because one may perhaps possess the necessary something which the other lacks. At the present day the tendency is rather to overdo the matter of consultations, and many physicians are forced to submit to them, even perhaps against their will. The slightest unfavorable turn in the course of the disease often seems sufficient ground for the friends to suggest a consultation, all the more so if the attending physician is a young man. It appears almost an impossibility to eradicate from the minds of some people the idea that youth is a crime; the presence of the tinge of gray seems to be requisite for the peace of mind of certain patients and their friends. Yet there are times when even the veteran in practice has to submit to the inevitable, and meet in consultation perhaps a younger confrère at the request of the family. The various reasons for holding consultations are given in Dr. Robert Gersuny's recent book, "Doctor and Patient: Hints to Both": "Various reasons may induce patient or friends to wish for a consultation: (1) A general anxiety to leave nothing undone. (2) An impression that the doctor in attendance shows uncertainty. (3) The protracted length of the illness. (4) The fact that somebody has recommended a certain doctor, and consequently his opinion is desired. (5) The belief that they owe it to their social position and wealth. On the other hand, the attendant doctor demands it because: (1) He will not bear the sole responsibility of a certain case, and wishes to avoid subsequent reproaches. (2) He supposes that his colleague with whom he wishes to consult has a greater special experience than his own. (3) He feels uneasy, and therefore wishes for support from a brother practitioner. (4) He divines the wishes of the patient and his friends, and is glad to meet them half way."

Thus we see that no physician should feel in any wise slighted when a consultation is proposed, provided the consultant named be his professional equal or superior. It is wrong and unjust to one's self, as well as to the patient, to object to a consultation because one "does not believe in it." On the other hand, it is neither wise nor dignified to foster in the minds of patients a constant desire for consultations. Dr. Gersuny states that "in some districts there is a regular mania for consultations. A family doctor is employed by patients only when they are in health; in case of sickness a specialist is at once called in, and sometimes more than one, according to circumstances. The family doctor is reduced to the level of a sort of master of ceremonies, and the patient has the disadvantage of being attended by doctors who see him for the first time."

Moderation in consultations, as in everything else, would seem to be proper, avoiding exaggerated enthusiasm on the one hand and scepticism on the other. It is a safe rule to take the initiative and call for a consultation, when in your judgment an indication for one has arisen, or to acquiesce in such call when those nearest and dearest to the patient deem it desirable to have the opinion of a second man. If it does not prove true in the case in hand that "in multitude of counsel there is wisdom," there will at least be the satisfaction of knowing that an effort was made to give the subject of the conference every chance.

PROFESSOR KOCH'S INVESTIGATIONS IN SOUTH AFRICA.

THE paper read by Dr. Koch, giving the results of his researches in South Africa, would appear on the whole to have occasioned great umbrage to those British medical men who have practised in tropical countries and who have had experience in the treatment of the diseases incidental to the torrid zone. Many of the English journals, both lay and medical, are especially irate at his pronouncement that black-water fever is caused by quinine. This angry feeling is stated not to be caused by professional jealousy, or by any other kind of envy, hatred, or uncharitableness, but simply because the professor has made an assertion calculated, it is claimed, to do infinite harm, without having first sufficiently studied the subject on which he delivers so dogmatic an opinion. The *Indian Medical Gazette*, commenting in a leading article on Professor Koch's statement of views, says: "Had he, distinguished investigator as he is, spent the whole of his life in studying malaria, he would hardly have been entitled to speak with so much authority as he assumes, and certainly only with regard to his experiences in the places he visited." Again, the same journal, referring to black-water fever, says: "Dr. Koch's tendency to jump at conclusions on insufficient evidence as so far published is well shown in his assertion that 'black-water fever' is merely quinine poisoning. Apparently

because he never found the malarial parasite in such cases, therefore they are not malarial." A London lay journal, the well-known *Saturday Review*, harping on the same string, and in its usual scathing and biting language, speaks as follows: "No living doctor has a more world-wide renown than Robert Koch. His early work on the bacillus of tuberculosis secured him a well-deserved reputation in his profession, for that research proved him to be a master of accurate methods of investigation, patient in their employment, and cautious in his deductions. Men predicted that the young Koch was the coming Pasteur—a forecast, alas! that has not been fulfilled. In 1884 cholera broke out in Egypt, and Koch was sent there to study the disease. The telegraph soon spread the news through Europe that Koch had found the cholera bacillus. Bacteriological experts have not accepted this discovery as valid. Klein offered to swallow as much 'cholera bacillus' as Koch chose to prepare. But the expert criticism did not reach the public or lessen Koch's fame. Six years later the world was startled by the pleasing announcement that Koch had discovered a certain cure for consumption. Kaiser Wilhelm and the daily press proclaimed Koch one of the world's greatest benefactors. The subsequent demonstrations that the discovery was a mare's nest, and that the famous tuberculin did more harm than good to the unlucky invalids into whom it was injected, could no more lower Koch's popular prestige than it could deprive him of the high honor and rich rewards which a grateful world had showered upon him. Unwarned by these failures, Koch has not returned to the cautious scientific methods of his early manhood. His reports on his recent researches on various tropical diseases are marred by the careless blunders, reckless haste, and dishonest plagiarism which have previously ruined his scientific reputation. It is not, however, with Koch's reputation that we are here concerned, but with the new danger he has added to life in tropical Africa."

The writer then describes black-water fever, sketches the investigations made and the theories advanced as to its origin by various observers, and remarks that Koch, after studying sixteen cases in the hospital at Dar-es-Salaam, in which he noticed the usual action of quinine in patients suffering from black-water fever, revived the already discredited theory of quinine poisoning and dogmatically asserts it as a now incontrovertible fact. The article ends with this sentence: "The victims of tuberculin may be reckoned by the scores, but Koch's advocacy of the view that black-water fever is quinine poisoning will probably kill its hundreds as well as strike the deathblow to a scientific reputation once of the highest promise."

From the medical men of South Africa has gone forth a unanimous and bitter protest against the acceptance of Koch's deductions, and they predict that the most disastrous results must follow the public expression of his opinions; in fact, it is stated that already in Africa persons suffering from malaria and black-water fever refuse to take quinine, arguing that, if Koch says that it is harmful to do so, they have excellent reasons for their refusal. The quinine-poisoning theory of black-water fever was originally started by Tomaselli, of Catania, who studied the disease in Sicily and Sardinia, and it has been discussed and observed by several others; but it is now almost universally renounced. Dr. W. Sambon, of Naples, certainly one of the greatest authorities on malaria and hæmoglobinuria, and who has spent many years in investigating these diseases, says in reference to the latter that he neither believes that it is an unusually severe paroxysm of the ordinary malaria fever, as held by some, nor does he think that it is a peculiar condition caused by the administration of quinine, the view taken by others; but is of the opinion that it is very closely related to the paroxysmal hæmoglobinuria of temperate regions.

We—while thinking that perhaps Professor Koch would have been better advised had he kept his theory to himself until he had absolutely proved its truth beyond a doubt—still hail the present discussion with a considerable amount of pleasure, for it will act as a spur to those scientific men who are interested in the matter and will undoubtedly tend more quickly to bring about the solution of the origin of one of the most deadly maladies which infest tropical regions, and thus in the end prove a blessing in disguise. Whether Koch, Manson, Ross, or Sambon is the fortunate man is an affair of little moment; they are, after all, but units—the end in view is the benefit of mankind at large.

A WHOLESOME VERDICT.

THE educated and conscientious physician must have read with considerable satisfaction the verdict of the English coroner in the inquest into the death of a well-known writer of fiction, under the ignorant and brutal ministrations of two misguided females calling themselves Christian scientists. The verdict of manslaughter in this case, though perhaps severe on the two women, will undoubtedly have a restraining influence upon other weak-minded specimens who would like to follow in the path of their ridiculous tenets; though we are very likely to hear a wail about "martyrdom" and "persecution" from some unimportant sources. A suitable punishment ought to be inflicted in this case, so that in future those who would like to employ Christian-science methods will be more circumspect in choosing their cases, and will confine their imaginary therapeutics to imaginary diseases. They will be on safer ground. We believe that in this country Christian scientists, "mind-healers," and "faith curers" are about the same in their hypotheses and methods, though we understand that among them there are disputes. However, it is a matter of easy and absolute demonstration that their claims and statements are absurd and dangerous, and it ought to be possible to protect the ignorant and credulous against their own folly. There is never any public objection to quarantining against yellow fever, and it ought to be possible to have a sort of quarantine against "Christian science" and such, for those who are too ignorant to protect themselves. Several attempts have been made in this country to stop this sort of thing, but unfortunately the success has not been very great. A certain por-

tion of the public at least, we fear, really likes to be humbugged, as our late illustrious Barnum often told us. However, we shall continue to have faith in time and education.

News of the Week.

Virchow's Versatility. — The German Anthropological Congress, held in the late summer at Brunswick, was presided over by Professor Virchow. "The Great Problems of the Stone Age" formed the subject of his opening address, in the course of which he pointed to the importance of the latest discoveries in Egypt. Professor Ranke, who gave the yearly scientific report of the society, ended by praising Virchow as the master of research.

A Case of Medical Charity.—An unexpected illustration of dispensary abuse occurred at the City Hospital Dispensary in Baltimore, when a man who had just applied for free treatment, on the plea that he was unable to pay a physician, dropped dead, and in his pocket was found $1,500 in notes.—*Maryland Medical Journal.*

The Meyer Memorial at Copenhagen.—The monument erected by an international subscription in honor of Dr. Hans Wilhelm Meyer, the discoverer of adenoid growths, was unveiled in Copenhagen on October 25th. It is a bronze bust of heroic size, standing upon a granite base, in the Gefion Square in East Copenhagen. It is the work of the Danish artists, Bissen and Runeberg. The memorial was handed over to the authorities of Copenhagen by Sir Felix Semon, who delivered an address in which he pointed out the importance of Meyer's discovery. It had, he said, saved many thousands from deafness and would save many thousands more in the future. He described Meyer as one of the greatest benefactors to mankind that the profession of medicine had ever known.

"Recent Experiences in Military Surgery after the Battle of Santiago."—The *Journal of the American Medical Association* of November 12th publishes an article with the above title, suppressing the name of the author, which article is lifted bodily from the MEDICAL RECORD of July 30, 1898, its aspect, however, being altered by the insertion of illustrations. A clear case of kleptomania.

The Medical and Chirurgical Faculty of Maryland.—The next semiannual meeting of the State Medical Society of Maryland will be held at Frederick, on Wednesday and Thursday, November 16th and 17th.

The Pan-American Medical Congress.—At the request of the Venezuelan government and of the local committee, the next meeting of the Pan-American Medical Congress, which was appointed to be held at Caracas in December, 1899, has been postponed to the same month in 1900. The curious and ludicrous reason alleged for the request is that a revolution and an epidemic of small-pox have agitated unduly the Venezuelan medical profession. The real reason is not allowed to appear.

A Medical College Burned.—The building of the medical department of the University of Tennessee at Nashville was destroyed by fire on November 11th.

Suicide at a Hospital.—A patient in the Post-Graduate Hospital in this city committed suicide one day last week, by jumping from a window on the top floor to the court.

The Killing of Harold Frederic. — The coroner's inquest in the case of Mr. Harold Frederic, the correspondent of the New York *Times*, who died in London in consequence of maltreatment at the hands of a Christian "scientist," was held on November 8th. The jury rendered a verdict of manslaughter against Mrs. Mills, the Christian scientist who attended and treated him, and brought a similar verdict against a young woman, a member of Mr. Frederic's household, who summoned and assisted Mrs. Mills. The verdict of the jury was that death was caused by heart failure, which was accelerated by the absence of medical treatment; that the deceased man was physically incapable and occasionally insane; and that the two women were criminally responsible for his death.

Obituary Notes.—DR. F. O. HART, of West Unity, Ohio, died of apoplexy on October 10th. He was a graduate of the University of Michigan in 1884.—DR. JOHN HELM, of New Brunswick, N. J., died at his home in that city on November 7th, after a long illness. He was a graduate of the medical department of the University of the City of New York in the class of 1860, and served during the civil war as surgeon with the second New Jersey volunteers.

The Tri-State Medical Society of Virginia, North Carolina, and South Carolina.—At a meeting held at Virginia Beach on August 31st, this society was organized by representatives from the three States. A temporary organization was effected by the election of Dr. W. H. H. Cobb, of Goldsboro, N. C., *Chairman;* Dr. H. H. Dodson, of Milton, N. C., *Treasurer;* and Dr. Paulus A. Irving, of Richmond, Va., *Secretary.* The temporary president was authorized to appoint an organization committee from each State, and it was suggested that the first meeting of the society be held before New Year.

Dr. Andrew Von Grimm.—At a stated meeting of the medical board of the St. Mark's Hospital, a resolution was passed to extend the thanks and appreciation of the medical board to Dr. Andrew Von Grimm, one of the attending physicians to the hospital, for his enthusiasm, diligence, and success in securing proper and opportune treatment for the soldiers who were received in the St. Mark's Hospital.

Diploma Cut Rates.—The chancellor of the university, in his report before the council on November 7th, characterized as rate cutting the action of "a sister college," in offering diplomas after three years' study. The report in part said: "Our medical work,

which at the date of the chancellor's report last year was in an unsatisfactory condition, is now very prosperous. The enrolment of students is more than one-half larger than last year. The faculty is most harmonious and efficient. A few unwilling professors have been spared to join an eager sister university. We regret that the eagerness of this out-of-town corporation to collect hastily a medical school has led it to offer to matriculants of one year ago doctor's diplomas after two years' additional study. We could not meet this offer, having announced that the class of 1899 should be our last three years' class. We preferred to lose a score or two of students from our second-year class rather than meet this cut in rates. The present indications are that we shall be the gainers even as regards the number of students by our adherence to our high standard." Co-education in city institutions is looked upon as unsuited for metropolitan conditions. The consolidation with Bellevue is reported as "organic and complete."

University and Bellevue College.—Dr. E. Harrison Griffin has been appointed lecturer on diseases of the nose and throat in the New York University and Bellevue Hospital Medical College.

The Death of Dr. Lindheim.—We of this city should bow our heads in shame over the death in New York, September 16th, of Dr. George W. Lindheim, a Red Cross surgeon. Early in September he passed through Cleveland in charge of a train having on board the sick of the eighth New York volunteers. The superintendent of the Huron Street Hospital and several physicians were at the station, saw the sick on the train, and said it was a crime not to put them in hospitals here. Dr. Lindheim said he had them all well in hand, and as they had come so far and were so near home it would be best to continue. For this, our local papers and some physicians criticised him most bitterly and unjustly. Not a man under his care died, as the sequel shows, but heroic overwork and worry over the unjust attacks upon him emanating from this city so undermined his health that he became infected with typhoid fever, and died raving against his unjust accusers. It is no exaggeration to say that Dr. Lindheim was murdered by the sensational journalism of the day.—*Cleveland Journal of Medicine.*

Boo-hoo Fever.—Dr. Walter F. Robinson describes, in the *Albany Medical Annals*, a peculiar complaint closely resembling epidemic influenza, which attacked nearly all the troops recently sent to Honolulu. There were pains in all the bones, especially in the small of the back; generally severe headache, coated tongue, loss of appetite, and some little fever. The attacks lasted, as a rule, two or three days, and then the patient would feel as well as ever. One symptom, which was almost constant, was mental depression and discouragement. The soldier would lose all his courage and interest in his duties and in the army in general. All his good spirits would desert him, and he would only mope and wish to be sent home. This condition was so peculiar and characteristic that the disease received the name of the "boo-hoo" fever, and as such is known all over the island. Strangers are very apt to be attacked with it, and its cause Dr. Robinson thinks is to be ascribed to the new climatic conditions in which the system of the patient finds itself. On this account the disease is sometimes called climatic fever.

A Memorial to the Late Dr. Greig Smith.—The new operating-theatre for the Bristol Royal Infirmary, erected as a memorial of Dr. Greig Smith, was opened recently at a meeting presided over by Mr. Richardson Cross, ophthalmic surgeon to the infirmary. In opening the proceedings, Mr. Cross said that the infirmary was, with the exception of Addenbrooke's, the oldest provincial hospital in England. Sir William MacCormac delivered an address, in the course of which he compared the appalling mortality from sepsis in the Franco-Prussian and American civil wars with the comparative immunity from such complication in recent times.

Examination of Acting Assistant Surgeons.—At the breaking out of the war the army medical department, not having made provision beforehand, was obliged to employ a large number of contract surgeons on the strength of letters of recommendation, there being no opportunity to prove their fitness by an examination. Now, however, that the press is over, it is intended to convene a medical board to examine all now in the service, as well as any others who may make application for appointment.

The American Medico-Psychological Association.—The next annual meeting of this association will be held in New York, on Tuesday, Wednesday, Thursday, and Friday, May 23 to 26, 1899. The officers of the association are: *President*, Dr. Henry M. Hurd, Baltimore, Md.; *Vice-President*, Dr. H. A. Gilman, Mt. Pleasant, Iowa; *Secretary and Treasurer*, Dr. C. B. Burr, Flint, Mich.

Lost on the "Mohegan."—Among those lost in the wreck of the Atlantic liner *Mohegan* off the Manacles was Mr. John Fallows, a young laryngologist of London, who was acting as medical attendant to a patient coming to this country.

Medical Society of the State of New York.—The business committee of the Medical Society of the State of New York for the coming meeting, which is to be held in Albany, January 24, 25, 26, 1899, consists of Drs. Willis G. Macdonald, Albany, chairman; Edward B. Angle, Rochester; and James M. Winfield, Brooklyn. Members desiring to present papers should notify the chairman of this committee.

The American Academy of Railway Surgeons.—The next session of this society will be held in October, 1899, at Omaha, Neb. The newly elected officers are as follows: *President*, Dr. W. W. Grant, Denver, Col.; *First Vice-President*, Dr. J. F. Pritchard, Manitowoc, Wis.; *Second Vice-President*, Dr. J. P. Lord, Omaha, Neb.; *Secretary*, Dr. T. B. Lacey, Council Bluffs, Iowa; *Treasurer*, Dr. C. B. Kibler, Corry, Pa.; *Editor*, Dr. Fred J. Hodges, Ashland, Wis.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, November 3, 1898.

EDWARD G. JANEWAY, M.D., PRESIDENT.

THE meeting was in charge of the section on general surgery.

The Radical Treatment of Hypertrophy of the Prostate.—DR. EUGENE FULLER presented a paper on this subject (see page 721).

Personal Experience with Bottini's Operation for the Radical Cure of Hypertrophy of the Prostate.—DR. WILLY MEYER contributed this paper. (To be published in a future issue.)

DR. R. F. WEIR opened the discussion by saying that the reader of each paper had suggested methods which were novel and comparatively untried. The cutting operation of McGill had been modified by the speaker by the addition of persistent siphon drainage, and since this had been done he had not had any mortality and the benefit had been fair. The operations of Fuller and Alexander seemed to him to be founded on good surgical principles, but he could not help looking askance at the Bottini operation. When first proposed, twenty years ago, it had excited a good deal of enthusiasm, but then, as now, it was largely done by one man. Dr. Gouley had strongly advocated it in this country. The reason there was not a more general following seemed to him still to obtain, *i.e.*, the liability to infection from the burn in a part of the body where it was difficult to maintain antisepsis and asepsis. Such a wound was comparable to those made in the mouth, and there was always liability to infection, no matter how carefully the bladder was washed out prior to operation. Although, of course, Dr. Willy Meyer had done the operation only in a small number of cases—twelve—nevertheless the mortality in these twelve was by no means small.

DR. FRANK HARTLEY said that in performing prostatectomy he had never injured the urethra. When the bladder was not atonic and the urethra not injured before operation, he did not establish drainage except through the catheter. His experience with castration and with ligature of the vas deferens had been very poor, as he had seen little or no benefit from these procedures. He relied upon excision of the prostate, either by the Zuckerkandl incision or by the method advocated by Dr. Fuller.

DR. S. ALEXANDER would not say that either prostatectomy or the Bottini operation should be recommended for the relief of prostatic obstruction with the hope of accomplishing a good deal in every instance. Surgeons did not always seem to realize how little was actually known concerning the pathology of the prostate. Dr. Fuller, for example, had stated this evening that the glandular variety was the least common form of enlargement. In an investigation begun by himself some ten years ago, he had collected specimens of one hundred and six prostatic enlargements, together with their clinical histories, and a study of these cases had taught him that the earlier the prostatic enlargement the more likely it was to be glandular, and that the large horny prostates were really due to secondary changes as a result of passive congestion or of secondary inflammatory disturbance in the prostate. This meant that the glandular form was the most common in the earlier stages, and it brought up the important question, "Are we not justified in recommending prostatectomy earlier and more frequently than heretofore?" In reply to this question, he would say that he thought we would ultimately come to regard prostatectomy as the rational and proper surgical procedure to be offered to the patient, just as in the case of a benign tumor elsewhere which was liable to lead to much discomfort or to endanger life. Undoubtedly the earlier the operation was performed the better the result, as to both the vesical function and the mortality.

His Method of Enucleation.—The best method of enucleation of the prostate was at present an open question. So far as his experience went, he had succeeded better with the perineal route than with the suprapubic incision. It had been said that the perineal operation took longer and was attended with greater hemorrhage. Such a statement must be the result of a misconception of the method of performing the operation recommended by him. He made a cross-incision from one tuberosity to the other, dissected down underneath the membranous urethra and prostate, and made his enucleation without opening the urethra. He then drained entirely through the urethra by catheter. The membranous urethra was perforated and cut down to the apex of the prostate. With the finger passed down to the apex of the prostate as a guide, a bistoury was introduced, and made to cut underneath the posterior isthmus; then, the line of cleavage which separated the lower portion of the prostate and the lateral lobes having been found, the enucleation could be easily and rapidly performed. He had operated in fourteen cases in this way, with two deaths and one case of severe hemorrhage. Recently he had tried to operate without the suprapubic incision, selecting for the purpose two lean subjects, in whom suprapubic pressure could be easily made. He had succeeded in both instances, and had checked the hemorrhage by the insertion of a "shirted cannula." Both patients were sitting up on the tenth day, the wounds of both were healed in three weeks, and they were able to empty the bladder completely. Of the two deaths, one was from acute uræmia, and the other from a general septic condition. The other patients recovered within five weeks. One man had incontinence for six weeks, and at times since then after having indulged in alcoholics. The others had continued to empty their bladders satisfactorily, and had good control over the bladder. The method advocated by him seemed important, because it saved the muscular fibres lying over the trigonum. His studies had taught him that the preservation of these fibres had much to do with securing thorough evacuation of the bladder. Regarding the cases of obstruction without an enlargement of the prostate impinging upon the urethra, the speaker said that there would be found accessory prostatic glands in these cases in the region of the trigonum. These interfered with the muscular structures at this point, and so prevented complete emptying of the bladder.

DR. FULLER, in closing, said that he expected the result to be radical after his operation. He agreed with Dr. Alexander regarding the importance of preserving the muscular structures of the bladder. In his opinion, it was a matter of safety to have a suprapubic opening. He had had to make a suprapubic opening after a perineal opening had been established, in one instance, because of very profuse hemorrhage. In a suprapubic operation care should be taken to get the bladder wall up to the abdominal wall, and also not to introduce any instrument into the opening.

DR. WILLY MEYER said that he believed there were in the Bottini operation two dangers to life, viz.: (1) sepsis; and (2) pulmonary embolism. If long incisions were made thrombosis in the veins must be much more rapid and perfect. He could not understand, however, how Bottini, who operated first in the preantiseptic times, had had no death following his operation. It was not uncommon to notice an improvement

in the power to empty the bladder within two or three days after the operation. He thought the advocates of prostatectomy would hesitate very much to subject men of seventy years or over to these cutting-operations, yet even in these old people good results had followed the Bottini operation.

SECTION ON GENITO-URINARY SURGERY.

Stated Meeting, November 8, 1898.

DR. R. H. GREENE, CHAIRMAN.

A Case of Complete Amputation of the Penis for Epithelioma.—DR. S. ALEXANDER presented this case. The patient, A. S——, was forty-five years of age, a Swede, and single. About twenty years ago he contracted gonorrhœa, and about fifteen years ago he suffered from a tumor in the right inguinal region, which was lanced, contents being evacuated; it healed in about two weeks. About two years ago the right testicle became swollen and painful; it gradually increased in size for six months, when it was about double its natural size; then a small pimple appeared on the side of the testicle, which discharged a yellowish fluid. This healed in two weeks, but the testicle did not decrease in size. About four months after another pimple appeared, which discharged for two months. He went into the hospital, where the eruption was entirely healed. In about four months another pimple appeared on the under surface of the penis near the glans, which grew very rapidly, until about a month ago it formed a urethral fistula on the under surface of the penis at the corona. The penis became swollen and a small ulcer appeared on its upper surface; also one on its left side. Examination showed the penis to be swollen, tense, and inflamed. The normal opening of the urethra was closed, the urine passing through a fistula on the under surface near the corona. A large ulcerating surface was present on the left side of the glans, also involving the prepuce. On the under surface of the glans was another ulcer, which communicated with the urethra. The skin covering the whole penis was indurated. On October 4th Dr. Alexander operated. The parts were rendered aseptic. The scrotum was divided between the testicles, the two parts being temporarily united. An incision was then made in the perineum, and the urethra exposed and dissected out. An incision was then made around the penis, one-half an inch from its base. The penis was then dissected away, the crura being removed from the bone with the periosteal elevator. The urethra was divided in the perineum; its remainder with the penis was removed, deep sutures of chromicized catgut being used to unite the deeper structures. The urethra was stitched to the skin with the same material. The bladder was drained with a catheter and washed with saline solution. The skin was united with silkworm-gut sutures, rubber tubing being used to drain the upper portion of the wound. A catheter was fixed in the bladder and aseptic dressings were applied. On October 5th the patient suffered considerable pain. On October 12th there was some sloughing in the perineum and the wound in the scrotum had separated. On October 13th the patient passed water unaided.

DR. ROBERT H. M. DAWBARN thought a prettier result could have been obtained if the operator had adopted the Hilton-Rosa method, which avoided the cutting of the scrotum.

Vesical Calculus with Hairpin Nucleus; Removal with Lithotrite.—DR. S. ALEXANDER presented this specimen.

A Case of Iliac Adenitis.—DR. R. GUITÉRAS presented an Italian, twenty-six years of age, a gardener by occupation. Five years ago the man had had malaria, an acute attack, with enlarged spleen. Since then he had never felt well. Three months ago he noticed a swelling in the right iliac region, and ten days later a swelling in the right groin appeared. He continued his work for a few weeks, when, the swelling becoming painful, he entered the hospital. Examination revealed a swelling below Poupart's ligament, and above this ligament was found a tumor, about two and one-half inches long and one and one-half inches wide; it was exactly under the inguinal canal. He gave no venereal history. The external genitals were normal. There were no lesions in the epididymis, perineum, or anus. The urine was normal. The lymphatic glands in the epitrochlear, groin, and cervical regions were all enlarged. The blood on examination showed anæmia. The question now was: "What is the matter with the man?" In the first place, the question of an incarcerated hernia might have been considered; secondly, a tumor in the inguinal canal; thirdly, an appendicitis. The tumor was a little below the region of the appendix; but sometimes an abscess pointed even below this point. The question of a psoas or iliac abscess might have been brought up. At some time the swelling below Poupart's ligament probably had had some connection with the swelling above. The man was operated upon, an incision being made in the line of the femoral vessels. A mass of enlarged glands was found, two and one-half inches long and one and one-half inches wide. After the groin glands were extirpated an incision was made through the inguinal canal, but no tumor was found there; the cord appeared normal. But just below the transversalis fascia a tumor could be felt, which was thought to be an extension of the inflammation from the lymphatics in the groin; it was about the iliac vessels. The incisions were all sewn up. The tumor afterward gradually diminished in size. When the patient came to the hospital the temperature ranged from 99° to 102° F.; the pulse ran from 76 to 98. As soon as the operation was done the temperature fell to normal. Since then the patient had been on tonic treatment, and had been up and about some time. This was an interesting case, because tumors above Poupart's ligament were rare, few of them occurring in connection with the trouble in the groin. The pathologist's report was that it was a simple adenitis.

DR. HERMANN KLOTZ thought that malaria was a possible cause of this swelling. One occasionally saw suppurative adenitis in the large glands in the muscles of the abdominal wall. This enlargement of the iliac glands is probably seen when there is an extirpation of the superficial glands.

A General Consideration of the Contributing Factors in Hæmaturia.—DR. WILLIAM K. OTIS read a paper with this title. Every hemorrhage of the urinary apparatus resulted from the extravasation of the blood as a whole, or of blood corpuscles, or of the blood pigment alone. The cause lay in increased blood pressure or in changes in the vessels, or in a combination of both. Hemorrhages of the urinary apparatus resulted, therefore, in inflammatory processes, in the exanthemata, in scurvy, and through erosions of vessels in ulcerative processes and neoplasms. Among the more common causes of hæmaturia were stone, including gravel and acid crystals, tumors and tuberculosis and inflammatory conditions, cystitis, nephritis.

Stone in the Bladder.—This caused hemorrhage, either by directly injuring the mucous membrane by its movements induced by more or less violent efforts on the part of the patient; or, as Dr. Guyon had proven, by the presence of the stone alone, which caused a chronic congestion of the mucous membrane. It might also cause hemorrhage, either by its passage through the ureter or by its retention in the pelvis of the kidney. The scratching of the mucous membrane

of the ureter caused bleeding, which was the first symptom of an attack, and patients who had had previous attacks of hæmaturia knew that this bleeding prognosticated an attack of kidney colic. As a rule, however, bleeding did not occur until the gravel had passed into the bladder, and then the hæmaturia was usually of short duration. When the stone was too large to pass and remained in the pelvis of the kidney, hæmaturia was caused in the same way as when it was in the bladder; *i.e.*, by movements of the patient and by the ensuing congestion of the mucous membrane. The hæmaturia in these cases was notably increased by exercise and ceased on repose; but such was not always the case, some patients bleeding profusely even when at rest, probably because the stone was engaged in the pelvis and calyces, which prevented laceration of the mucous membrane. These latter hemorrhages usually were not very profuse or of long duration.

Tumors of the Bladder. — Benign tumors might cause hemorrhage, simply through the presence of a foreign body. Malignant tumors caused hemorrhage by ulceration of the blood-vessels. Renal hemorrhage, as a rule, began spontaneously, was unaccompanied by pain, and uninfluenced by either movement or rest. It was apt to be more abundant than when caused by stone. The duration and intervals between the hemorrhages were very irregular.

Tuberculosis.—When the hemorrhage was due to tuberculous ulceration it could be differentiated from that caused by other neoplasms only by bacterial examination of the urine for bacilli, by the discovery of tuberculous foci in other parts of the body, or by the injection of Koch tuberculin, which gave rise to the characteristic reaction.

Cystitis and Nephritis.—Hemorrhages might occur in either acute or chronic cystitis or nephritis, and were rarely of much severity; the clinical features of either of these diseases would readily determine the cause of the bleeding. The speaker believed that there must be some contributing factor in most hæmaturias, in addition to the lesion by which they were actually produced, to account for the curious intervals which are often noted between the hemorrhages, and also to account for hemorrhages occurring irrespective of motion or rest on the part of the patient and other conditions referred to. He thought this factor to be undoubtedly congestion. Congestion alone, without other lesions, was capable of producing hæmaturias, as seen occasionally in pregnancy, or in obstructive valvular disease of the heart, or in cases of retention of urine, especially in the first retention of prostatics.

Dr. Hermann G. Klotz reported the case of a man, seventy years of age, who had severe hemorrhage in the bladder; when the bladder was opened, nothing was found but a bleeding vein.

Dr. Charles W. Allen was glad to hear the remarks made about congestion alone being a possible cause of hæmaturia. It was a fact that one occasionally met with hemorrhages which could not be classified, according to the clinical symptoms or by ordinary means of investigation, as due to any of the well-recognized causes.

Dr. Pedersen referred to a patient who had hæmaturia more after resting than when he was up and moving about. The diagnosis made in this patient was that of recurrent attacks of crystals in the ureter, with a probability of a renal calculus—possibly a large calculus filling the pelvis and calyces so that the moving about of the patient did not have much effect upon the stone in the kidney. The cystoscope showed hemorrhage coming from the right ureter, which corresponded to the side causing the patient the sensations of pain and discomfort whenever he had these attacks of hæmaturia.

The chairman, Dr. Greene, referred to a form of hæmaturia which was extremely rare. A patient applied to him with a history of hæmaturia, which was proven to come from the left kidney. This condition began one year before the man came under his observation, the attacks being about one week apart at first; later it increased in frequency. The patient lost in weight and was compelled to give up his business. A diagnosis of stone in the bladder had been made by one of the most expert diagnosticians in this country. Operation had been performed upon the left kidney, but no stone found. A history of syphilis had been overlooked by his medical adviser. He was placed upon inunctions of mercury, with the result that in two weeks' time the hemorrhages ceased. When the inunctions were stopped the hæmaturia returned, only to disappear when the inunctions were resumed. Diagnosis was made of gumma of the left kidney. Isreal, of Germany, had reported two such cases; he removed the kidneys and found gumma present.

Dr. Charles H. Chetwood, referring to Dr. Pedersen's case of hemorrhage occurring more during rest, said that accumulations of oxalate-of-lime crystals in the pelvis of the kidney not infrequently caused hæmaturia; he had seen many cases of this. In cases of hæmaturia from stone in the kidney, patients were often directed to take horseback rides. In case of hæmaturia from oxalate-of-lime crystals, exercise was a means of getting rid of these crystals; during rest they accumulated in larger quantities.

Dr. William K. Otis said it was not strange that congestion played such an important part in these hemorrhages, when the blood supply was considered. In fact, it was difficult to see how any other factor could produce hemorrhage when the lesions remained the same, hemorrhages occurring at irregular intervals and being produced by exposure to cold and too much dinner. As a matter of fact, it had been proven by cystoscopic examination that during hemorrhage there was more or less congestion of the bladder; also that when there was no bleeding the bladder was pale and not congested.

The Use of Mercury Hypodermatically in Syphilis.—Dr. S. S. Jones read this paper. He desired to make a few practical observations upon this method, based upon personal experience in private practice, and to give the results of his endeavor to rid it of its most objectionable feature; namely, its tendency to occasion generally considerable pain and inconvenience, and, not seldom, great suffering, which had caused so many to abandon the method altogether, or else to reserve it for exceptionally urgent cases. In order to prove that this last statement was true, the speaker quoted literature from many authorities. The article by J. William White in Morrow's "System" he thought to be most valuable, as giving not only the author's carefully formulated opinions, but those of many at home and abroad; they showed an immense preponderance of opinion against the method. White said: "It is painful and in many patients excites apprehension and strong objection. It is occasionally though rarely dangerous, and sometimes rapidly fatal." In summarizing, White further said: "In the light of the evidence presented above, it seems to me safe to assert that the hypodermic treatment of syphilis has not yet shown results which warrant its adoption as a curative method to the exclusion of or in preference to other methods; but, on the contrary, that it has some apparently insuperable advantages and even dangers which render it improbable that it will ever be adopted." Since the first enthusiasm, inseparable from the advocacy of a new remedy or new method, no one, the speaker said, had advocated its routine employment. If the method was as painful and dangerous as many believed, it should never be employed. The bichloride, calomel, the yellow oxide, the salicylate, oleum cinereum,

the bicyanide, the albuminate, were the forms of mercury that had been proposed as best for use according to this method. On account of its solubility and stability most physicians preferred the bichloride. Various methods had been proposed to lessen the pain of injection, such as the combination of cocaine or morphine with the bichloride in solution, or the injection of morphine before injection of the bichloride. The speaker had been led to look with disfavor upon the method from such a consideration of pain and annoyance to the patient, when the necessity for its use in a very critical case of brain syphilis had caused him to seek a method of lessening its disadvantages. In using this method in this particular case, no abscess supervened nor did any serious condition result; but such cases were sometimes attended by severe and prolonged pain and considerable local swelling and soreness. In searching for a solution that would be free from these disadvantages, he had found that a solution of bichloride of mercury and sodium chloride became turbid upon the addition of cocaine, and that the addition of morphine did not relieve the distress; nor was the injection of the turbid solution with cocaine unattended with pain. He had found, however, that if the original solution had a few drops of cocaine solution, representing, say, one-sixteenth of a grain of cocaine, added to it, and the combination was heated to the boiling-point, the mixture became clear; and, if injected while hot and before becoming turbid, occasioned generally no pain at all and seldom any swelling. It had been stated that cocaine was destroyed by boiling, but the fact remained as stated. The speaker showed a tablet he had made, consisting of bichloride of mercury and chloride of sodium, of each one-fourth of a grain, with one-sixteenth of a grain of cocaine, which he had used in a number of cases without the slightest inconvenience to the patients. Speaking briefly, he believed the method superior to all others when danger threatened organs whose functions were vital or important, as in those lesions which attacked the brain, the heart, the eye, or the ear; secondly, in cases of ulcerations which resembled tuberculous or malignant disease, especially of the tongue; thirdly, in all cases in which other methods were not tolerated or when time was valuable. In regard to the technique of the operation, the speaker believed the directions given by Bloxam, as quoted by Hutchinson, all excellent and adequate while not too complicated. "In order to prevent irritation abscess, the injection should be made into muscle and not into cellular tissue. The needle should always be washed after the syringe has been charged, so that none of the fluid may touch the skin during introduction." The speaker believed the most eligible sites for these injections to be in the cellular or muscular tissue between the scapulæ and iliac crests.

Dr. Charles Warrenne Allen said he was glad to hear Dr. Jones' paper, although the suggestion of incorporating cocaine was not entirely new to him, and Dr. Jones had told him some time ago of his success with it. He had not used this method himself, because he had never felt the necessity for its use. The injection of the bichloride of mercury occasionally gave pain, and sometimes gave rise to quite severe pain at the time of injection; and, again, it might give rise to quite alarming symptoms. In one case the speaker referred to, a strong man turned deathly white, with great oppression in the chest, and it was surmised that some of the injection had entered the circulation through the penetration of a vein by the needle. He thought the whole subject of the injection of soluble and insoluble preparations of mercury was interesting from many standpoints. In 1882 he began using the albuminate of mercury. At the City Hospital ten years ago he used the benzoate and the salicylate of mercury, but was not favorably impressed with them. The speaker said he had never believed in calomel, and to-day believed in it less than ever before. The mere fact of a possibility of embolus should put us upon our guard in the use of this method; there were many reports of death from this cause, especially from France, and he thought there were many cases of death from this cause that were not reported. This danger alone he thought sufficient to make us give up the use of calomel. Yet he knew many men in this city and elsewhere who swore by it. In using bichloride of mercury with salt, he had had only three abscesses result; these injections were given in the cellular tissue, whereas they ought to have been placed deeply in the muscles. The third case was in a strong man, who received the injection in his buttocks; a number of injections gave rise to indurations, and one of these had broken down, resulting in a troublesome abscess. In looking over his case book at the dispensary the day before, he had found twenty-nine cases in which the injections had been recorded as being used, since last January; these did not comprise all the cases, because in many the treatment was not put down. He had used this method in private practice, and had the histories of a number of cases in which it was of marked benefit; so that he must put himself on record as being in favor of the intramuscular injection of the bichloride. The speaker said he would like to call attention to such instances as he had had in private practice, in which patients came to his office after having taken the protiodide or other preparation of mercury internally, and who presented a most deplorable condition, with furred tongue, possibly slight salivation, diarrhœa, etc. Stopping all internal treatment at once and placing the patient on one-half-grain doses of bichloride, injected into the buttocks, would within twenty-four hours be followed by relief, and the patient would come back and say that it had done him a wonderful amount of good; and this, too, without his having had anything to stop the diarrhœa or relieve the other disturbances caused by mercury giving by the mouth. Dr. Allen said he had treated a number of brain and spinal-cord syphilitics, and in two cases he had had remarkable success; he could not speak too highly of the treatment by injection, especially when the absorbent organs were not in condition to do their work. In regard to the element of pain, in his dispensary work the patients were not told that they would suffer pain; when asked after injection if they had pain, they answered No. Many on their return, when asked if they had had pain at any time after leaving the dispensary, made the same answer. He would gladly try the cocaine as advocated by Dr. Jones, but it was hard to tell beforehand which injections would prove painful.

Dr. Lapowski said that the injection of the sublimate solution, even in small amount, would produce pain in some patients; he considered this an idiosyncrasy. In his experience in hospital, cocaine, if used in the way mentioned by Dr. Jones — the solution being boiled and injected while warm — and given to a nervous woman, would always cause a certain amount of pain. This was not so in dispensary practice. If the veins were affected and injections were used, we might have an embolus. In hemorrhagic syphilis he never used the hypodermic injection. In old age one of the most important conditions to consider was that of the kidney. In regard to insoluble solutions, the speaker said that if he had to choose between the sublimate and calomel to make a differential diagnosis, he would always choose calomel. If one used the sublimate injection, two hours afterward mercury would be found in the urine, and most of the injection would surely pass through the system in twenty-four to forty-eight hours. In regard to abscess formation, it had been reported recently

that 176,000 injections had been made and only twelve abscesses had resulted. Abscess formation was certainly not so common as some are led to believe. He thought a great disadvantage in giving the insoluble form of mercury hypodermatically was that it was never known just what amount of mercury was in the system.

Dr. Hermann G. Klotz said that he had used injections of bichloride and bicyanide of mercury twenty years ago in private practice and lately in hospital practice, and was satisfied with the results obtained. There was but little danger connected with injections of soluble salts. He related the history of one case in which severe symptoms followed. The patient had an enteritis with hemorrhage which lasted for several days and was difficult to stop. The speaker had never used cocaine. The bichloride injection was painful for two or three hours. To be effective, the injections should be made every day. He thought the bichloride was especially useful in the condylomatous stage. The bicyanide was much more effective in the later stages, especially in the skin and mucous-membrane lesions. In regard to the insoluble injections, he had made a report of two hundred injections in 1889, which had been published in the *Journal of Cutaneous and Genito-Urinary Diseases;* he also had read before the American Association of Dermatologists a report of eleven hundred injections made in one hundred cases in private practice. The reports of the cases he hoped to publish some time in the near future. He said he had watched the effect of insoluble injections on the kidneys, and had also carefully watched the urine. He remembered one case in which albumin was repeatedly found in the urine in a strong patient; the injections were stopped and the albumin disappeared, only to return when the injections were resumed. Later the albumin did not appear again. Salivation was not a rare occurrence after injection of the insoluble salts. If salicylate of mercury was used, he did not think salivation would occur; it was different with calomel. His experience with emboli of the lung was limited to eight cases, all of which ended in recovery without serious consequences. He had never seen abscesses after the injection of a soluble salt, except small circumscribed abscesses of the skin. Abscess of the skin would never occur if it was scrubbed with alcohol and hot water.

Dr. Mason wished to mention one practical point in regard to the pain. It was in reference to the manipulation of the point of the needle after the injection was made. The needle should be so manipulated that the material injected would be diffused, which lessened the pain very much.

Dr. Robert H. M. Dawbarn wished to make one point in regard to boiling the solution. He had seen the assertion made that when the cocaine solution was brought to the boiling-point the cocaine turned to ecgonin, which was not analgesic. He now injected morphine, and, after waiting a few minutes, injected the solution. The discomfort depended largely upon whether the injection had been superficial or deep. He thought that doctors made a mistake in pinching up the skin previous to inserting the needle; the injection should be made directly into the substance of the muscle. He was surprised that no mention had been made of Kaposi's hydrargyrum oxidulatum tannicum, one-half mercury, in powder. In alkaline blood this was slowly decomposed.

Dr. Charles H. Chetwood said that Dr. Keyes believed in the hypodermatic injection of mercury, and used it a great deal. The speaker had given up calomel on account of abscess, which so often formed. The bichloride caused too much pain. For five or seven years he had used a preparation of salicylate of mercury, in combination with benzoinol—three grains to the drachm. He gave it once, twice, or three times each week. There was no preparation the speaker had used that gave less pain. During the past seven years, using this in a great many cases, he had never seen an abscess form. Many women were hypersensitive to pain, which might account for many complaints. He had never known an embolus to occur; neither had Dr. Keyes. He had used this preparation in brain and spinal syphilis with success.

Dr. R. H. Greene was familiar only with the bichloride, and the only objection he had to its use was the pain it gave rise to. He injected it into the gluteal region and as deeply as he could. During the past ten years he had never had an abscess follow. It was more or less of a nuisance for the patient to come to one's office every day for his hypodermic.

Dr. S. S. Jones said the use of the calomel was good, for the drug was gradually absorbed and the danger attending its use was not large.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

One Hundred and Forty-First Regular Meeting, Held on Friday, October 14, 1898.

Dr. W. Gilman Thompson, President, in the Chair.

A Brief Account of Bad Nauheim and its Methods.—Dr. George L. Peabody presented this paper (see page 730).

Dr. C. L. Dana said that during the past two years he had had some experience in the application of the artificial baths here in New York, largely in cases of locomotor ataxia, in which disease the baths at Bad Nauheim had acquired some repute among German neurologists. The speaker said he had not been able to convince himself that the Nauheim baths, as administered here, did any more good in this disease than ordinary lukewarm baths. Some relief of the sensory symptoms was experienced, as after ordinary baths. In two cases of tachycardia, apparently due to defective innervation of the heart muscle, the baths did not produce any improvement. In one or two cases of severe valvular disease complicating some nervous trouble there was also no improvement. The only cases which had been benefited by the baths were of insomnia and neurasthenic symptoms. In this class of cases they seemed to produce a more soothing effect than the ordinary lukewarm baths.

Dr. Peabody, in closing, explained that the baths at Nauheim were always administered in wooden tubs; this was done because the salts contained in the water would act on metal tubs. The attendant who gave the bath carefully followed the instructions of the patient's physician as to the duration and kind. There were chiefly two kinds of baths administered, *i.e.*, the thermal, which contained little free carbonic acid; and the sprudel, which consisted of the natural water of the place with all its free carbonic acid. The patient remained in the bath from four to fifteen minutes, according to the instructions of his physician, the rule being gradually to lengthen its duration. During the bath the patient remained perfectly quiet; he was then dried by the attendant and instructed to go to his room and rest for an hour or two. The temperature of the water of the baths ranged from 85° to 95° F. They gave rise to a feeling of fatigue out of proportion, seemingly, to the heat of the water. They were usually administered in the forenoon. The thermal baths were the ones which were generally taken during the early course of the treatment, and after fifteen or twenty had been taken the sprudel baths were substituted. A bath was taken once daily for two consecutive days,

and then a day's rest was advised. Some hours after taking the bath a skilled attendant called on the patient and administered massage; this was at first very light, consisting of centripetal movements, the idea being to assist the muscles to send the blood to the heart. In addition to this, the patient was instructed to make voluntary movements with the head, body, and extremities in every conceivable direction, which movements were gently opposed by the attendant. For example, the arm was raised to a horizontal position against gentle opposition, etc. If the patient developed intermission of the heart as the result of any special form of muscular movement, then that special movement was omitted. The exercises were continued for from fifteen to thirty minutes, with intervals of rest, and afterward the patient was again instructed to rest for an hour or more. There were few restrictions on the patient's diet. He was supposed to eat well and was permitted to drink a white Mosel wine; red wines, Rhine wine, and the stronger liquors were forbidden. Coffee was also tabooed, as were frequently also sweets; whether a man was allowed to use tobacco or not depended somewhat on his own condition and somewhat on whether his attending physician was a smoker. The course of treatment lasted from five to six weeks. As regarded the altitude, Bad Nauheim was about on a plane with Frankfort, which was at the sea level. The treatment was regarded as particularly efficacious in cases of cardiac dilatation and enfeebled muscular conditions, with or without valvular lesions. In cases of angina pectoris it apparently often proved very effective, affording relief which lasted for long periods of time. There were twenty practising physicians at Bad Nauheim, and as no two of these gave the treatment in exactly the same way, it must be regarded still as somewhat empirical. In those cases in which there was increased arterial tension, the pulse became softer and more compressible. The treatment was not recommended in cases of advanced nephritis or aneurism.

Value of Blood Examinations in Malarial and Typhoid Fevers.—In a general discussion of this topic the president, Dr. W. Gilman Thompson, said that during the past six weeks he had seen about two hundred patients, many of them soldiers, who had been brought to the Presbyterian and Bellevue hospitals with malaria or typhoid, or both. Among the malarial cases, the æstivo-autumnal type was very common, and by the time the patients reached the hospital the fever was more or less continuous and typhoidal in character. In the diagnosis of such doubtful cases, material aid was afforded by blood examinations. Among the two hundred cases, there were seventeen of undoubted mixed infection. In such the typical course of typhoid would occasionally be suddenly interrupted by a chill and sudden rise of temperature, and the malarial plasmodium in some form or other would be found in the blood. An interesting question arose in connection with these cases, namely, to what extent the malarial infection influenced or modified the typhoid condition. The speaker said his own experience had been that in the majority of instances the plasmodium remained quiescent during the course of the typhoid fever or until a few days after convalescence began; the effects of the malarial poison then became manifest. In exceptional instances, however, the malaria manifested itself during the active course of the typhoid fever. In one case, originating in New York, which Dr. Thompson reported before the Association of American Physicians in 1894, the patient, who was suffering from undoubted typhoid, as evidenced by the clinical picture—pyrexia, rose rash, hemorrhage from the bowels, etc.—suddenly developed a violent chill at the end of the second week, followed by a temperature of 107° F. Malarial infection was suspected, and an examination of the blood disclosed the plasmodium. The patient had several subsequent chills, followed by fever, which were controlled by quinine, given hypodermically. The typhoid fever pursued its usual course, defervescence occurring in the fourth week by lysis. Dr. Thompson showed the temperature chart of a case in which the malaria did not develop until the typhoid had run its course; after convalescence was established the patient had a chill, followed by high fever, and on examination pigmented bodies were found in the blood. In another case, which acted in the same way, there were abundant organisms of the tertian type. In a case at Bellevue seen last year, the malarial plasmodium was found in the blood seven days after the onset of typhoid fever; the diagnosis of the latter disease was established beyond a doubt by a hemorrhage from the bowels, rose rash, and so on, and later by the Widal serum reaction. A similar case, that of a soldier from Cuba, was recently seen at the Presbyterian Hospital, in which the patient developed a violent chill during the active course of a typical typhoid fever (with Widal reaction), followed by a temperature of 107° F.; the chill was apparently not the result of cold baths, as the patient had received no such bath for two hours previously. It was regarded as malarial, but as an examination of the blood proved negative no quinine was administered. Subsequent to this the temperature pursued an irregular course, which was partly attributed to a pneumonic process in the lung. During the sixth week, after convalescence was established, the man developed another violent chill, and at this time organisms of the æstivo-autumnal type in various stages of development were found in the blood. The malaria continued for some time, until it was controlled by quinine. Dr. Thompson said he had no doubt that the chill which developed during the active course of the typhoid fever in this case was also malarial. These cases were very satisfactory when one succeeded in finding the plasmodium, as it relieved the mind with reference to the possible presence of a septic process. The speaker said that an important question to decide in connection with the Widal reaction was how much reliance should be placed upon its presence or absence. When it was present and had been obtained by accurate methods, *i.e.*, with the combined time test and 1 to 40 dilution, it might be regarded as absolutely positive proof of typhoid. At the June, 1898, meeting of the American Medical Association, the committee appointed to investigate this subject reported that in over four thousand cases of typhoid fever in which this serum test had been applied it gave a reliable reaction in about ninety-five per cent. In the remaining five per cent. the result was unreliable. The absence of the reaction, however, did not prove conclusively that the disease was not typhoid. In some cases the reaction could not be obtained until the third week, or even until convalescence was established or a relapse had occurred. In three cases tested by the health board in this city, curious results were obtained, the reaction being found in the early stages of the disease, but not in the later. One decided drawback to the serum test was that the reaction might be found so long after an attack of typhoid fever.

Dr. Peabody said that in former years, before much was known about the plasmodium malariæ or anything about the Widal test, he had seen cases of typhoid fever in which late in the course of the disease the patient would develop a sharp chill, followed by high temperature. The large majority of those patients got well without quinine and showed no subsequent symptoms of malaria. In one case the chill was septic in character and eventuated in fatal septicæmia. At the autopsy the kidneys were found studded with abscesses,

the infection having spread there from the intestinal ulcers. Of course, if in a case of this kind the plasmodium was found in the blood, it proved almost beyond a doubt that the chill was malarial in character; but the fact that in former years these patients occasionally recovered without quinine, and that they had no antecedent or subsequent history of malaria, seemed to him to justify the belief that some other cause than malaria must be supposed to exist in some of them.

Dr. John W. Brannan said that his experience in the treatment of the sick soldiers at Bellevue had been similar to that of Dr. Thompson, although less extensive. The majority of the patients had come from Cuba by way of Camp Wikoff, and were suffering from either typhoid or malaria, or a combination of both. In some of the cases the malaria was the primary disease, and during its course typhoidal symptoms developed, the existence of the latter disease being subsequently proven by the Widal test and the usual clinical symptoms of typhoid. After reporting in detail a case of this character, the speaker called attention to the importance of keeping the malarial patients under observation until the plasmodium had disappeared from the blood and the percentage of hæmoglobin and red blood cells approached the normal. In one case which had been under his care, in which the patient was discharged to a convalescent home when the hæmoglobin had reached seventy per cent. and no more plasmodia could be found in the blood, a relapse occurred three days later and the plasmodium was again found. In the cases he had seen, the anæmia was more profound in the malarial than in the typhoidal patients. In a number of instances coming under his observation, the malarial parasite was found in the blood of patients who had been free from fever for ten days or more and were still taking quinine in full doses.

Dr. Robert Abbe said it was interesting to know from a surgical standpoint that a sudden rise in temperature after operation might be due to the fact that dormant plasmodia had become active. Such a case recently came under his observation. The patient was a soldier whom he had operated on for hernia; his temperature remained normal until four weeks after the operation, and then rose to 101° F., and an examination of the blood revealed the malarial parasites. Dr. Abbe said he had been recently called to operate upon a soldier in a case of perforation of the bowel occurring in the fourth week of malarial typhoid fever. Although the case had been regarded as one of malaria, crescents having been found in the blood, the patient had suddenly developed a severe pain in the abdomen, with other symptoms suggestive of perforation. Twelve hours later, operation disclosed a slit-like perforation of the small intestine, fourteen inches from the colon, close to the mesentery, with a small, clotted vessel, suggestive of an infarction, at its edge. The slit was not in the usual situation of typhoidal perforations, and the adjacent mucous membrane was apparently normal, showing no evidences of that disease. The case was possibly one of mixed infection. An autopsy was not permitted.

Dr. Herman M. Biggs said it was not very unusual to meet with cases like the one referred to by Dr. Thompson, in which the Widal reaction had been obtained once and had disappeared a few days later. The speaker said he knew of a number of instances in which the test was present in a comparatively high dilution, and had then disappeared within twenty-four or forty-eight hours, failing to return. As a rule, however, it persisted for weeks and even months. In regard to the Widal test, it was very important to emphasize the fact that it was a quantitative and not a qualitative test; the Widal reaction not infrequently was obtained in cases which were not typhoid at all, but not in the same dilution. The dilution in which the reaction was secured should always be stated. The failure to obtain the reaction did not in any way exclude typhoid fever, for there were many cases of undoubted typhoid fever in which the reaction could not be obtained until late in the course of the disease, or even until a relapse occurred. When the reaction was obtained in a dilution of 1 to 20, it was almost pathognomonic of typhoid fever.

Dr. Thompson said that at the Presbyterian Hospital the Widal tests had been made by the pathologist, Dr. George A. Tuttle, a 1 to 40 dilution having usually been employed, and ranging from that to a dilution of 1 to 10. The reaction was obtained in a number of very mild cases of fever, possibly "walking" typhoid. In corroboration of the remarks made by Dr. Abbe, Dr. Thompson cited the case of a man who had been an inmate of Bellevue Hospital since last February (nine months), confined to bed throughout, under treatment for a Charcot knee. Recently he developed chills and fever, and malarial parasites, of the ordinary tertian variety, were found in the blood in large numbers. These had apparently been dormant for a long time. Dr. Thompson said he agreed with Dr. Brannan that anæmia was a very pronounced symptom of the æstivo-autumnal type of the Cuban malaria, especially when the patients were seen late in the course of the disease. In the soldiers it had been also accentuated by inanition and lack of proper food.

Dr. James Ewing, who had recently spent several weeks at Camp Wikoff, said he would like to call attention to some of the limitations of blood work in cases of undoubted malarial infection. He had commenced his work in the camp hospital, with the idea that in every case of acute malaria in which no quinine had recently been administered the malarial parasite could be found in the blood; after five weeks' work he had been forced to the conclusion that it was possible for a man to die of acute malaria of the æstivo-autumnal type without the plasmodium being in the blood in sufficient numbers to be detected by a careful examination. In one case coming under his observation, a diagnosis of typhoid fever was made after repeated examinations of the blood had failed to reveal any malarial parasites. The patient died, and an autopsy revealed no typhoidal lesions, but a moderate grade of malarial infection; there were no malarial organisms to be found in the blood after death, but smears from the spleen and marrow showed a moderate number. This patient had originally been treated with quinine, but had received none of this drug for several days before death. The absence of the organisms in some cases could be explained by the tendency of the ring-shaped bodies to disappear during the third and fourth days of the paroxysm. This was distinctly shown in many cases, in one of which, after a very violent seizure, an enormous number of the ring-shaped organisms were found in the blood. The patient was given small doses of quinine, three grains t.i.d., and the organisms were entirely missing on the second and third days, after which the young crescents made their appearance in large numbers. The speaker said that in nine cases of dysentery he had found the amœba dysenteriæ in the stools and malarial parasites in the blood. In examining the blood for the malarial organisms, Dr. Ewing said he had often experienced considerable difficulty in discovering the early ring-shaped forms of the æstivo-autumnal type; unless they were stained very sharply, they might easily be overlooked. Much had been said about the extracellular forms of malarial organisms; the speaker expressed the opinion that a diagnosis of malaria could not safely be based by any one on the presence of these large pigmented extracellular bodies, as they were very difficult to distinguish from cystic leucocytes.

Clinical Department.

WOUND OF THE EYELID.

By I. D. STARR, M.D.,

JAMESTOWN, IND.

On August 29th, a girl, aged two years, was kicked by a horse. She suffered a wound of the upper eyelid, one-fourth inch from the margin and extending from the inner canthus to the outer, entirely exposing the lacrymal gland.

The peculiarity lies in the fact that the wound was as clear cut as an incised wound. There was no other wound or contusion, and neither conjunctiva nor eyeball suffered any inconvenience. Four interrupted subdermal stitches assisted the wound to heal by first intention without scar.

REMOVAL OF OVARIES, TUBES, AND UTERUS FOR VICARIOUS MENSTRUATION.

By FRANK V. CANTWELL, M.D.,

SURGEON TO THE ST. FRANCIS HOSPITAL, TRENTON, N. J.

I submit this case because of the good result and because I have not in my reading happened on a report of operation for this condition. So, until enlightened, I shall claim originality.

Mrs. S——, aged thirty-five, married, has one child, aged ten years. First seen while pregnant with this child. She was then suffering from a severe chorea. After consulting all the specialists within reach—she lived near Philadelphia—she was cured by an old woman of the village.

Several years after, while frying some fat, she was burned on the forearm. An unsightly scar still remains. During several years she vainly sought relief from this affliction. I did not see her during this period, but think from her description that she menstruated vicariously through this ulcer, as it refused to heal. Finally, in despair or faith, she had recourse to Father Mollinger, who at that time flourished, and lo! the ulcer healed and gave no more trouble.

I saw her then in 1897; she was pale, weak, and in bed. Her physician (Dr. W——) told me that he had been called frequently; always at her monthly periods he would find her in collapse, vomiting "quarts" of blood, and suffering agonizing pain. These attacks, with convalescence, would last from five to ten days. During the intermission she would feel well, but weak, until another menstrual period, when she would go through the same storm. She would have normal menstrual flow.

For the third time she was going from hospital to doctor, to quack, without any relief, when I suggested oöphorectomy with removal of the uterus. She readily consented to the operation—anything to get relief.

She was sent to the St. Francis Hospital, Trenton, November, 1897, where I removed the ovaries, tubes, and the uterus low down, leaving only the infravaginal portion. The organs were in a perfectly normal condition. Her recovery from operation was uneventful. She remained at the hospital until after the time for her next menstrual period—about three weeks—when she was discharged cured.

It was with great trepidation that I responded to a call from her house some four months after, but, to my delight, it was to see her boy. She had gained twenty pounds, was doing all her own housework, and since her married life commenced had not been so well or so happy.

At this writing, September 30th, she remains well, except for some little backache. Once she had a slight showing of blood from the vagina.

I will not try to explain the above phenomena, but simply will state that this was a clear case of vicarious menstruation—at first from the ulcer caused by a burn, and then from seemingly a normal stomach, as, other than the blood, there were no symptoms of ulceration. This condition not only destroyed her usefulness but threatened her life. It was a case in which desperate measures were justified and in which the operation was clearly indicated.

A word as to neurosis, whatever that is. From the above history any physician would say: "She is a neurotic; that is the reason she was cured by faith or quackery." But this woman has no indication of hysteria in any form; if she has, I failed to discover it during her residence at the hospital. She is now a level-headed housewife.

I hope that any surgeon or gynæcologist who is consulted in a like case will do likewise. I am satisfied with the result.

TWO CASES OF CHOREA DUE TO EYE STRAIN.

By HERBERT L. STEBBINS, M.D.,

SYRACUSE, N. Y.

After reviewing an article written on chorea thirty years ago, and comparing the theories advanced and the line of treatment prescribed with those of the present day, we find that the medical profession has made but little progress toward the satisfactory solution of this perplexing problem. Rheumatism and malaria were then, as now, generally accepted as the principal etiological factors in its causation. The chronic cases, however, furnish more ample opportunity for research and experiment. Those cases which have extended over a period of months or years, and resisted the usual line of treatment with arsenic, quinine, iron, tonics, galvanism, and hygienic measures, demonstrate conclusively that some organ, or organs, in the physical economy are not performing their functions properly. M. Sée, an early investigator, found the relation between rheumatism and chorea so close as to make their connection almost a pathological law.

A recent observer, however, decided after carefully studying two hundred and seventy-nine cases that only thirty-seven could be attributed to rheumatism, in eighty-two a cardiac murmur could be heard, and in the remainder no cause could be determined. The transitory nature of this neurosis, its intrinsic tendency to recovery with or without treatment, the low mortality, and the presence of no pathological changes that could in any manner explain this peculiar nervous manifestation render investigation extremely difficult and the deductions elicited more or less problematical. While the prevailing opinion among neuro-pathologists seems to favor the theory that this choreic state is due to some toxic agent or principle in the blood, the numerous chronic cases which have been relieved by the correction of refractive errors and muscular insufficiency, after a prolonged course of constitutional treatment, certainly warrant a very different conclusion in certain instances.

The following cases were treated during a period of four months with a diversity of drugs reinforced by galvanism, massage, and hygienic and dietetic measures, with no improvement in one and but slight amelioration of symptoms in the other.

Case I.—Huldah W——, aged nine years. She had an aggravated choreic movement of the head, face, and limbs, with marked impairment of speech and difficult deglutition. This case was referred to me

in August, 1897. Family history: Mother neurotic and myopic. Sister suffered from chorea three years ago. After failing to respond to treatment of several months' duration it was discontinued, and measures were taken to ascertain the condition of the eyes. The refractive errors were corrected and the patient made a rapid and complete recovery. History of case: This patient's parents are in good circumstances, and her environments were all that could be desired. For four months the patient had been suffering from chorea and gradually became worse, although she had received liberal doses of arsenic followed by quinine, tonics, galvanism, and massage. She was emaciated and unable to maintain one position long. Prior to this attack she was an active, healthy child, but for a few weeks had complained of pain in her eyes. When I first examined her she could not go out on the street or play in the yard, as was her custom, without exciting the attention of passers by. Being of a sensitive nature she preferred to remain in the house.

Eye Defects.—On the first visit all medications were stopped. I instilled a four-per-cent. solution of homatropine, but little could be accomplished toward estimating with any degree of exactness the refractive condition of the eyes, on account of the violent muscular contraction of the face, neck, and body. Her mother was directed to return again in three days, which she did, and informed me that the child seemed much more quiet while under the influence of the mydriatic. But as its effects began to pass off she seemed more disturbed. Plus 1.00 D. was ordered. Also, sulph. atropinæ, gr. ss.; aq., ʒ i.—one drop to be instilled into each eye three times a day. She returned to the office in one week very much improved. On examination at this time +0.75 D. in the right eye, and + 0.50 D. in the left eye were found uncorrected. The proper glass was prescribed. One month later she could dress and undress and play with other children. She had but few symptoms remaining, one being a slight twitching of the feet. Shortly after this all symptoms passed away, and she had apparently made a complete recovery. September, 1898, the patient came to my office with her mother, who gave the following history: The patient had made a rapid and complete recovery. Four weeks ago the frames of her glasses became so badly bent that it was impossible for her to wear them, and their use was discontinued for three weeks, when she began to have symptoms of her old trouble. Her glasses were readjusted, and after wearing them a few days she was apparently in good health once more.

Case II.—William O——, aged thirteen years; chorea affected principally his arms and legs. The case was referred to me, August, 1897. Family history: His parents are in fine physical health. His mother has been subject to attacks of muscular rheumatism for years. History of case: He had been suffering for four months from chorea, but when referred to me he was somewhat improved. His physician informed me that although he had prescribed a diversity of drugs and electricity and had looked after his diet and hygienic surroundings, he could not make further progress toward bringing about the recovery of his patient. The general health of the patient had always been good, but for some time prior to this attack he had complained of pain in his eyes and head, which his friends attributed to his studious habits. He spent the most of his time out of school reading. Eye defects: At the first visit the patient had $\frac{20}{20}$ vision with a +0.50 D.; esophoria, 4°; adduction, 40°; abduction, 4°. Plus 0.50 D. was prescribed, combined with prisms of 1° base out. All medication was discontinued. He was directed to return to the office in one week, which he did. He was much improved. Examination developed 7° esophoria. A 2° prism was prescribed, combined with a +0.75 D. for the left eye and a +0.50 D. for the right eye. Two weeks later the patient appeared to have nearly recovered. There seemed but slight weakness in the legs, with no twitching or involuntary movements. He had no headache after he began wearing glasses. He is able to attend school and seems quite well.

WAS IT MATERNAL IMPRESSION?

By A. S. DOLLOFF, M.D.,

BEVERLY, MASS.

I would like to relate the following incident through your valuable journal, thinking it may be of interest to some one.

Mrs. ——, aged twenty-six, during her fifth month of pregnancy, called with a friend upon an old lady who had fallen and sustained a fracture of the hip and was consequently confined to her room, and who, unknown to Mrs. ——, was afflicted with athetosis. The constant movement of the hands made a profound impression upon the latter at the time, and as soon as possible she took her leave. No subsequent discomfort was felt, however, either mental or otherwise, except an occasional flashing of the occurrence through the mind.

After the birth of the child, which was at full term, it being perfectly developed, it was noticed that he had well-marked athetoid movements of the hands, and whenever he became excited mentally these were very much increased. The movements gradually subsided, until when the child was about five months old they entirely disappeared, except when he is under strong mental excitement; at such times he still shows the movements in a slight degree. The child is at present nearly two years old and perfectly healthy.

No such affection had ever appeared previously in any member of the family of either father or mother. Was it maternal impression?

REMOVAL OF THE CÆCUM.

By J. H. CARSTENS, M.D.,

DETROIT, MICH.,

CHIEF OF STAFF AND GYNÆCOLOGIST TO HARPER HOSPITAL; PROFESSOR OF OBSTETRICS AND CLINICAL GYNÆCOLOGY IN THE DETROIT COLLEGE OF MEDICINE; EX-PRESIDENT, AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNÆCOLOGISTS, ETC.

Removal of the cæcum is sufficiently rare, so that every case is interesting and should be reported, in order to clear up all moot questions connected with the technique of the operation and the morbid conditions requiring and justifying the operation.

It is not necessary to enter into a recital of a long list of authors and cases. Two years ago a list showed thirty-three cases operated upon, with a mortality of forty-nine per cent.; this included many fæcal fistulas of a tuberculous nature, which required difficult and complicated operation on the intestines. With our increased power of early diagnosticating cases which require an operation, and also with the bolder surgery of performing exploratory cœliotomy for diagnostic purposes only, we to-day will be able to show a better record. My case briefly is as follows:

Mr. A. E. H——, aged fifty-five, a veteran of the war of the late rebellion, was in good health all these years, except for occasional attacks of rheumatism.

In February, this year, he was taken with pain and distress in the abdomen; some days he would have a sharp attack of colic, and the next day be free from it, but there was no regularity in the attack.

Neither exercise nor variety in diet had any effect

on the attack. It would sometimes occur at night, and awake him from sleep. In the course of two months the attacks became very severe; he would vomit and show symptoms of obstruction of the bowels. The latter were moved with great difficulty, and required the use of strong cathartics or enema.

In the beginning of May the attacks would come on suddenly with excruciating pain, so that he would be doubled up and could be relieved only by hypodermic injections of half a grain of morphine; the attacks simulated those produced by gall stones.

His eyeballs were yellow, the skin was tawny, and certainly gall stones could be suspected. The pain was generally around the umbilicus, a little more to the right, about over the region of the gall ducts.

These attacks increased in frequency—sometimes he would have several a day; inability to retain food became more marked, and his bowels were completely obstructed. When I saw him, June 8th, he had not retained any nourishment longer than half an hour at a time for two weeks, nor had his bowels moved during that time.

Examination: He was a tall man, greatly emaciated; general condition good, except the soreness in the abdomen. Percussion and palpation gave no clew, owing, I think, to rigid condition of the rectus muscles; certainly there was no swelling or tumor of any kind.

I did not make a diagnosis; simply noting that there was obstruction of the bowels somewhere, complicated perhaps by gall stones or renal calculi.

I agreed to do an exploratory cœliotomy and whatever I could to relieve the condition, or, if it was beyond help, to close the abdomen.

He was prepared as usual, and on June 9th, 9 A.M., I proceeded to operate, the patient being under the influence of chloroform.

I made an incision at the outer edge of the right rectus and over the usual location of the gall duct. The abdomen open, I introduced my finger, exploring the gall bladder and duct; found everything normal, reached down to the kidney, and found no stones or any abnormal condition there. Explored downward to the region of the cæcum; I found some swelling and an abnormal condition. This evidently was the seat of the trouble, and I increased my abdominal incision downward two and one-half inches, making it altogether three and one-half inches long.

With retractors, the region of the cæcum could now be thoroughly exposed, and the following conditions were found. The small intestine at its junction with the cæcum was of ordinary size, but above it for eight inches was dilated and immensely hypertrophied, and about the size of the transverse colon. I inverted it with my finger and tried to push it through the ileo-cæcal valve, and there I found the obstruction.

The opening had been reduced to the size of a lead pencil; to overcome the obstruction, nature had kindly produced a compensatory hypertrophy, and the terrible pain was caused by the occasional efforts to empty the ileum. The cæcum was adherent but could be easily loosened; the appendix was lying along its side and adherent to it.

The only thing I possibly could do, it seemed to me, was to remove the whole cæcum and hypertrophied ileum. There was not much difficulty in ligating in sections the mesenteric attachments and removing the whole mass; that is, about nine inches of the small intestine, the whole cæcum, and about two inches of the ascending colon—my object being to remove everything that seemed diseased, as the condition might be malignant.

The small intestine was then joined to the ascending colon by the aid of a Murphy button in the usual manner; the toilet of the peritoneum was quickly made, and the abdominal incision closed with silk-worm-gut sutures, placed by the method of Kehrer, the so-called figure-of-eight interrupted ligatures. The whole operation complete took seventy minutes; the patient quickly recovered from the anæsthetic, and was nourished with beef peptonoid per rectum; nothing was allowed by mouth at first, on account of the constant vomiting he had had.

On the third day, however, he was given a little tea, coffee, and broths; but he developed such a voracious appetite that he was allowed the so-called soft diet, and by the tenth day he was allowed solid food—in fact, he seemed to eat all day and was always hungry. The tenth day the ligatures were removed and he was allowed to get up, and in two weeks he went home.

He has continued to improve, although his appetite has lessened, and a few days ago I heard that he was quite well. The Murphy button was never found. I did not expect to see it before he left the hospital, and instructed him carefully to be on the lookout for it, but he claims that he did not find it. This has happened to me on several other occasions.

I am sorry to say the microscopic examination showed the enlargement or growth to be sarcoma, and consequently we may expect its recurrence sooner or later. In the mean time, however, he is made comfortable and his life is prolonged.

A CASE OF PAROXYSMAL SLEEP, SLEEP EPILEPSY, OR NARCOLEPSY.

By HAROLD N. MOYER, M.D.,

PROFESSOR OF NERVOUS AND MENTAL DISEASES, CHICAGO CLINICAL SCHOOL

Comparatively little has been added to our knowledge of morbid drowsiness since the paper of C. L. Dana (*Journal of Nervous and Mental Disease*, vol. ii., p. 153) in 1884. In that article Dana collected forty-nine cases, which he divided into three classes —epileptoid, hysteroid, and "other forms."

In the first class the disorder seems to have some relation to epilepsy, the morbid drowsiness in some cases apparently replacing an epileptic seizure. Of this class Dana gives eleven examples, some of which are strikingly like the case which has come under my observation.

His second class, the hysteroid, include the lethargics, sleeping girls, and individuals subject to short attacks of sleep and persistent drowsiness.

Under the division "other forms" he includes those cases in which the patients seem to be the victims of a special morbid hypnosis, not allied to epilepsy or hysteria.

The predisposing cause in these various forms is a neuropathic constitution, either inherited or acquired. Sex seems to bear some relation to the form of the disorder. Of twelve patients suffering from a special form of hypnosis, nine were males and three females. Of the hysteroid sleeping states, only five were in males and twenty-one in females. Of the epileptoid, seven were in females and four in males.

The case which has come under my observation was that of a young man, twenty-two years of age. The family history is quite free from nervous troubles. Both parents are living; the father is well, the mother has asthma. No intemperance in the family. The patient developed normally, but was a very nervous child. He attended school until fifteen, and made fair progress in his studies. Through early childhood and youth he was very nervous and complained of indigestion. This appears to have been a mild neurasthenia associated with catarrhal gastritis. At puberty these troubles improved. At the age of fifteen he went to work in a large store. From that time he became somewhat intemperate, using liquor at

times immoderately. His sexual appetite developed early and was unusually strong; for several years he indulged excessively in venery. When nineteen years of age, during the summer of 1895, he became very nervous, suffered from bad dreams, and on a number of occasions had hallucinations in his waking hours. Several times he saw strangely formed animals approaching him. He says that he always recognized the appearances as imaginary.

In the autumn of 1895 he first became affected with the tendency to sleep. It began gradually; at first it was an intense drowsiness, which became so insistent that he would finally seek some place where he could lie down. If allowed to remain quiet, he would sleep about one hour and would awaken refreshed. This tendency toward sleep gradually deepened in intensity, and the attacks increased in frequency until the winter of 1896–97, at which time the trouble was most frequent. He cannot say how many times he would sleep during the day, but places the number at from twenty to fifty. The difficulty in keeping awake led to his changing employment frequently. At one time he ran an elevator, and would frequently sleep while the elevator was passing several floors. The bottom of the elevator shaft was well lighted, and as soon as he came to the opening of the last landing he always awoke. At no time is the sleep profound, and he can always be awakened by a touch or if spoken to.

At present the disorder is not so severe as it was a year ago, but he is unable to follow any occupation in consequence of it. He sleeps many times each day, it being impossible for him to sit quietly for more than a few minutes without sleeping. In riding on the street cars he is compelled to stand, that he may not be carried beyond his destination.

He frequently sleeps while standing. At these times his knees suddenly give way, but he always awakens in time to keep himself from falling. He says he always catches himself and never has fallen.

He describes certain attacks, of which he has had from four to six, which differ from ordinary sleep. On one occasion, while at table, he was seized with sudden loss of consciousness, which lasted only a few moments. His description of this attack is strikingly like that of an epileptic seizure, but I have not been able to confirm this from the description of others. For the past three and one-half years, ever since the attacks of drowsiness became pronounced, he has had none of the seizures with loss of consciousness. These attacks seemed to precede the hypnosis and to correspond with the period when he had the hallucinations, which also disappeared when the hypnotic attacks were well developed.

Examination shows a fairly well-nourished young man, without special stigmata of defective development. The heart, lungs, and kidneys are free from disorder. There are no signs of organic nervous trouble. He has never had gonorrhœa or syphilis. The appetite is fair. The knee jerks are increased; there is some tremor of the hands. There are more or less irregular contractions of all the muscles, and an occasional start or jump which closely resembles tic convulsif. Co-ordination is not impaired. Sensation is intact. The eye grounds and pupils are normal.

He has been under my care for some weeks, but nothing that has been given him has modified the chief symptoms. The possible relation of the disorder to epilepsy being recognized, he was given large doses of the bromides, but this only increased the tendency toward sleep. Full doses of ergot have likewise been of no value.

An interesting point in the history is the failure of persistent efforts to hypnotize him. When exhibited before a medical class he would try to go to sleep, but invariably failed to do so. If, however, he was placed in an adjoining room and left alone for a few minutes, he would invariably be found asleep. He does not sleep very well at night. He commonly retires early and sleeps until early morning. From that time on there is a succession of waking and falling asleep, much the same as he has observed during the daylight hours.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent).

VACCINATION CIRCULAR—HOSPITAL RELIEF—ABDOMINAL INJURIES—VENESECTION—ACROMEGALY—BLACK-WATER FEVER—"CHRISTIAN SCIENCE" AGAIN—GLASGOW UNIVERSITY—NEW STUDENTS—TUBERCULOSIS PREVENTION—CONVICTION OF WHITMARSH—SIR J. BANKS, ETC.

London, October 28, 1898.

The local government board has issued a circular to guardians on the new vaccination act. The changes in the law are pointed out. They will take effect on January 1, 1899, and remain in force until January 1, 1904. But the board has considered it desirable to bring to the notice of guardians certain matters as to which arrangements should be made in advance.

One of the most important points is that the board shows, in accordance with the decision of judges and the opinion of the law officers, that if certain notices are not complied with it under the act of 1871 will be the duty of the vaccination officers to take proceedings. At the same time it is to be remembered that two convictions will completely absolve parents from any further liability to prosecution.

The Charity Organization Society has arranged for a short course of lectures on hospital relief. The first lecture was undertaken by the secretary, Mr. C. S. Loch, who again advocated his scheme of a central board, enforcing his argument by calling attention to the acknowledged growth of the out-patient department, which is so injurious and oppressive to the general practitioner.

Sir W. Broadbent occupied the chair and supported the proposal of a central board, but said it must not be an authority imposed on hospitals from outside, but a board composed of representatives of hospitals of every kind. Mr. Loch can take all the change he finds in that reservation for the benefit of the C. O. S., which is itself outside and too anxious for a finger in the pie.

On Monday the subject of injuries to the abdominal viscera was brought before the Medical Society by Mr. Marmaduke Sheild. He related four cases in which there was no external wound, but shock and symptoms of internal injury were noted. He had opened the abdomen in each case, holding that, though the mortality in such cases must be high, the surgeon should not be deterred from operating, as he might thereby save some lives which would inevitably be lost if he did not. One of his cases was that of a boy who had been run over; a large rent in the mesentery was found and sutured. The patient recovered. In the next case, besides a torn mesentery, the jejunum was torn through. The ends were anastomosed, but the patient succumbed. In another case there was a rent in the liver; it was stuffed with gauze, but the patient never rallied. The fourth case was that of a woman who had obscure symptoms of injury to the bladder, but only some ecchymosis of that organ could be found at the operation. She did not rally, and after death a prolonged search ended in the finding of a rent near the cæcum.

Other cases of the kind were mentioned by Mr. Turner and Mr. Battle. The former had among his two of ruptured kidney giving rise to extensive extravasation of blood. Mr. Battle had operated on three cases, and remarked on the great variability of shock, which is sometimes slight in grave injury, but sometimes very severe in less serious cases.

Dr. Lucas Benham read a paper on bleeding in pneumonia, and related nineteen cases in which it had been beneficial. It is in severe cases that the benefit is most conspicuous, and the venesection must be employed in the earliest stage. This subject should have produced a lively discussion, but elicited only the remark that a practice so firmly established and for so long could hardly have been given up without good cause.

Among the exhibits at the meeting of the Pathological Society there was a skull of the acromegalic type. It was from a collection of modern Italian crania bought by the College of Surgeons in 1870. It was massive and rugged. The changes in the bones were associated with enlargement of the pituitary fossa. All distinction between tables and diploe was lost. A very characteristic feature was lengthening of the face from enlargement of the jaw and prominence of the chin. About forty per cent. of giants are said to be acromegalic, and some writers have said that all cases of gigantic stature are associated with or due to pituitary disease arising during growth. But this extreme view cannot be maintained, for there are normal giants as well as pathological, and the same may be said of dwarfs—some of whom are abnormal, *e.g.*, cretins, but others apparently healthy persons of small stature yet proportionate throughout.

Professor Koch's condemnation of quinine in black-water fever is meeting with protests from most of those who have any experience of the disease. Most of them hold that it is not a separate disease, but merely aggravated malarial fever. Consequently they hold by their well-tried sheet anchor. Some four or five years ago I remarked on this disease, in a letter to you, founded on a number of clinical records submitted to me by travellers, and I cannot help thinking the experience of the many doctors who have resided for long terms in malarious countries is to be preferred to Koch's hasty conclusion.

Mr. W. H. Crosse, F.R.G.S., who spent some nine years in Nigeria, spoke very strongly on the subject at the opening of the Physical Society of Guy's Hospital, when Sir Samuel Wilkes occupied the chair, and his remarks have been supported by others who have enforced them at intervals since. Mr. Crosse declared that those who take quinine freely do not get black-water fever, and the attacks he had suffered in his own person—some ten in number—were generally due to neglect of this precaution when harassed by attending to others more ill than himself. The disease is so grave that it would be absurd to expect all cases to be cured by quinine. Enormous quantities of the red corpuscles seem to be disintegrated by the plasmodium, and some of the patients succumb at once, as if from shock. Others die later on with suppression of urine, probably due to blocking of the kidneys. Jaundice, too, is due to the disintegration of the corpuscles. The vomiting of green bile, which is so frequent a symptom, may be more difficult to trace to its immediate cause, but an explanation of an indirect character may be expected.

Mr. Crosse holds not only that quinine does not cause black-water fever, but that it is a preventive and a curative. In his book, "Notes on Malarial Fevers," he mentioned a case of a white woman who had the disease, and in his late address he spoke of several others—quite enough to confute Koch's statement as to the comparative immunity of women, which, I think, depends (if it exists) rather on the lesser degree of exposure; but there are so few white women compared with men in certain parts that the number of cases is of course less.

Before Mr. Crosse's paper was read, Dr. Moffat, principal medical officer of the Uganda protectorate, protested against Koch's theory, and said he should have kept it to himself until he had proved it—adding that for malaria "there is only one treatment—quinine, more quinine, and yet more quinine." These are his words in the *British Medical Journal*, September 24th, since which Dr. Harford-Battersby, principal of Livingstone College, has written to the same effect. So, too, has Dr. A. W. Robson, who has had two years' experience on the west coast of Africa. So has Dr. A. P. Hillier.

The death of Mr. Harold Frederic, author and journalist, while being attended by a Mrs. Mills, "Christian Scientist," is being inquired into by a coroner's jury. Some rather remarkable evidence has been given. Mrs. Mills called once or twice and gave him "absent treatment" for a guinea a week. The doctors who had been in attendance before this woman was sent for were dismissed. They told the jury that with proper attention Mr. Frederic might have recovered. The inquiry is adjourned for the second time. The revelations of apparently educated persons thus dealing in this wretched mixture of quackery and profanity may well lessen our astonishment at the perversity of the "peculiar people," who are mostly ignorant and without education. We have had another instance of their fanaticism before the magistrates this week, in which a stableman undertook the laying on of hands and anointing, without effect.

The successor to Principal Caird, at the University of Glasgow, is the Rev. Dr. Story, professor of ecclesiastical history. He does not seem to have been a favorite while occupying that chair, and at his inaugural address in his new capacity the students interrupted so much that he told them he would not allow the university to be insulted in his presence, and left the room. I am told he holds opinions similar to those of the English high churchmen, but that is not the reason the freshmen gave him so warm a reception.

The entries at the medical schools are giving satisfaction to the teachers. More than five hundred and thirty freshmen have been registered for the London schools, and there is a further contingent from the provinces. With the present overcrowding of the profession, one may well ask: "What is to become of them all?"

Sir W. Broadbent opened a sanatorium for infectious diseases at Huddersfield on Saturday, and afterward gave an address at the Technical College on "The Prevention of Tuberculosis."

The Golder's Hill committee is to be congratulated. On Thursday the last contribution of £500 was voted by the Middlesex council. This completes the £41,000 required for adding the beautiful estate to the "lungs of London."

The British Medical Association has referred to its solicitors a statement that a pamphlet has been circulated, purporting to be a reprint of a paper in the *Journal*, issued without permission, and in which some parts have been excised and other material added in such a way as to appear as if it were a continuation of the paper.

A third interim report of the dangerous trades committee has been issued.

The second trial of Dr. Whitmarsh, on a charge of murder by producing abortion, ended on Wednesday in a verdict of guilty. The jury added a recommendation to mercy. Sentence of death was passed, and the judge said he would see that the jury's recommendation was forwarded to the proper quarters.

A bold blackmailer got hold of a list of women who had written for some "miraculous female pills." He sent them a letter, pretending to be "official," threatening arrest unless they forwarded two guineas for costs already incurred, with "a promise in writing as on oath before God" not to repeat the offence. No less than six hundred women fell into the trap set by this scoundrel, but some were sensible enough to hand his letter to the police, and he is now "wanted." A few papers have protested against such advertisements being allowed to be issued as those of this and other "female medicines," but the game goes on almost as shamelessly as ever. When will the papers be subjected to penalties for thus promoting crime?

The Vienna cases of plague naturally excite interest here on account of our connection with India, and various are the comments on the way in which the infection spread from the Pathological Institute. But you will no doubt have all the facts as early as we do.

Sir John Banks has resigned the regius professorship of medicine in the Dublin University.

Dr. Sidney Coupland is to have the vacant commissionership in lunacy—a good berth for a good man.

Mr. F. Treves has resigned the surgeoncy of the London Hospital.

SCIENCE AND TYPHOID FEVER.

To the Editor of the Medical Record.

Sir: On page 585 of the Medical Record, in an article on "The Medical Aspects of Camp Management at Chickamauga," the following statements are made: "As to treatment, there is little to be said except in a negative way. . . . None of the so-called abortive or curative methods was attempted. . . . The knowledge of the pathological history and morbid anatomy of the disease precludes indulgence in these *wild absurdities*" (italics mine). "No idea was entertained that the typhoid bacteria could be reached in the glandular structures of the submucosa of the gut."

After the word "attempted" in the above extract, the following words should have been added: "Consequently the mortality was maintained up to the old standard."

It may well be asked, How is it that so many reports are made, in a number of journals, of the successful treatment and the great lessening of mortality by indulging in these wild absurdities? It is true that the principal factors in the propagation of typhoid are the bacilli which find a lodgement in Peyer's patches, setting up an inflammation, the products of which are known as ptomains, or, as they are sometimes called in typhoid, typhotoxins. These ptomains are constantly being generated and as constantly being absorbed; to kill these before absorption, to counteract the effect on the blood if absorbed, by a species of catalysis, is the essential feature of the antiseptic treatment. Science says this cannot be done; nevertheless, in many parts of the country the unscientific but intensely practical country practitioner shortens the course of the disease and adds wonderfully to the record of cures. To use the words of one of the most accomplished physicians of California: "These men care nothing about phagocytes—the science of bacteriology gives them no anxiety; but they do understand the importance of restoring restrained secretion, they know well how to open the great floodgates of waste, stimulate the emunctories, get rid of poisonous and cacoplastic material, and so leave disease nothing to fatten on." While all due honor should be given to the painstaking and conscientious men of science for their many discoveries of untold value, the fact must not be lost sight of that occasionally a theory, based solely on research, must give way or be modified when subjected to the test of actual experience. Again, had there been in the army and in the hospitals more of these unscientific but earnest and practical men, and fewer with a "pull," the death record so far as typhoid was concerned would have been lowered by a tremendous percentage.

W. E. Hughes, M.D.

Rockford, Ohio.

New Instruments.

A CONVERTIBLE AND PORTABLE BED BATH.

By CONSTANTINE I. MacGUIRE, M.D., L.R.C.S.I.,
NEW YORK,
VISITING PHYSICIAN, ST. VINCENT'S HOSPITAL; CONSULTING PHYSICIAN TO CITY HOSPITAL.

Since the Brand treatment of typhoid fever was introduced to the profession, it has steadily grown in popularity and the mortality has as steadily decreased. I have for a number of years adopted the treatment in hospital and private practice; and, though the results have been gratifying, many objections presented that at times made recourse to the bath system of treatment difficult, hazardous, or impossible. In the first place, the patient and the patient's friends, on the introduction of the bathtub into the sick-room, are always somewhat alarmed. They only thus realize clearly the treatment about to be adopted, and frequently decline, refusing what they consider heroic and extreme measures. Passing this over, we are confronted with the next and most material difficulty—the lifting of the patient out of bed and placing him in a bathtub and returning him again to bed. This entails a great expenditure of strength of the patient; and we should bear well in mind that we are dealing with a heart worn out by fever and toxæmia. To my mind this has frequently seemed a hazardous proceeding. We constantly impress on our nurses that under no circumstances should the patient be permitted to help himself, to sit up in bed, or discharge any of nature's functions or take nourishment except in the supine position—so great is our dread of inducing heart failure by any avoidable exertion. How much greater the risk of collapse in the administration of the bath!

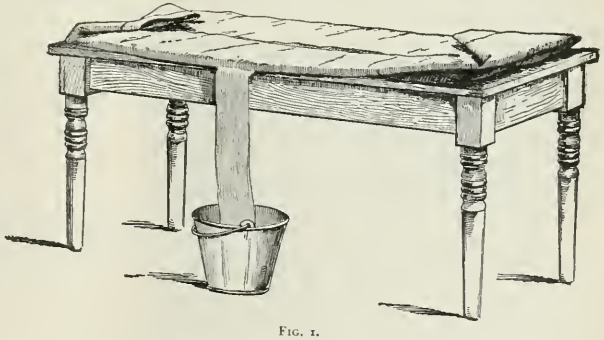


Fig. 1.

The removing of a patient (adult) of average weight from bed to bathtub and back requires the assistance in most cases of three or four people; and to repeat this treatment several times in twenty-four hours entails an expense that can be borne easily in few families, in

some not at all, and even in hospital, when cases of typhoid are numerous, with great difficulty. As a substitute for the bathtub the sponge bath and cold pack in many cases have worked well, but for accuracy of technique do not compare with the tub.

Some two years ago I introduced in St. Vincent's Hospital and have used since what I call a portable collapsible bathtub, which I believe presents all the advantages without the disadvantages of the ordinary tub. When the tub, which is made of a rubber sheet,

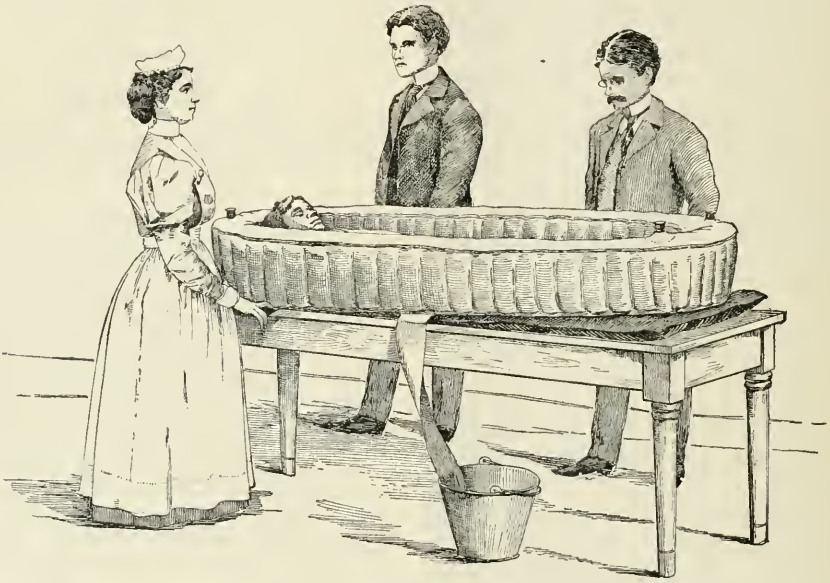


Fig. 2.

is not in use (Fig. 1), its sides may be folded down, the air chamber or chambers being deflated, and in that condition may be placed upon the bed upon which the patient is lying, and the patient placed therein without removing him from the bed or making an appreciable elevation of his person. The air chamber may then be inflated by an ordinary bicycle pump or from a cylinder of condensed air. This inflation can be effected from a cylinder in less than one minute. The effect is to raise the sides of the tub and hold them firmly in the erect position, capable of withstanding any water pressure from the inside of the tub. Fig. 2 shows the tub in action. In the bottom of the tub and about midway of its length, at the point where the greater portion of the weight of the patient will be supported, on either side are openings to which are connected discharge tubes. These discharge tubes are capable of emptying the tub in less than one minute.

The deflation of the tub is effected by four capped valves on the side, which when opened allow the air to escape, and the sides collapse in thirty seconds. At the termination of the bath a dry sheet can be placed over the collapsed tub and the patient made comfortable, or the convertible tub can be removed in the same manner that an exchange of sheets is made by a trained nurse.

It can be readily seen that the substitution of the convertible bed bathtub completely removes the dangers incident to the lifting of the patient in and out of bed, does away with the necessity of more than one nurse, and reduces to a minimum the horror and dread of patient and relatives for the ordinary crude bath-tub.

120 East Sixtieth Street.

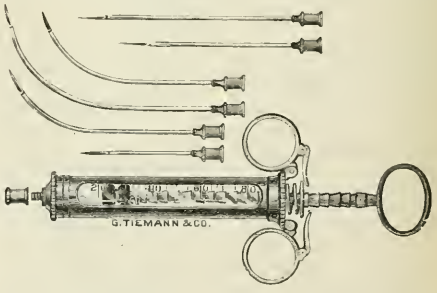
THE RATCHET SYRINGE: AN IMPROVED SYRINGE FOR SCHLEICH'S INFILTRATION ANÆSTHESIA.

By C. G. LEO-WOLF, M.D.,

Niagara Falls, N. Y.

In using Schleich's infiltration anæsthesia in quite a number of cases, I noticed one point which calls for an improvement in the apparatus. When injecting the solution with an ordinary syringe into dense tissues —such as the palma manus, the periosteum, or into the inflamed tissue surrounding a common boil—it requires a considerable force to overcome the resistance offered by these tissues, and the operator risks breaking the needle rather than inject the few drops necessary." With the view of overcoming this difficulty there is one syringe made, which is described by Braun in the *Centralblatt für Chirurgie*, May 1, 1897, page 481; but this necessitates the use of both hands, which I consider a great disadvantage.

My improved syringe is shown in the accompanying illustration, which explains its construction better than



a lengthy description. By pressing the rings down against the syringe, the two levers are freed from the cogs and the piston slides freely up and down, as in any ordinary syringe. If a greater resistance is to be overcome, then by raising the two fingers in the rings the levers are made to depress the cogs on the piston,

and when slightly released will slide over the next ones and have the next grip. This can be done without changing the hold on the instrument, with one hand and without loss of time.

The syringe is fitted with six needles of different length and curvature, and three glasses containing tablets to make, with one hundred cubic centimetres of distilled water each, the three solutions of Schleich.

A NEW CENTRIFUGE TUBE.

By JOSEPH E. FULD, M.D.,
NEW YORK.

The difficulty with the ordinary centrifuge tube, now in use, is that when the fluid has been centrifuged and the sediment obtained, the mere introduction of a pipette usually suffices not only to disturb the sediment but even to annul the work of the centrifuge.

The object of my tube is to provide a simple device whereby the lowest stratum of the sediment can be

removed intact, and in sufficient quantity for microscopical examination. The accompanying illustration represents the instrument. It is a glass tube, narrowed toward one extremity (*A*), and is provided with a snugly fitting rubber stopper. The upper portion (*B*) is wide at its extremity and somewhat constricted, so that the pulp of the finger, fitting over it, will form such an effective stopper that when the cork at (*A*) is withdrawn, the contents of the tube will be held therein by atmospheric pressure. The sediment which has collected upon the cork is utilized by lightly touching a glass slide in two or three places, and covering each drop with a cover glass. The tube can readily be cleansed by allowing water to run through it.

169 East Eighty-Second Street.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending November 12, 1898:

	Cases.	Deaths.
Tuberculosis	181	154
Typhoid fever	71	21
Scarlet fever	108	5
Measles	98	4
Diphtheria	130	22
Laryngeal diphtheria (croup)	14	10
Cerebro-spinal meningitis	0	6
Chicken-pox	13	0

History of Circumcision.—Fresnel, in an article published in the *Revue des Deux Mondes* in 1838, describes as an invariable wedding-ceremony among the Arabs of Djezan a procedure which, it would seem, would hardly tend to make marriage popular. This operation consists in a most extensive circumcision, which is performed in the presence of the assembled wedding-guests as well as the bride herself. The victim is turned over to the holy operator, who proceeds to remove not only the prepuce but the entire skin of the penis as far back as the scrotum. "Should the happy bridegroom betray any sign of weakness or allow as much as a sign or a groan to escape him, or even allow the muscles of the face to betray the fact that he is not immensely enjoying the occasion, the bride-elect at once leaves him for good, saying that she does not wish a woman for her husband." This operation is naturally frequently fatal, so that the Arabs might be "likened to those spiders which perish during their first and only act of copulation, and are immediately devoured by the female, the difference being that the spider's death is probably a happy one, which can scarcely be said of the Arab's."

The Duke of Argyll on the New Vaccination Bill in England.—The Duke of Argyll, in answer to a correspondent who drew his attention to the statement of an antivaccinationist to the effect that the depopulation of the Highlands to which the duke had referred in a previous communication had been caused, not by small-pox, as he had contended, but by the action in the past of the duke's ancestors, writes as follows: "When Wortley Montagu brought inoculation from Turkey, the Highlanders were sensible enough to adopt it, and from that date the plague was stayed. Vaccination speedily followed, with the result that I have never even heard of small-pox in the population where it used to be so destructive. This is evidence which no quibbling can dispose of. Never mind what you hear of accusations against me. There are a great number of men who can't argue, but are always ready to throw rotten eggs instead, especially against people in my position, when they venture to confront some popular delusion. In Scotland, I am happy to say that our people are more intelligent. I have heard of no difficulty. Perhaps a few outbursts of small-pox, like that of Gloucester a few years ago, will drive it into the heads of even the 'plurality of blockheads' that one of the greatest triumphs of medical science is a providential gift, not to be thrown away. Add to that the principle which has been confirmed by the recent discovery of new immunities to be secured by new kinds of inoculation for other diseases, and vaccination no longer stands alone." From the tenor of this epistle it would seem that the fighting-blood of MacCullum More, the chief of all the Campbells, is thoroughly roused.

Hermaphroditism a Variety of the Female Sex.—Virchow's experience has convinced him that on the whole hermaphrodites belong to the female sex. He has never discovered a testis in any hermaphrodite, although it is a difficult matter to decide exactly the nature of the seminal gland, upon which alone the actual question of the sex depends. There is only one authentic case on record (Obolenski's) in which both testes and ovaries were present.—*Klin.-therap Woch.*

Continence in the Marital Relations.—We, who work in gynæcology, who observe closely, will frequently benefit our patients by sending them from home for a few months, and giving to their husbands a course of lectures before the wife's return. A woman who is doing the work of her family and suckling an infant at the same time needs rest; she needs sleep at nights; she is in no condition to enjoy sexual congress, and it is our duty, as medical men, to tell her so. They look to us for protection in this line—who but we can speak in her behalf? Who but we can point out to her the dangers of making a good woman old before her time? When I go into a house and see a

husband, sleek, fat, jolly, and hearty, and the wife pale, anæmic, and nervous, if she has no definite disease, I can easily guess the cause—incomplete coition. He is killing her. If she has a disease he should let her alone. I do not desire to be understood as advocating continence among married people, but I do say, and from professional observation maintain, that more women are suffering from an overdose of married relation than from almost any other cause. Watch the difference in these patients when they have had rest. Look at the rosy-cheeked young widow, whose step is as elastic as that of a girl in her teens. See the bloom of health upon the cheek of the little wife who has returned from her summer vacation. Note the wives of diabetic husbands who have lost desire. Notice the improved appearance of the deacon's wife while you are treating her liege lord for "gravel," contracted in the camp-meeting lavatory.—Dr. W. B. Pigg, *Tri-State Medical Journal*, September, 1898.

The Sewage of Paris.—The sewage of Paris, says *Revue Pratique des Travaux Publiques*, is conveyed by gravitation to Clichy, where part of it is distributed over a farm of 2,471 acres. An area of some 12,000 acres would be required to deal with the effluent of 17,660,000 cubic feet, which has daily to be pumped and got rid of. Grass is the crop that will stand the greatest quantity of sewage, taking 2,430,000 cubic feet on an acre yearly; lucerne will thrive on 1,790,000 cubic feet. Beet roots, from which sugar is made, will take only 200,000 cubic feet.

This is What it is.—A footnote printed upon the diplomas issued by the school of osteopathy in Missouri defines osteopathy as follows: "Osteopathy is the science of healing without the use of drugs, and is the art of manipulating the various parts of the body on the purely mechanical principle in the reduction of dislocations and fractures and in the removing of obstructions to the current force of fluids of the body, thereby assisting nature to maintain a healthy action of all the functions of the system."

The Danger Signal to Divers.—Dr. James Galbraith Connal, assistant surgeon to the Glasgow Ear Hospital, says: "It is well known that it is essential to the healthy function of the ear that the pressure on both sides of the tympanic membrane should be equal. This is accomplished through the Eustachian tube. The evil influence of sudden and great changes of pressure can be neutralized by the act of swallowing, or by performing Valsalva's experiment. It is interesting to note that divers instinctively adopt the method of swallowing to equalize the pressure of air on both sides of the tympanic membrane. When a diver—in descending the ladder—feels the pressure of the air in the ears, he swallows saliva. If the 'ears crack' he finds he can go down to a considerable depth without discomfort, though the act of swallowing may have to be repeated once or twice before he reaches the bed of the river. If the ears will not 'crack' on swallowing, then he ascends a few steps of the ladder and tries again, but if he fails he must come to the surface. As a rule, divers refuse to go on duty when they have a 'cold,' as they know that there is a great danger of injuring the ears. On this occasion the patient went on duty though he knew the risk he was incurring. The 'cold' and slight sore throat from which he was suffering would probably lead to a swelling of the mucous membrane of the Eustachian tube, and render him, when exposed to sudden and great increase of pressure of air in the external auditory canal, more liable to the rupture of the tympanic membrane."

Stuttering.—Liebmann maintains that stuttering consists in a rushing together of the consonants, and consequently his method of treatment has for its object the teaching of the relative significance of the vowel and consonant sounds. The patient is made to speak sentences with prolonged vowels and short consonants, so that even at the first lesson many sentences are spoken easily and fluently. The psychic effect is soon apparent, the patient regaining confidence in his ability to speak plainly, and the result is excellent in a very short time. This method can also be employed with young children. Stuttering may be caused by the infectious diseases, injury to the head, imitation of other children, or it may be due to heredity. Its more frequent occurrence in males than in females is to be explained by the greater motility of all the voluntary muscles in women than in men, the tongue included.—*Der Kinder-Arzt.*

Difficult Defecation in Infants.—It is generally recognized as a fact that infants and young children strain at stool. The infant and young child strain at stool because of the imperfect development of the anatomic features concerned in the mechanism of defecation. These are: (1) The infant's lower gut is muscularly deficient. (2) Its mobility within the abdomen is obstructive to defecation. (3) The rectal valves are obstructive. (4) The infant's anus, not being sufficiently expansible, is also obstructive to defecation.—*Pediatrics.*

Hæmatemesis and Hæmoptysis: Differential Diagnosis.—

Hæmatemesis.	*Hæmoptysis.*
1. Previous history points to gastric, hepatic, or splenic disease.	1. Cough or signs of some pulmonary or cardiac disease precede, in many cases, the hemorrhage.
2. The blood is brought up by vomiting, prior to which the patient may experience a feeling of giddiness or faintness.	2. The blood is coughed up, and is usually preceded by a sensation of tickling in the throat. If vomiting occurs, it follows the coughing.
3. The blood is usually clotted, mixed with particles of food, and has an acid reaction. It may be dark, grumous, and fluid.	3. The blood is frothy, bright red in color, alkaline in reaction. If clotted, rarely in such large coagula, and mucopus may be mixed with it.
4. Subsequent to the attack the patient passes tarry stools, and signs of disease of the abdominal viscera may be detected.	4. The cough persists, physical signs of local disease in the chest may usually be detected, and the sputa may be blood stained for many days.

—Osler.

Ehrlich's Diazo Reaction in Urine.—Krokiewicz, after an examination of eleven hundred and five different cases, in which he made sixteen thousand one hundred and sixty-seven tests for Ehrlich's diazo reaction, draws the following conclusions: In diseases of the kidneys, not due to tonic medicaments containing coloring matters, it is never found. In carcinoma of the stomach, liver, œsophagus, rectum, pancreas, and uterus the reaction is negative; but in primary carcinoma of the ovaries it is positive. When found in pulmonary tuberculosis the disease runs a short and fatal course. This rule holds good also in the incipient stages. Albuminuria and intestinal ulcers in phthisis have no effect on the reaction. The test is negative in phthisis when complicated with nephritis. In tuberculosis of glands or mucous membranes the reaction is occasionally found. It is constant in miliary tuberculosis. In typhoid it is found in the mildest attacks in the first and second periods of the disease. As long as the diazo reaction is present in urine, typhoid patients cannot be considered convalescent. If in convalescence of typhoid the reaction sets in, it is generally a sure sign of a relapse. The author recommends the test on account of the prognostic value in typhoid and tuberculosis.—*Wiener klinische Wochenschrift.*

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Original Articles.

MANSLAUGHTER, CHRISTIAN SCIENCE, AND THE LAW.

BY WILLIAM A. PURRINGTON,

COUNSELLOR AT LAW,

NEW YORK.

THE recent death of Mr. Harold Frederic under the treatment of a Christian scientist, and the latter's indictment by an English jury, have renewed the discussion by professional and lay journals of what is and what should be the bearing of the law upon such cases.

The New York *Times*, of which he was correspondent, writes editorially of "Faith-Cure Murders;" *The Sun*, of "Manslaughter by Christian Science." The current law journals comment upon the case. Unfortunately such instances are neither modern nor rare.

Coincidently with Mr. Frederic's death from pneumonia in England, the newspapers also report the deaths of Messrs. Kershaw in Tacoma, and McDowell in Cincinnati, and Mrs. Brown of Washington; the first of pneumonia, the second of typhoid fever, the last of an unnamed malady—all the diseases being complicated with Christian science. It is only Frederic's prominence as a journalist and fiction writer that brings his case nearer home to the multitude.

The ordinary quack is content to lay claim to some special skill or knowledge in the use of natural methods or remedies. Thus in February, 1806, one John M. Crous induced the same legislature of New York that in the following April chartered the existing county and State medical societies to authorize by special act the purchase for $1,000 and publication in the State papers of his "perfect and infallible remedy and cure for the hydrophobia or canine madness." And a wonderful remedy it was.[1]

[1] Here is the prescription, and it certainly seems adequate to put an end to hydrophobia or any other malady:

"First: Take one ounce of the jawbone of a dog, burned and pulverized, or pounded to fine dust.

"Secondly: Take the false tongue of a newly foaled colt; let that be also dried and pulverized; and,

"Thirdly: Take one scruple of verdigris, which is raised on the surface of old copper by lying in the moist earth; the coppers of George I. or II. are the purest and best. Mix these ingredients together, and if the person be an adult or full grown, take one common teaspoonful a day, and so in proportion for a child according to its age. In one hour after take the filings of the one-half a copper of the above kind, if to be had; if not, then a small increased quantity of any baser metal of the kind; this to be taken in a small quantity of water.

"The next morning, fasting (or before eating), repeat the same as before. This, if complied with after the biting of a dog, and before the symptoms of madness, will effectually prevent any appearance of disorder; but after the symptoms shall appear a physician must immediately be applied to, to administer the following, viz.:

"*Three* drachms of the verdigris of the kind before mentioned, mixed with half an ounce of calomel, to be taken at one dose. This quantity the physician need not fear to administer, as the reaction of the venom will then, diffuse through the whole system of the patient, neutralize considerably the powerful quality of the medicine; and,

"Secondly: If in four hours thereafter the patient is not completely relieved, administer four grains of pure opium or one hundred and twenty drops of liquid laudanum.

"N. B.—The patient must be careful to avoid the use of milk for several days after taking any of the foregoing medicine.

"JOHN M. CROUS."

In the following year an act (ch. 104, ll. 1807) passed, prohibiting unlicensed practice of medicine; with the proviso, however, that it should not be construed to debar any one from using, or applying for the benefit of the sick, roots or herbs the growth or product of the United States. This exception favored at once the principle of protection to the industry of home herbs and the teachings of the Thomsonian or botanic school of medicine, founded upon the simple, obvious theory that mineral remedies are injurious because, their nature being to remain in the earth, they tend to drag man down to the grave; while herbs, having by nature an upward, skyward thrust, tend, on the contrary, to the advancement of those into whose midst they penetrate.

This system, once as popular as Christian science, furnished the leading American case on manslaughter by medical malpractice, that of Commonwealth *v.* Thomson (6 Mass. 134). It there appeared that Samuel Thomson, founder of the system, undertook to cure "all fevers, whether black, gray, green, or yellow." His staple remedies were "coffee," so-called, "well my gristle," and "ram-cats." Being summoned on January 2, 1809, to attend Ezra Lovett, ill of "a cold," he ordered a fire built, put Lovett's feet on a stove of hot coals, wrapped him in a blanket, and, with a powder given in water, "puked" him—to use the simple language of the day—violently thrice within half an hour, meantime administering copiously the warm "coffee." He then put Lovett to bed, and sweated and "puked" him pretty steadily for three days, the patient growing weaker and weaker, until, poor soul! he could puke no more. Then Thomson asked "how far down the medicine had got," and, Lovett indicating his chest, the quack said that the medicine "would soon get down and unscrew his navel." On the third day the patient "lost his mind and went into convulsions," which condition lasted until the eighth day, January 10th, when he died. The "coffee" proved to be a decoction of marshrosemary and the bark of the bayberry bush; the powder was Indian tobacco or *Lobelia inflata*. There was no evidence that defendant had killed any one else; on the contrary, there was testimony of benefit in one case from his treatment. The court, therefore, did not put him to his defence; but, ruling that the commonwealth had failed to make out a case even of manslaughter, charged the jury to this effect: Deceased, beyond reasonable doubt, lost his life by defendant's unskilful treatment. But there could be no murder, unless the prisoner was wilfully regardless of his social duty and determined on mischief, of which there was no proof; on the contrary, his intent was to cure. Neither could there be manslaughter; for, although defendant's ignorance was very apparent, nevertheless, if he honestly intended to cure, he could not be guilty of that crime on account of death unexpectedly ensuing from his treatment, *unless he was engaged in an unlawful act;* and there was no law in Massachusetts forbidding any man, honestly intending to cure, from prescribing for a sick man with the latter's consent. The court cited Lord Hale as authority for the proposition that, "if a physician, whether licensed or not, gives a person a potion, without any intent of doing him any bodily hurt, but with

intent to cure or prevent a disease, and, contrary to the expectation of the physician, it kills him, he is not guilty of murder or manslaughter;" and, accordingly, laid down this law for the case:

"The death of a man, killed by voluntarily following a medical prescription, cannot be adjudged a felony in the party prescribing, unless he, however ignorant of medical science in general, had so much knowledge or probable information of the fatal tendency of the prescription that it may be reasonably presumed by the jury to be the effect of obstinate, wilful rashness, at the least, and not of an honest intention and expectation to cure."

The court further said that if the solicitor-general had proved, as he promised to do in his opening, that Thomson had killed others by his treatment, it would have been left to the jury to say whether on the whole evidence they would sustain the charge of manslaughter; which they might justly have done if they had found that defendant acted from "obstinate rashness and foolhardy presumption, although without intent to do Lovett bodily harm;" "*for it would not have been lawful for him again to administer a medicine of which he had such fatal experience.*" Upon this reasoning Thomson was acquitted; and his case having proved, as a precedent, a strong shield for manslaughtering charlatans, by establishing what has been called the humane American rule as contrasted with the strict rule of common law, it is well to state succinctly the reasons why he escaped conviction, viz.: (1) because there was no statute in Massachusetts prohibiting medical practice by the ignorant and unlicensed; (2) because there was no proof that Thomson (*a*) knew his treatment to be dangerous or (*b*) had any other intent than to cure in good faith.

In 1842 the question arose in New York, upon an application for a bill of discovery, in Marsh *v.* Davison (9 Paige 580), whether it was slanderous to have said of complainant that he was guilty of malpractise as a cancer doctor and had killed a woman in Schoharie. Davison not being licensed to practise, the court held that—inasmuch as he might be guilty of manslaughter, for that reason, if the patient died under his treatment—the words might be slanderous.

It thus appears that—even accepting the benign rule of Thomson's case, which, as we shall see presently, was ill stated—wherever a statute makes the unlicensed practice of medicine a misdemeanor, if death result from the treatment of a non-licentiate he is guilty of manslaughter at least, no matter how honest his intent. This is the rule of common law and of the New York penal code, which defines as manslaughter the killing of one human being by the act, procurement, or omission of another, without design to effect death, by a person engaged in committing or attempting to commit a misdemeanor affecting the person or property either of the person killed or of another.

In 1844 the case of Rice *v.* The State (8 Mo. 561) was decided in Missouri. Rice, a Thomsonian, undertook by the same methods used on Lovett to cure Mrs. Keithley of sciatica. She had not been so well for years as when he began to treat her, and was within six weeks of giving birth to her fourth child. Under his system she fell into premature labor and died within about ten days. He was convicted of manslaughter; but the appellate court, adopting the rule in Thomson's case, the facts being substantially the same, reversed the judgment.

In 1881 another case arose, in Iowa, State *v.* Schulz (55 Ia. 628). Schulz treated a sick woman by acupuncture and an irritating oil, according to the system of Herr Baunscheidt, who, having been much benefited by the bitings of small insects, sought to give the world, for a consideration, a simulacrum of his experience. Defendant admitted that he did not know the composition of the oil, that being Baunscheidt's secret. The patient died. Schulz claimed that if he had not been interfered with he could have helped her, and produced twenty-three witnesses to testify that Baunscheidtismus, as administered by him, had benefited them. Schulz was convicted, but the appellate court reversed the judgment, following the cases of Thomson and Rice, and expressed this conclusion: "The interests of society will be subserved by holding a physician civilly liable in damages for the consequences of his ignorance, without imposing upon him criminal liabilities when he acts with good motives and honest intentions." The adoption of this theory by the New York statute of 1844 enabled quackery, in the words of Beardesley J., to "boast its triumphant and complete establishment by law" (Bailey *v.* Mogg, 4 Den. 60). And the people of Iowa, instead of adhering to it, have passed, since the Schulz case, a law forbidding medical practice to the unlicensed.

Notwithstanding these acceptances of the rule in Thomson's case by other jurisdictions as sound law, the supreme court of Massachusetts, wherein it originated, has since held, in Commonwealth *v.* Pierce (138 Mass. 165, A.D. 1884), that the accuracy of its report was doubtful and its law open to criticism. The facts in Pierce's case were these: Defendant held himself out as a physician. There was no more law in Massachusetts to prevent him from so doing in 1884 than there had been to prevent Thomson's like pretension in 1809. Being called to a sick woman, he caused her, she consenting, to be kept for some three days swathed in flannel underclothing, saturated with kerosene. Under this treatment she died in great misery. There was evidence in the case that in some instances similar treatment by defendant had resulted favorably, but also that in one it had burned and blistered the flesh, as in the case of deceased. Defendant's counsel at trial asked the court to charge, following the rule in Thomson's case, that defendant could not be convicted unless it were proven beyond reasonable doubt that death resulted from his treatment and that he had such knowledge or probable information of the fatal tendency of his prescription as to justify the jury in presuming that death was the effect of his obstinate or wilful recklessness, and not of an honest intent and expectation to cure. This request was refused, defendant was convicted, and his conviction affirmed by the appellate court, who, by Holmes J., said that the language of Thomson's case relied upon by defendant—viz., that "to constitute manslaughter the killing must have been a consequence of some unlawful act. Now there is no law which prohibits any man from prescribing for a sick person, with his consent, if he honestly intends to cure him by his prescription"—was ambiguous and wrong, if it meant "that the killing must be the consequence of an act which is *unlawful for independent reasons apart from its likelihood to kill.*" "Such," continued the court, "may once have been the law; but for a long time it has been just as fully, and latterly, we may add, much more willingly, recognized that a man may commit murder or manslaughter by doing otherwise lawful acts recklessly, as that he may by doing acts unlawful for independent reasons, from which death accidentaliy ensues." Thomson's case, it was said, did not intend to lay down new law, but cited and meant to follow Lord Hale, whom it had taken too literally, since his lordship admitted that other persons might make themselves liable by reckless conduct (1 P. C. 472); and why not a physician as well?

As to what constitutes criminal recklessness in such cases, the court said substantially that the standard is not gauged by the actor's belief or idea of danger, but by common experience. If the thing done "is generally supposed to be universally harmless and

only a specialist would foresee that in a given case it would do damage, a person who did not foresee it and who had no warning would not be held liable for the harm. . . . The use of the thing must be dangerous according to *common experience*, at least to the extent that there is *a manifest and appreciable chance of harm from what is done, in view either of the actor's knowledge or of his conscious ignorance. . . . Common experience is necessary to the man of ordinary prudence, and a man who assumes to act as the defendant did must have it at his peril.* . . . The defendant knew he was using kerosene. The jury have found that it was applied as the result of foolhardy presumption or gross negligence, and that is enough. . . . Indeed, if the defendant had known the fatal tendency of the prescription, he would have been perilously near the line of murder." The rule laid down in this carefully reasoned case must commend itself to prudent men; for it really amounts only to this—that if one unversed and unskilled in medical science and practice undertakes, nevertheless, the cure of a patient, and in so doing uses remedies or adopts a treatment—whether positive or negative ought to make no difference—from which there is a manifest and appreciable chance of harm according to common experience, he shall be held liable for his recklessness and shall not be excused by the innocence of his intention. And certainly when part of the treatment adopted is the *exclusion of proper treatment*, this is just as harmful as if positively injurious methods were adopted. It is just as much homicide to cause death by starvation by keeping food from the victim, as to use an active poison.

How does this principle apply to "Christian science," "faith cure," or any eccentric treatment of the sick—not excluding voudoo or the "scandal cure"[1]—that by operating strongly on the mind may restore the lost equilibrium? Is the pursuit of any of these methods "practice of medicine"?

While the ordinary quack, who, as has been said, pretends only to extraordinary human skill or knowledge, is, therefore, generally held to be a practitioner of medicine, Christian scientists, who go further and pretend to procure for lucre divine intervention by their prayers, contend that in thus offering to heal the sick, although for hire, they are not practising medicine, but observing religious rites, and are therefore protected in their practices by constitutional safeguards. We are thus brought to consider what is the "practice of medicine." The answer to this query must depend in most instances upon the words of the statute and the peculiar circumstances of the case. In the New York case of Smith *v.* Lane (24 Hun, 632, A.D. 1881), plaintiff, apparently a masseur, sued for agreed fees which defendant refused to pay on the ground that plaintiff, not being licensed to practise medicine, could not recover compensation for his treatment, which, as the opinion of the court recites, "consisted entirely of manipulation with the hand. It was performed by rubbing, kneading, and pressure." The court said:

"The practice of medicine is a pursuit very generally known and understood, and so also is that of surgery. The former includes the application and use of medicines and drugs for the purpose of curing, mitigating, or alleviating bodily diseases; while the functions of the latter are limited to manual operations, usually performed by surgical instruments or appliances. . . . To allow incompetent or unqualified persons to administer or apply medical agents, or to perform surgical operations, would be highly dangerous to the health as well as the lives of the persons who might be operated upon, and there is reason to believe that lasting and serious injuries as well as the loss of life have been produced by the improper use of medical agents and surgical instruments or appliances. It was the purpose and object of the legislature by this act to prevent a continuance of deleterious practices of this nature, and to confine the uses of medicine and the operations of surgery to a class of persons who, upon examination, should be found competent and qualified to follow these professional pursuits. *No such danger could possibly arise from the treatment to which the plaintiff's occupation was confined. While it might be no benefit, it could hardly be possible that it could result in harm or injury.*

"And for that reason no necessity existed for interfering with this pursuit by any action on the part of the legislature. It may be that credulous persons would be deceived into the employment of the plaintiff, and in that manner subjected to imposition. But it was no part of the purposes of this act to prevent persons from being made the subjects of mere imposition."

Either the italicized words are superfluous or they contain an implication that if the treatment, in the court's opinion, had been capable of causing injury like improper medical treatment, the judges would have classified it in the same category.

In Eastman *v.* State (10 N. E. 97), an Indiana case, the court said, on the other hand: "It is the purpose of the statute to prevent persons, who do not possess the necessary qualifications to practise medicine or surgery from inflicting injury upon the citizens by undertaking to treat diseases, wounds, and injuries." And again: "The State has an interest in the life and health of all its citizens, and the law under examination was framed, not to bestow favors upon a particular profession, but to discharge one of the highest duties of the State—that of protecting its citizens from injury and harm." In People *v.* Phippin (70 Mich. 6), the defendant was held to have practised medicine, on proof that he held himself out as "Dr. W. W. Phippin, magnetic healer," had attempted to cure the sick, and in the case of a child's death had certified the cause to be "canker, sore mouth. Duration of disease: June 3 to July 22, 1887." In Bibber *v.* Simpson (59 Maine 181), a clairvoyant who gave remedies was said to be practising medicine. So also in Nelson *v.* Harrington (72 Wis. 591). And in New York, De Leon, who prescribed for a child, drawing its horoscope and giving some rhubarb, was convicted of illegal practice of medicine. The administration of electricity has also been held to constitute medical practice—Davison *v.* Bohlman (37 Mo. App. 576).

The Ohio statute provides that: "Any person shall be regarded as practising medicine or surgery, within the meaning of this act, who shall append the letters M.D. or M.B. to his name, or for a fee prescribe, direct, or recommend for the use of any person any drug or medicine *or other agency* for the treatment, cure, or relief of any wound, fracture, or bodily injury, infirmity, or disease." That seems very broad; but in the case of Eastman *v.* State (6 Ohio Dec. 296), it was held, in January, 1897, that a "graduate of the school of osteopathy of Kirkville, Mo.," was not practising medicine by kneading and manipulations, using only his hands and no medicines. The court cited Smith *v.* Lane, and held that the words "any other agency" were too vague and were limited by the particular words "drug or medicine."

The New York statute does not define medical practice. Such a definition was framed in the draft of the act of 1887, but stricken out because a certain senator,

[1] I knew once of a *malade imaginaire* who for years had drifted feebly from bed to lounge and back again. Physicians were in vain. One day a friend called and said that the newspapers had gotten hold of a bit of history that would interest the nations on the following Sunday. The patient leaped from the lounge, took a cab to the steamer office, and by Sunday was on the ocean. This is the "scandal cure."

who died shortly afterward, declared that it would include an eccentric healer who had saved him from the grave. The definition was yielded to save the bill.

The Nebraska medical act defines as a practitioner, any one "who shall operate on, or profess to heal, or prescribe for, or otherwise treat any physical or mental ailment of another."

Under this statute arose, in 1894, the case of State *v.* Buswell (40 Neb. 158). The defendant, charged with unlawful practice of medicine, claimed to be a Christian scientist, graduated from the Metaphysical College of Mrs. Mary B. G. Eddy, of Boston. Defendant offered testimony to cures wrought by him in cases of rheumatism, rattlesnake bite, pneumonia, and scarlet fever—the last in the case of a child, four years old. He testified that in eighteen months he had treated about one hundred persons, of whom only two had died. The accuracy of his diagnosis was not in issue. He testified that the text-books of the Christian Science Church are the Bible and Mrs. Eddy's work, "Science and Health." He denied that in a medical sense he treated physical or mental ailments, saying: "I understand with God's laws, and not mortal man's." Questioned as to the privilege of patients or parents to call in medical aid, he said: "We believe that every one has a right to express their wish, and it is always understood that if they prefer some other treatment, or some other mode, or some one else to aid them, it is their privilege. We always do that. It is taught in our text-books. *We never give any medicine; that is entirely contrary to the teaching of Christian Science.*" And his counsel said: "The defendant, and those of the same faith with him, *believe as a matter of conscience that the giving of medicine is a sin;* that it is placing faith in the power of material things, which belongs alone to Omnipotence. To the Christian scientist, it is as much a violation of the laws of God to take drugs for the alleviation of suffering or the cure of disease, as for a Methodist clergyman to take the name of his God in vain to relieve his overwrought feelings."

Being asked if he took pay from his patients, he said: "As a rule I do not. We tell them we leave the question to them and God. . . . Jesus says the laborer is worthy of his meat, and we expect that those whom we spend our lives for to remunerate us for it. *If they are not willing to part with the sacrifice themselves, it is not expected that those should reap the benefit.*" Considering that defendant described his treatment as one of prayer; this intimation that the answer to prayer would be contingent on the payment of the scientist's fee apparently seemed rather blasphemous to the court, who very aptly cited two cases from one of the science's text-books, the Bible—the former, that of Simon the sorcerer (reported in Acts viii. 18-23), to whom Peter said, "Thy money perish with thee, because thou hast thought that the gift of God may be purchased with money;" the second that of Gehazi (2 Kings v. 20-27), servant of Elisha, who finding that his master had gratuitously cured of leprosy Naaman, the rich Syrian, thus establishing a precedent for dispensary abuses, remarked, "as the Lord liveth, I will run after him, and take somewhat of him," and in the end took not only a fee but the disease. Upon these precedents the Nebraska court ruled thus:

"The exercise of the art of healing for compensation, whether exacted as a fee or expected as a gratuity, cannot be classed as an act of worship. Neither is it the performance of a religious duty, as was claimed in the district court." They further said: "The object of the statute is to protect the afflicted from the pretensions of the ignorant and avaricious, and its provisions are not limited to those who attempt to follow beaten paths and established usages." This, it will be noticed, is very different from the view of the New York law taken in the New York case of Smith *v.* Lane and the Ohio case of Eastman *v.* State (*supra*), as well as from the latest case of the kind, State *v.* Mylod (40 At. 753), decided in Rhode Island last July upon these facts: Defendant undertook to cure one Hale of malaria and one Vaughan of grippe, by apparently engaging in silent prayer and giving them pamphlets on Christian science. He received a fee of $1, but gave no medicines, made no examination or diagnosis. He testified that he did not attempt to cure disease, had no knowledge of medicine or surgery, and that his only method was "prayer and effort to encourage hopefulness for all who come to him in public or private, and whatever diseases they imagine they have." The court held, citing Smith *v.* Lane, that in the absence of diagnosis, prescription of remedies, or surgical methods there was no medical practice. They suggested that if Christian science is practice of medicine, then as a school it is entitled to recognition by the State board, and that it would be absurd to hold, under the Rhode Island statute which forbids discrimination against medical schools, that requirements could be prescribed which members of a particular school could not comply with, since that would be not to discriminate only but to prohibit. And the court distinguished the cases of clairvoyant physicians, upon the ground that therein the defendants had prescribed medicine and professed to cure diseases. There seems to be fallacy in the implication by the court that any educational requirements as a condition of medical license are prohibitory upon any persons except those who are unable to acquire an education; and it is quite proper to exclude such persons from the ranks of physicians.

The question is full of difficulty. Every one admits the power of mental impulses in nervous diseases; admits nature's healing force that so often cures without any attendance at all; and admits that it would be wrong to forbid all recourse to any aid. But this much being conceded, are we to admit also that any person should be entitled to take charge of the sick merely because he pretends to act under religious beliefs and to abstain from using those remedies and methods arrived at by study and investigation? Are we to punish the physician who fails to report yellow and scarlet fevers, diphtheria, and other contagious disorders, and allow a person who boasts his ignorance of medical and sanitary science to treat and conceal such cases? The Christian scientist, in his madness or worse, says that there is no disease but only fear or loss of relation to God, which he in his blasphemy undertakes to restore, providing he is paid for his services. What, then, would his death certificate be? Would it be that Jones was permanently scared? What would his report of a contagious disease be? That Brown has a panic, which is likely to spread?

In the case of Reynolds *v.* United States (98 U. S. 145, A.D. 1878) the supreme court of the nation applied common sense to this proposition, that the name of religion may be used to cloak either lust or imposture. Defendant, a member of the so-called Church of Jesus Christ of Latter-day Saints, being indicted for bigamy, pleaded in defence that the penalty imposed by his church upon its male members who failed to practise polygamy "when circumstances would admit" was "damnation in the life to come." No such dreadful penalty hangs over a Christian scientist who abstains from his lucrative practices. The supreme court said in Reynolds' case: "Laws are made for the government of actions, and while they cannot interfere with mere religious belief and opinions they may with *practices*." Can it be seriously contended, asked the court, that a civilized nation may not law-

fully suppress human sacrifices and the Indian custom of suttee, because their votaries claim religious sanction therefor; or polygamy for the same reason? To suffer such things, it was answered, "would be to make the professed doctrine of religious belief superior to the law of the land and in effect to permit every citizen to become a law unto himself. Government could exist only in name under such circumstances." These wise words of the court apply even to honest believers, whom we may respect, or, at least, sympathize with, even in their delusions. But if the defence of religion were allowed to the extent that the eccentrics claim, the deadly sin of lying would become even more prevalent than it is, and the dangerous classes would go over in a body to *soi-disant* religion.

There was an English case in 1868, Reg. *v.* Wagstaffe (10 Cox's Cr. Cas. 530), wherein parents were charged with manslaughter of a child because, pursuant to their religion as members of the "Peculiar People," they neglected to provide medical attendance for it, in a case of acute inflammation of the lungs; instead they anointed and prayed over it. The court charged that if they had let the child starve for want of food, the case would have been different; for every one recognizes the need of food. But it was not the same when the question was one of medical attendance, for as to that opinions differed, and he read to the jury from the general Epistle of St. James (v. 14–15) those words upon which the Roman church rests the doctrine of extreme unction, and the Mormons and "Peculiar People" rest their doctrine of healing the sick by anointing and prayer *only*: words which the learned and sensible commentator, Adam Clark, forcibly argues to be an exhortation by the apostle to use the ordinary Eastern remedy, oil, *as well as* prayer, in treating the sick. The jury acquitted. Recently in a like case, Reg. *v.* Cook, they convicted.

Beyond doubt there are very honest, intelligent, cultivated persons who believe in the efficacy of Christian science and faith cure. Among some twenty cases of death under such treatment, including cases of contagious diseases, the writer has noted the names of such persons. It is equally true that some "intelligent persons" find no "fad" too extraordinary for adoption. The writer knew of a most shrewd and cultivated woman who consulted in Sing Sing prison as to investment in stocks an "astrologer" convicted not only of illegal medical practice but of abhorrent crime. It is said that where voudooism prevails, cultivated people consult its priestesses, after the fashion of Nicodemus. And when St. John Long, prince of quacks, was convicted of manslaughter at the Old Bailey (4 Car. and P. 398) among the twenty-nine patients who testified to the excellence of his treatment were divers "ladies of quality," headed by the Marchioness of Ormond, than whom, save royalty, only a duchess could be better able to form a sound opinion in such a case.

But nothing is more false than to say that medical laws forbid the practice of Christian science, faith cure, voudoo, vitapathy, or any other "pathy" or cult. Those laws provide only, at most, that no person shall practise medicine who has not pursued a course in medical study. There is nothing in them to prevent any licentiate from practising as he pleases. There is nothing to prevent a masseur without license from washing and rubbing a man, if he confines himself to that. But there is no reason why unqualified persons should be allowed to pretend to cure disease, by their pretences deprive the sick of the benefits of science, and yet escape the just consequences of their imposture. The whole case of these people who desire to earn a livelihood by treating the sick without any adequate preparation therefor through study and investigation was summed up in the grotesque falsehood, circulated by way of petition to the New York legislature of 1885 for the repeal of the medical law, which said:

"The law deprives from practising in this State persons who are gifted with the power of healing by the laying of hands, through the presence and imparting of vital magnetic force, and otherwise. Some of these powers are natural to the practitioner and cannot be imparted or increased, *but are likely to be limited or impaired by the course of study required by medical colleges.*" Could anything be more absurd? The natural power to heal disease impaired by the acquisition of knowledge concerning disease! And yet there were those prepared to believe even that, so true is it to-day as of old that the wonderful is the unknown and the credible that which is impossible of belief.

It may be a question of policy whether Christian scientists should be prosecuted; whether cheap martyrdom might not strengthen them. But there seems no good reason, as matter of law, why they should not be punished for the evil they actually do, prohibited, if the policy seem wise, from treating the sick without adequate preparation by study of medical science, and convicted of manslaughter if death results from their interference.

59 Wall Street, November 19, 1898.

COMMON-SENSE INFANT FEEDING.

By LOUIS FISCHER, M.D.,

New York.

When nature has been unkind, and deprived the infant of its proper food—breast milk; or if the infant's mother is prevented from nursing her offspring through illness—accident (epilepsy), tuberculosis, syphilis, carcinoma; then we must give a substitute which offers nutritious qualities. At the same time we must bear in mind that the digestive functions of an infant cannot equal those of an adult.

Substitute Feeding at Birth.—An infant from its birth and until it is two months old should be nursed or fed once every two hours—no oftener. Some children will sleep—from 10 P.M. until 6 A.M.—without feeding; others will require an extra feeding about 2 A.M. The mixture is to consist of the following:

Formula No. 1.

℞ Cow's milk	200 gm.	(or about 7 oz.)
Water	600 gm.	(or about 20 oz.)
Milk sugar	30 gm.	(or 1 oz.)

The above is to be divided into eight parts, so that the quantity for each feeding consists of about 100 gm., or about 3 oz.

Formula No. 2 (for a Child Two to Four Months Old).

℞ Cow's milk	350 gm.	(or about 12 oz.)
Water	700 gm.	(or about 23 oz.)
Milk sugar	36 gm.	(or about $1\frac{1}{2}$ oz.)

One feeding after the infant is two months old every two and one-half to three hours, and no oftener.

The above quantity is to be divided into seven portions, each portion to consist of 150 gm., or about 5 oz.

Formula No. 3 (for a Child Four to Five Months Old).

℞ Cow's milk	500 gm.	(or about $16\frac{2}{3}$ oz.)
Water	500 gm.	(or about $16\frac{2}{3}$ oz.)
Milk sugar	40 gm.	(or about $1\frac{1}{3}$ oz.)

This quantity is to be divided into six portions, three bottles containing 6 oz. and three 5 oz. each.

The infant now requires one bottle of 5 oz., alternating with a bottle containing 6 oz., once every three hours—no oftener.

Formula No. 4 (for a Child Five to Nine Months Old).

℞ Cow's milk ..... 750 gm. (or about 25 oz.)
Water..... 375 gm. (or about 12½ oz.)
Milk sugar..... 50 gm. (or about 1⅔ oz.)

The above quantity is to be divided into six portions, three of 6 oz., and three of 7 oz. each.

The same rule applies here to alternate—once every three hours a six-ounce bottle, followed three hours later by a seven-ounce bottle.

Formula No. 5 (for a Child Nine to Twelve Months Old).

℞ Cow's milk ..... 1,125 gm. (or about 37½ oz.)
Water ..... 375 gm. (or about 12½ oz.)
Milk sugar ..... 50 gm. (or about 1⅔ oz.)

We now feed the baby with 8 oz. of the diluted milk at each feeding, once every four hours.

The above quantity is to be divided into six portions, each containing 8 oz.

Formula No. 6 (for a Child Over One Year of Age).

℞ Cow's milk ..... 1,500 gm. (or about 50 oz.)
Milk sugar ..... 59 gm. (or about 1⅔ oz.)

We now feed but once in four hours—using pure milk, no dilution—giving the baby 8 oz. (½ pint) at each feeding.

The above quantity is to be divided into six equal portions, containing 8 oz. each.

We therefore have, in formula No. 1, about 7 oz. of cow's milk, to be given in twenty-four hours; in formula No. 2, 12 oz. of cow's milk, in twenty-four hours; in formula No. 3, 16⅔ oz., in twenty-four hours; in formula No. 4, 25 oz., in twenty-four hours; in formula No. 5, 37½ oz., in twenty-four hours; and in formula No. 6, 50 oz. of pure cow's milk, to be given without water, in twenty-four hours.

The above formulas will serve to illustrate the quantities to be given children from birth to the first year, and more especially for those children removed from the city, where modifications of milk cannot be procured. Good, wholesome cow's milk is easily obtained throughout the whole country, for the health departments of the various States exercise a careful supervision of the milk supply. It is safer, of course, to subject each cow to the tuberculin test, but when this is not possible it is safer to use the milk of several cows, rather than feed a baby from the milk of one cow.

Sterilization.—It is necessary to sterilize everything used in connection with infant feeding. By this I mean that the cow, the pail for the milk, and the immediate surroundings (stable), and by all means the manipulator's hands, must be absolutely clean. This also applies to the bottle, the nipple, and to everything coming in contact with the milk mixture to be used for feeding. Sterilization really means destroying pathogenic bacteria, and the same applies to the pasteurization of milk foods. It also means the utmost cleanliness and prevention of contamination by the addition of filth in any form, be it through microorganisms or by the accidental introduction of dirt from the cow's udder or otherwise. We can accomplish the desired results by using good wholesome milk in the proper dilution, and dividing it into absolutely clean bottles, if we will only take the trouble to impress on the mothers or nurses in charge all these details of the preparation of the infant's food, and also that they require careful attention but once in twenty-four hours. In order to prepare formula No. 1, I would proceed in the following manner: The number of feedings, as above stated, are eight in twenty-four hours; consequently we prepare eight bottles every morning. The bottles are first to be washed with some small shot and warm water, thoroughly rinsed, and turned upside down. If they are new bottles, it is a good plan to give them one good washing; then, turning the bottles upside down, allow the water to drain off. I then insert a large stopper, consisting of absorbent cotton, well into the neck of the bottle, at least one-half to three-fourths of an inch, and take the empty bottles, cotton stoppered, place them in a large frying-pan, with a small piece of pasteboard between each bottle, and bake them in the hot oven about half an hour. This not only dries the bottles thoroughly, but, baking them as it were, sterilizes them. I next dissolve one ounce of milk sugar in the twenty ounces of water, and add seven ounces of fresh cow's milk. The milk sugar being dissolved and the milk added to the water, I pour this mixture into a saucepan and boil it for about ten minutes, and then divide it among the eight bottles, care being taken to have the bottles warm, else they will crack while the milk is being poured into them. The cotton stoppers are to be disturbed merely to pour into the bottles the requisite quantity of the milk mixture, and are immediately replaced; otherwise contamination may be possible. These eight bottles are then to be put in a cool place; an ice chest is preferable, but not contact with the ice. Each bottle is to be warmed immediately before the baby is fed.

A Word about Nipples.—Attention to this portion of the feeding-apparatus is very important, as the cause of sore mouth and tongue and gums can frequently be traced to an infected nipple. The nipples are therefore to be boiled, immediately after being used, in plain water to which a pinch of salt has been added, and allowed to soak in salt water until ready for use. Before putting a nipple on the bottle, a good plan is to soak it for fifteen or twenty minutes in plain sterilized (boiled) water, and when the cotton stopper is removed the nipple should immediately cover the bottle.

After the child has been fed, the bottle should be rinsed, and must be boiled again in water containing a little caustic soda, common washing-soda, before being used again for feeding-purposes.

If a child takes only part of one bottle, then the rest must be thrown away and a fresh bottle used for the following feeding.

I wish to emphasize the fact that we must individualize our method of feeding, and remember that while some children merely require food once in three hours, others will require feeding every hour and a half. The capacity of an infant's stomach at birth is estimated to be about one and one-half ounces. It has been found that excessive feeding over this amount may cause vomiting. The usual amount recommended for an infant at birth is about two ounces.

In formula No. 1 the amount of food given for an infant at birth, and up to two months, is about three ounces. This conforms with the views entertained by Professor Baginsky, of Berlin.

After the child is ten weeks old, the amylolytic function develops, and we can then dilute the cow's milk with some of the following mixtures, if the condition warrants it.

Fluids for Dilution of Milk in Hand Feeding.—Barley water. Take a tablespoonful of pearl barley, grind it in a coffee grinder or pound it in an ordinary mortar; add one pint of cold water, and allow it to simmer slowly for about an hour. Strain and add enough water to make one pint.

Oatmeal water. Take a tablespoonful of ordinary coarse oatmeal and add one pint of water. If it is allowed to stand for several hours before using, the oatmeal swells and can be more easily boiled. It is well to allow the oatmeal to simmer slowly for one hour, and then strain. Add enough water to make one pint.

Farina water. A tablespoonful to a pint of water boiled for from ten to twenty minutes, and strained

through coarse cheesecloth. Add enough water to make one pint.

Rice water. Take a tablespoonful of rice to a pint of water, and allow it to boil at least three-quarters of an hour or an hour; then strain, and add enough water to make one pint.

Flour ball. A small bag made of cheesecloth is to be filled with wheat flour, and suspended or immersed in a saucepan of water. This is to be boiled from six to twelve hours constantly. The flour becomes agglomerated into a hard mass, and is doughy only on the surface. It is then removed and allowed to dry, and after removal of the crust it is grated, and makes a whitish-yellow powder that is very nutritious. I usually commence feeding with a teaspoonful to ten or twelve tablespoons of water, with a pinch of salt and sugar, for one feeding. If it agrees well with the child, then I increase the quantity of the flour ball by adding a half-teaspoonful more every three days to the same quantity of water. If this agrees very well and the child seems to assimilate its food, then I usually, after one week of flour-ball feeding, substitute one ounce of cow's milk for one ounce of water, so that the formula would be one teaspoonful of flour ball, four ounces of water, one ounce of cow's milk, pinch of salt, and some lump sugar—for a child nine months old, and older. This formula I have found eminently successful in the treatment of summer diarrhœa, but I usually omit the milk.

The guide to the value of any given food is the scales. I insist upon weighing every child at least once a week, and if there is not an increase of at least four to eight ounces in the first three or four months of infant feeding, and at least several ounces weekly (roughly estimated) up to the period of dentition, then it is safer to change the method of feeding; for if there is no increase in weight, the food certainly will do no good. Another valuable point to bear in mind is the condition of the infant's stools. If the child suffers from severe constipation or diarrhœa, or seems to show a severe form of colic, then the food must be changed. This also applies to any and all severe gastric disturbance, such as vomiting, or to fermentative conditions, such as eructations or severe colic shortly after feeding. One point to note is that we must individualize and cannot set cast-iron rules, which must adapt themselves for every infant's stomach; and it is important to watch a child's condition, its sleep, its digestion, its stools, its weight, before deciding that the food selected really agrees with it.

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MODERN ASPECTS OF PUERPERAL FEVER.[1]

By F. D. GRAY, M.D.,

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Mr. President and Fellow Members: In deciding on a theme for your consideration this evening, it occurred to me that I could select none more practical—even if somewhat trite—than the febrile complications of the puerperal state.

The fact of their lessened frequency now, as compared with past decades, speaks well for the advances of modern medicine, and especially surgery; but until this dread foe of womankind is actually exterminated, we, as general practitioners, obstetricians, and surgeons, must continue to study and discuss its nature and the best means for its suppression.

It is hardly necessary to rehearse the symptomatology of puerperal fever, for most if not all of us have, no doubt, at some time or other, had it indelibly impressed on our minds—partly by the severity of our patient's suffering, partly by our ofttimes sense of powerlessness to save, and partly perhaps by a terrible suspicion that we may not have been entirely guiltless of the cause. But if we may pass by the symptoms, we cannot lightly leave the questions of origin and treatment.

There are a few cardinal facts that have gradually impressed themselves on the minds of the profession regarding the etiology of this disease.

Puerperal fever does not originate *de novo*. It does not depend on any indiscretion of diet, neither is it caused by too brief a period in bed. The day is past when a physician of intelligence can delude himself with the idea that his patient has a fever following her confinement because she ate meat on the third day or arose from her lying-in couch previous to that sacred ninth day. In fact, the time has about passed when even the uninformed part of the laity can be satisfied by the ever-ready explanation of the charlatan that his patient has "caught cold," while he himself knows that he has undoubtedly poisoned her as certainly as if he had administered an overdose of morphine or strychnine.

I think I am safe in saying that puerperal fever is always due to one of two causes:

First, and most frequent, is the introduction of septic germs into the genital tract during, just before, or within a few days after delivery.

Second, by the decomposition of retained secundines, clots, or secretions.

The result of the former of these causes is a true septicæmia, while the latter constitutes a sapræmia. The former condition is undoubtedly more serious and less amenable to treatment than the latter, but fortunately it is without doubt more easily prevented. I have a growing belief, as I shall try to establish later on, that the introduction of dangerous germs into the parturient canal is entirely unnecessary; but I am hardly willing to assert that the retention of clots or small portions of secundines is always preventable, or that their subsequent decomposition can always be forestalled. The rare cases in which this does occur, however, are usually amenable to treatment, if promptly instituted on the first appearance of symptoms. The healthy vagina and uterine canal of the pregnant woman may safely be assumed to be in an aseptic condition previous to any digital examination, by which means germs might be introduced. Further on I shall allude to the fact that the vaginal secretions are normally not only aseptic, but distinctly antiseptic. Kroenig states that the antiseptic virtue of the normal vaginal secretion is sufficient to sterilize that cavity in the course of forty-eight to seventy-two hours; so we may fairly assume the normal parturient canal, previous to the approach of physician, midwife, or nurse, to be aseptic; consequently a woman who suffers from what is commonly termed puerperal fever must do so as a result of introduction of germs from without and resulting septicæmia, or production of putrid poisons by decomposition of organic matter within, and a consequent sapræmia.

Accepting, then, the bacterial or putrid origin of the disease, we may next investigate the varieties of such poisoning and the various modes of its introduction or production. Just here two facts stand out clearly:

First, septic germs are of various sorts.

Second, not all bacteria are septic, but many are innocent.

The air we breathe, the water we drink, and the skin which covers our bodies are all more or less infested by bacteria; but most of these might and undoubtedly do at times find lodgement in the parturient canal with impunity. There are, however, a few dangerous varieties, and one in particular which under such circum-

[1] Paper read before the Practitioners' Club of Jersey City, November 9, 1897.

stances is deadly. I refer to the streptococcus. It is this micro-organism, as we know, which is the cause of the most virulent and uncontrollable of all puerperal diseases. Besides the streptococci, there are the staphylococci, the communis coli, the gonococci, the Klebs-Loeffler, and we may include the germs of one or more of the exanthemata. Undoubtedly all of them are capable of causing infection, accompanied by elevation of temperature and inflammatory action in the uterus and adnexa; but chief among all these agents of disease and death in the puerperal condition is the streptococcus pyogenes. It is no doubt true that the Klebs-Loeffler or streptococcus erysipelatos may prove as malignant, but fortunately they are more infrequent in this relation.

Van Schaick asserts, after a series of investigations, that the gonococcus may be found in the vaginæ of twenty-six per cent. of married women—a rather startling statement, if it be true; and the fact that gonorrhœal infection as a cause of puerperal fever is comparatively rare indicates that the parturient woman must be especially protected from that bacillus. A point to which I have alluded before is that the normal vaginal secretion is decidedly germicidal. It constitutes in the majority of cases an acid medium, which is destructive or at least strongly inhibitive to the pyogenic organism, which can exist and propagate in this medium only when, in addition, there are present lacerations or abrasions of the vagina or uterus. In the presence of infection, nature appears to make an effort to come to the patient's rescue by the generation of a new germ, known as a Döderlein's—which gives an added acidity to the secretions, and it is claimed makes them more strongly germicidal than any known antiseptic that can be safely used.

To summarize the question of etiology, it is, briefly, that puerperal fever is either septicæmic or sapræmic —germ infection or putrid poisoning. Of the former, the most virulent are the infections by streptococci, either pyogenes or erysipelatos; and the lesser infections are by staphylococci, coli communis, etc., or perhaps a mixed infection; that it is always important and generally possible to differentiate between septicæmia and sapræmia, as well as between the various forms of septicæmia.

Regarding the general facts as to etiology of puerperal fever, I believe the profession is practically in accord at the present day; but as to treatment, which we will now consider, there is more room for difference of opinion. It is to be hoped, however, that a physician whom I met in a case of this sort a few years ago and who advocated no treatment at all was the last of his type, and that he has since reformed. It seems almost unbelievable that within the past five years any graduate of a reputable medical college would be either so ignorant or so vicious, but this M.D. coolly informed me, when I asked him why he had done nothing for a case of sepsis of several days' existence, that it wasn't necessary—that he often had such cases and they got along all right without his bothering.

The first point in treatment on which I want to insist sounds anomalous, and yet I regard it as by far the most vital. It is to prevent the necessity for treatment. Here is a field where we can pin our faith to the gospel of prophylaxis with the utmost confidence that we will not be disappointed. There are few lines on which preventive medicine can be practised so absolutely.

What vaccination is to variola; what modern sanitation and quarantine are to cholera; what the guarding of water supply is to typhoid fever—all this, and with even more certainty, is surgical asepis to puerperal fever. I do not mean to insist upon all the details of what may be termed fussy asepsis; some of it even, such as the routine use of vaginal douches, I firmly believe to be harmful asepsis. The previous sterilization of the vulva, the use of sterilized napkins and pads, sterilized gowns for accoucheur and nurse, are all well enough; they are refinements of the art, but in my opinion they are not essentials. The essentials as I see them are surgically clean hands and instruments. Hands and instruments are the danger points. The ease with which the not overcareful physician may introduce septic matter into the vagina may clearly be seen. He rushes from a case of scarlatina, or perhaps from lancing a foul abscess or dressing a septic wound; the washing of his hands is likely to be more thorough after his examination of the patient than before—if, indeed, he takes the trouble of a preliminary wash at all—and in go the streptococci or Klebs-Loeffler, etc. A forceps delivery becomes necessary, and his instruments are produced from a bag in which he has carried them about from case to case for months or perhaps years—and after a preliminary dip in a carbolic solution, in they also go, with their load of bacteria; and in a few days the physician is wondering at his "bad luck" at having on his hands another of those troublesome cases that occur so often in his practice—and on his hands literally he has carried the cause of trouble, and similarly conveys it to his next unfortunate obstetric case.

Not always is it an unseen germ which such a practitioner introduces, but in some cases it is actually a septic wound or sore on his own hand that kills his patient or makes her a chronic invalid. One such case at least I have in mind, the history of which I have from reliable witnesses; a physician—one, by the way, who is said to enjoy a large obstetric practice —attended a woman while he had a suppurating sore on his finger, and within ten days his patient was dead, having had typical symptoms of puerperal sepsis, accompanied by membranous patches on the vagina and cervix. Possibly the doctor had not heard of the dangers of streptococci, or possibly he was not willing to sacrifice his fee even though he sacrificed the life of his patient. I suspect though that to this day that man never fully realized the enormity of his offence.

The old saying, "An ounce of prevention is worth a pound of cure," may well in these cases read, "An ounce of prevention is worth untold pounds of cure." For prevention, as I shall shortly try to show, is almost universally possible, while cure is at best very uncertain; and even if life is saved it is usually at the expense of a vast amount of anxiety and labor on the part of the physician, and in many cases a chronic invalidism for the patient.

There are those who claim that the occurrence of a case of puerperal sepsis is clear evidence of malpractice on the part of the attending accoucheur or nurse, or both—a statement which is probably too severe; I am free to admit that this disease may in rare cases occur apparently in spite of every precaution. It is no exaggeration, however, to say that the wilful neglect of any preventive measure during the lying-in period constitutes one of the grossest types of malpractice.

I trust you will permit me to introduce a short chapter of personal experience in proof of my contention that puerperal fever is almost if not absolutely preventable. I present this not in any boastful spirit, for no doubt many if not all of my hearers could produce an equally good record. I give it rather in a spirit of humility that the whole period of my obstetrical practice does not afford so good showing.

Of my last four hundred confinement cases, approximately covering a period of between four or five years, I have had to contend with but two cases of this sort that could be called in any way serious—in both of which the patients I am happy to say recovered, after much suffering on their part and much anxiety and struggle on mine. In the one case I am still uncertain wheth-

er the patient was infected by my using an unsterilized silver catheter to relieve retention of urine on the second day, or whether it was the result of a washing of the vulva by a dirty and ignorant nurse on the same day with water from an ordinary slop-bucket applied by a common domestic sponge. I like to think, and I believe with reason, that it was the latter procedure which did the damage. The second case developed during my attendance on the first, and was no doubt infected by me in spite of thorough precautions. This leads me to say right here that I am satisfied we ought never to go to a maternity case for at least one month after having been so unfortunate as to have in our care a genuine case of puerperal fever. I believe it is Lawson Tait who said, in an article published early this year, that there are two septic poisons which it is impossible to get rid of by any antiseptic method, viz., that of puerperal sepsis and of certain virulent forms of peritonitis; they simply have to wear away, and during that period (of a month at least) the tainted person has no right to perform a laparotomy, and, I will add, attend a case of obstetrics.

To return to my statistics, the two cases mentioned occurred among the first hundred; and, as a result of increased vigilance, the last three hundred and twenty-five cases, approximately covering a period of between three and four years, have not contained a single case that may fairly be dignified by the term puerperal sepsis. Perhaps a half-dozen presented, some time after the third day, a temperature of from 100° to 101° F., accompanied by slight chill and some malaise, all of which were promptly subdued by a single or at most a second antiseptic vaginal douche, and which, from the lateness of their development and the promptness of relief by the simple means used, were undoubtedly only mild cases of sapræmia. Of the remainder, not one had a temperature above 100° F. or any symptoms of illness. I believe it is fair to assume that the uniform results of more than three hundred cases, covering a period of three years or more, may be extended to three thousand or any number of cases as well, under similar conditions; hence I feel that I have proved my assertion that puerperal fever is nearly if not quite universally preventable, if we will take the necessary precautions.

My list includes women of all walks of life—those from the lowliest and most squalid surroundings to those most favorably situated; those cared for by the most ignorant, careless, and obstinate nurses to those having the benefit of the most carefully trained attendants. In none of them did I follow the ultra refinements of previous sterilization of the genitals, or subsequent vaginal douche, except in those very few cases referred to in which the symptoms of a mild sapræmia indicated it. In no case did I cover my clothing with a sterilized gown, nor were sterilized napkins or pads applied to the vulva. In all cases I endeavored, by proper protection of the bed, to prevent its being soaked with discharges that would ferment and decompose later on, and in all did enjoin upon the nurse to prevent accumulation of lochial discharge upon the vulva by frequent ablutions with a weak carbolic solution applied with a cloth that had not been used since its last washing. From all this I am satisfied that the freedom from unfavorable results was due to two things, viz., surgically clean hands and instruments.

At the risk of being prolix, I want just here to emphasize the details necessary to accomplish this. To begin with, the safe accoucheur, just as the safe surgeon, should be chronically aseptic; spasmodic efforts upon surgically unclean hands are not worth half so much as when applied to hands that are daily familiar with soap and nail brush, nail file and antiseptic solutions, even when the immediate necessity for the same does not appear.

Then, when called to the bedside, let us remember that no detail of preparation of the hands is too trivial to observe. Soap and warm water, nail file and spud, nail brush and antiseptic solution, are to be used so thoroughly and as long as the exigencies of the occasion will permit before the first examination is made; then, too, do not delude yourself with the idea that one sterilization will suffice for the entire case. Have a basin of mild antiseptic solution near by, into which the hand can be dipped previous to each vaginal examination.

As to instruments, it is hardly necessary to say that nothing short of thorough boiling will make them safe. Before leaving this point, I want to call your attention to the immunity which strict asepsis of hands affords from trouble consequent upon frequent examinations. There seems to be a holy horror of this procedure on the part of many in the profession. This is chiefly, I think, among writers and teachers. It may be very well to instruct students in the refinements of the art, but what is the use when diagnosis can be so much better made and just as safely by the combined method, if only the attendant's hands are truly aseptic? Furthermore, it cannot be denied that the closer you watch the progress of your patient the better for her, and this certainly means fairly frequent examinations. More than this, I am a believer in the efficiency of digital dilatation of the cervix in obstinate cases and similar relaxation of the perineum from within the vagina. Much time is saved to the attendant and much suffering to the patient by these procedures; parts are relaxed and softened that otherwise would remain rigid and easily tear, and all this is accomplished with perfect safety, if your hands are aseptic.

It would be just as sensible to advocate "long-distance" surgery, owing to the fear of sepsis, as to demand "long-distance obstetrics" on the same ground. If either surgeon or accoucheur is not aseptic in his work, he will have bad results, but with proper care both are equally safe.

I dare say that in fifty per cent. of my maternity cases I employ, at one stage or another, digital dilatation of the cervix or digital relaxation of the perineum, and have done so with impunity, for more than three years at any rate. I also employ digito-vaginal examinations as often as I think the necessities of any case demand, without the slightest fear that I am recklessly exposing my patient to the probability of septic complications. The fact is, I have a suspicion that those zealous antagonists of intravaginal examinations and manipulations during labor have not practised strict asepsis in their obstetrical work, or they would not stand in such awe of the results.

Passing now from the discussion of preventive treatment, allow me to present as briefly as possible the various methods of combating the disease after its actual occurrence, for, no matter how faithfully we may preach the doctrine of prevention, there are and always will be careless doctors, midwives, and nurses, and as a result we shall at times be called to help them undo their bad work, even if we ourselves never relax our vigilance or have an oversmart nurse anticipating our arrival by examinations with finger nails in mourning.

When the light of pathology first broke over the darkness that had enshrouded puerperal fever, we were taught to place chief reliance on the antiseptic vaginal douche—using it as a routine after confinement and increasing its frequency in case of infection. Then it dawned on the minds of the profession that this procedure reached only the vestibules of the structure where the disease was too often entrenched, and the uterine douche with Chamberlain tubes, etc., held sway. It being found that in many cases the infections had invaded the depths of the mucous membrane, and also

often much deeper, as it was subsequently learned, the sharp curette was called into play and we were adjured to curette unsparingly until all the infected mucous membrane had been cut away. Later, again we were warned against this procedure, as only opening up fresh channels of infection. Still more recently the very radical obstetric surgeon advocated and performed hysterectomy in those cases in which infection had extended to the uterine substance and adnexa; and last, but let us hope not least, comes the serum treatment of this disease with Marmorek's or streptococcus antitoxin. To be candid, we must admit that probably each of the therapeutic means enumerated has its sphere of usefulness, and no doubt he will subdue most cases of puerperal fever who can most happily select from among them all the particular weapon or combination of weapons most suited to combat the particular case.

Regarding the efficiency of the antistreptococcic serum of Marmorek, I cannot speak from personal experience, for the simple reason that I have had no occasion to use it since its introduction. From my reading, however, I gather that in those instances in which it has been employed it has had about an equal number of successes and failures—the latter, no doubt, due in part or largely to the fact that it has been used in many cases indiscriminately, while it can be expected to show good results only in streptococcic infections, or at most in cases of mixed infection in which the streptococcus plays a part. For puerperal fever due to poisoning by staphylococci, coli communis, etc., or in saprophytic infection, it must in the nature of things be useless. Owing to this fact, the early differential diagnosis between the different varieties of puerperal fever becomes highly important. For this purpose the only true test, of course, is the bacteriological culture—which may be carried out by the inoculation of a culture tube with a sterilized swab moistened with the vaginal or uterine secretions; or, in case of the uterine contents, it can be done more exactly by withdrawing from it, by means of a sterilized glass suction tube, a few drops of fluid, and applying the same to the culture-tube media, and subsequently subjecting the same to microscopical examination. However, all this takes time, and in most of these cases time is vital; treatment, to be successful, must be prompt. The delay of twenty-four hours to learn the result of our culture test may mean the death of the patient. There are fortunately other approximate points of differential diagnosis. We know that streptococcic infection is likely to occur early—before the third day. Sapræmic poisoning is most likely to take place later. The former is apt to be accompanied by more intense initial symptoms, while the latter is generally milder in character. On general principles, then, a case of puerperal fever occurring early and presenting an intense type should have the benefit of the antistreptococcic serum before waiting for the result of a culture, which latter should nevertheless be made at the earliest possible moment. In fact, in order to be on the safe side and give my patient every chance, I should be inclined to use the serum treatment in all cases, for, by analogy with diphtheritic antitoxin, I am sceptical of any serious results that could arise from such a procedure, in case the condition proved not to be due to streptococci. In cases in which the Klebs-Loeffler bacillus proved to be present or in which pseudo-membranous patches appeared on the vagina or cervix, I would certainly use the diphtheritic antitoxin on the same basis.

Coming to the local treatment, there is no doubt that in a minority of cases—those of vaginal origin and depending on a mild bacterial or sapræmic infection—the time-honored (but more often dishonored) antiseptic vaginal douche is all that is required. A few cases referred to earlier seem to prove this.

Regarding the use of the curette, the consensus of recent opinion is that it should be confined to those cases of sapræmia due to retained clots or portions of secundines, and that with rare exceptions only the dull instruments should be used. The use of the sharp curette, however, seems to be safe, and is no doubt indicated in cases accompanying early abortion—previous to the third month—for then the lymph and blood channels of the uterus are smaller and less open, and usually there is also a granulation zone underneath the decidua, which serves as a barrier to further entrance of micro-organisms.

All curettage should be followed by intra-uterine irrigation and the subsequent application of Churchill's caustic tincture of iodine or of caustic solutions of silver nitrate or zinc chloride, in order to render the uterine canal non-absorptive, followed by the introduction of some self-retaining uterine drainage tube, such as Longyear's, which will permit easy and frequent intra-uterine irrigation.

A matter of practical importance to which I would allude here is the fallacy of gauze drainage in these cases. Gauze does not drain the uterine cavity perfectly, especially when introduced, as it usually is, firmly packed in, as it were. If applied at all, it should be very loose, so that the retained secretions may easily escape.

A common source of error in treating this disease is to regard the uterus as the sole seat of infection, while the fact is that in a certain proportion of cases the trouble is wholly vaginal. For this reason in all cases the vagina and vaginal portion of the cervix should be carefully inspected, and any areas of abrasion or laceration thoroughly cauterized. A practical point in the management of all confinement cases—one which strictly comes under the head of preventive treatment—is the advantage of having the patient void urine in the sitting posture, thereby facilitating drainage of secretions and discharge of clots, etc., with consequent prevention of sapræmia. This entails no risk, except in rare cases of unusual weakness or when a ruptured perineum has been immediately sutured. In all other cases it should be a routine measure.

Regarding the advisability of hysterectomy in those instances of severe infections, accompanied by metritis or inflamed adnexa, or both, there is much to be said for and against. The chances are that whichever course is pursued in those cases, the attendant is likely to wish he had chosen the other.

Pan-hysterectomy in such a case, if well advanced, can hardly succeed in removing all the infected tissues, and must add much by its shock to the already desperate condition of the patient. To make success at all certain, it must needs be done within the first twenty-four to thirty-six hours, before infection is far advanced, and he would be a bold surgeon indeed who would adopt such a procedure at that stage. If the patient should fortunately survive the acute process of the disease and present a pelvic abscess or diseased adnexa, the former may be evacuated per vaginam or along Poupart's ligament, or the latter removed by the abdominal or vaginal route.

A practical point in treatment which has been lately advocated, and which commends itself to our judgment, is the submammary injection of decinormal saline solution. It stimulates the patient, dilutes the infected blood current, and sometimes tides her over the critical period of her disease.

The foregoing therapeutic measures, together with general stimulation and suitable supportive medication, appear to me to be the basis upon which we must hope to control, if possible, this formidable foe of the puerperal woman.

Before I close, I desire to refer to two practical points of diagnosis. One is the possibility of mistak-

ing malarial infection for puerperal sepsis. A sharp chill, rise of temperature, and general malaise, occurring during the puerperium, do not always mean septic or sapræmic infection. It may be only a malarial explosion. Absence of pelvic tenderness and of a fetid odor of the lochia will usually suggest the possibility of the malarial cause, while the presence of protozoa in the blood or a few full doses of quinine in solution will settle the diagnosis; still, even in these cases when at all in doubt, or until diagnosis is established by the above means, it is of course safer to treat a malaria as sepsis than to neglect a sepsis on the theory that it may be malaria.

The other point has reference to two symptoms just mentioned, and which are usually regarded as pathognomonic of puerperal sepsis, viz., pelvic tenderness and fetid lochia. It is well to bear in mind that some of the worst cases of true septicæmia occur with a total absence of these manifestations, the poison seemingly entering the uterine sinuses and passing directly by the circulation throughout the system, without causing the usual local symptoms. These are commonly cases in which we are powerless to help.

As a final word, let me enter another protest against that sacred and time-honored instrument, the vaginal syringe in obstetrics. I believe its routine use, either before or after delivery, is bad practice and has been responsible for vastly more harm than good. It should never be employed after labor, unless there is some positive indication for its use, and then only by the physician or a capable trained nurse, after specific directions from the physician. There is no doubt in my mind that its employment by any one during the first twenty-four to thirty-six hours following confinement is absolutely dangerous, owing to the liability of injecting the uterine sinuses or forcing fluid through the patulous Fallopian tubes.

It would be well should we all subscribe to a rule which I recently read in one of the current journals, laid down by some wise obstetrician, whose name I unfortunately forget. He says that invariably when assuming charge of a maternity case, especially when he is not sure of the nurse, he inquires if there is a syringe in the house, and, if so, he carefully locks it up and takes charge of the key.

CLOSURE OF WOUNDS OF THE ABDOMINAL WALL.[1]

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The chief concern ordinarily in the treatment of flesh wounds, whether traumatic or operative, is to secure union by first intention—or, in modern phraseology, that they shall heal aseptically. A consideration of much greater importance is presented in wounds of the abdominal wall, when structures deeper than integument and adipose tissue are involved. It is the prevention of hernia. To this end simple surface healing is not sufficient; repair of the deeper layers, especially the perfect union of divided aponeuroses, is absolutely essential to the avoidance of this unfortunate sequela. Very painful is the surprise of the patient and in time extreme annoyance, and very deep is the chagrin of the surgeon, upon the discovery of a tumor in the position of a recent abdominal wound, which was believed to have healed perfectly. It may be in the location of an operative scar, the result of a section made for the removal of an intra-abdominal growth. In such an event there have been patients sufficiently unappreciative as stoutly to maintain that their last condition was worse than their first, and even question the skill of their surgeons.

Happily such results are not frequent; neither are they rare. The percentage of hernial formations following abdominal section, operative and traumatic, is difficult to determine. Statistics are unsatisfactory in connection with this question. It is doubtful if any entirely reliable will ever be compiled, for the reason that hernial development is remote from the time of operation. The majority of these patients are treated in hospitals. In the case books their histories are closed, "Discharged, cured." They become widely scattered. Weeks or months later the family physician may be consulted; abdominal supporters are advised, and with such helps they drag their lives along, many not returning to the surgeons who were primarily responsible. Clearly it is practically impossible to follow all of one's cases and to make a perfect estimate of the percentage of those which develop hernia. However, notwithstanding the fact that a large majority of cases will not suffer this misfortune by whatsoever method of closure adopted, it does occur in a minority sufficiently large to warrant the demand for a more certain method of treatment than the old-time through-and-through interrupted suture.

It is profitable to seek explanation of the occasional failure to secure perfect union when this method only is adopted. The tensile strength and competence of the abdominal wall are in its fasciæ. Together they form the fascial layer, the importance of which may be appreciated when it is considered how richly nature has provided the parietes with it. This measure of defence and security is present in every abdominal region, covering the entire epigastric, umbilical, hypogastric, and both inguinal areas. Even the lumbar regions are fortified by the strong lumbar fasciæ, the aponeuroses of the transversalis muscles. Only the anterior third of the lumbar and a small angle of the hypochondriac regions are without some portion of it. The combined bellies of the three muscles occupy and give strength to this space on either side; an area which will fall between two imaginary lines—one from the junction of the ninth rib with its cartilage and the anterior superior spinous process of the ilium; the second from the end of the twelfth rib to the highest point of the crest of the ilium, a width of scarcely three inches in a subject of medium girth. With the exception of these narrow surfaces, fascia is everywhere present in the wall.

Its strength and power of resistance are better appreciated when it is recalled that this layer, over the entire anterior portion of the abdomen, is, in fact, a combination of three tendons—firm, unyielding, white fibrous tissue, the aponeurotic terminations of the three abdominal muscles. The extent and strength of the fascial layer are evidences of its paramount importance. Moreover, it is apparent that there is no tensile strength in the other layers of the wall, integument, adipose tissue, recti muscles, without union of the fascia encasing them, or in the peritoneum.

If the fascia, then, is of such significance, it is reasonable that when divided especial care should be exercised in its closure. To cure hernia, inguinal and umbilical, the natural openings in the fascia are repaired by separate suturing in the most particular manner. To prevent hernia, should not artificial openings elsewhere in the fascia be given equal attention?

This fascial layer has active reparative powers under favorable conditions. It, however, being the aponeurotic expansion of muscles, will, as any divided tendon, retract strongly when its fibres are severed; and if the muscles are brought into unusual action by a straining effort, as in vomiting, which usually occurs

[1] Read at the meeting of the Baltimore and Ohio Association of Railway Surgeons, May 13, 1898.

after anæsthesia, the retraction will be still greater. In a thin abdominal wall a through-and-through suture will succeed as a rule in apposing the edges of the divided fascia; but in a thick wall with a heavy layer of adipose tissue there may be failure, since the through-and-through interrupted suture produces a loop of large circumference, with its lateral diameter necessarily of considerable length, making possible a separation of the fascia. On the other hand, the purse-string effect of the through-and-through suture, thrusting in from the outer and drawing up from the inner surface, may serve to interpose adipose tissue from without and muscular fibres from within between the separated edges of the fascia.

The imperfections of this suture have been recognized by many surgeons, with the result of numerous suggestions, made with the aim of procuring a better method. Tier suturing, coapting each layer separately by a line of buried sutures, has been strongly recommended. In this method opportunity has arisen for discussion and criticism of the suture material used. Unhardened sterile catgut, the most suitable for buried sutures, has been extensively advised; but when used alone it has proven insecure, since it may be absorbed before perfect union has been obtained. One writer reports thirty-five cases of imperfect results with this material, occurring in the work of a number of surgeons, covering a period of three years. It has been abandoned virtually, and the non-absorbable suture has come into more general use among those who have adopted the method of tier suturing: silk, silkworm gut, and silver, as well as the slowly absorbable kangaroo tendon and chromicized catgut.

That the sutures which are to be buried should be aseptic is an absolute requisite to a good result. Admitting that this is always possible, although there are frequent failures, there is yet a well-grounded objection to their use. There exists naturally a marked tendency to mural abscess formations in the course of the repair of abdominal wall wounds. Nothing so endangers the union of the fascia, its consequent separation, and subsequent hernia, as a suppurative process. The non-absorbable or slowly absorbable sutures are practically foreign bodies, and must necessarily act in some measure as irritants, thereby increasing the danger of suppuration. At the International Congress in Geneva, 1896, in the discussion of this very subject, the following was one of the conclusions reached: "That in the repair of the abdominal incision, suppuration is due, not to the presence of bacteria, but to foreign bodies or to strangulation by tight sutures." This is a statement from high authority, and is worthy of credence. The buried non-absorbable and slowly absorbable sutures must be convicted under this ruling, and will probably come more and more into disfavor as the truth of this conclusion is verified in the experiences of surgeons now advocating this procedure.

Many ingenious methods of closure have been devised, based upon the principle involved in the tier suture, but avoiding its objectionable feature — the suture not buried, but so placed as to be removed when union is effected. But one of these, which seems the least open to criticism, will be referred to. It is the figure-of-eight suture, suggested and advocated in Dennis' "System of Surgery." Silkworm gut is used, and the suture is thus described: "Beginning on the left side, for instance, we pass first through the skin and fat in the order named, then across to the right side, where it passes downward through the fascia, muscle, and peritoneum; it enters at a corresponding point under the peritoneum of the left side, then through the muscle and fascia of this side. The suture is then recrossed to the right side, and is brought out through the fat and skin to the surface."

This figure-of-eight suture is doubtless practicable in a thin abdominal wall, but in one with a thick layer of fat it is unsatisfactory, failing perfectly to coapt the fascia. In fact, the author who has been quoted advises that in such cases it is better to leave out the skin and fat, permitting them to close by granulation, applying the suture only to the fascia, muscle, and peritoneum, "including the fascia in the outer loop of the figure-of-eight, the muscle and peritoneum in the inner." It is hard to understand how this suture can without difficulty and pain be removed, if this suggestion is adopted, since it must, at least in some measure, be buried and hidden in granulation tissue. At any rate, a granulating surface is undesirable. It means frequent dressings, retarded convalescence, and leaves an unsightly scar. Hence, if in thick abdominal walls, the very ones demanding tier suturing, the figure-of-eight suture is unsuitable, it is unlikely that it will come into popular use, though ardently advised by this eminent surgical authority. Again, it is somewhat complicated in the technique of its introduction, and requires twice as much time as the simple interrupted suture.

With the view of protecting against hernia, it is advocated by some surgeons that in an operative incision near the median line it should be made through a rectus muscle and parallel to its fibres, rather than through the linea alba, in the belief that firmer and more reliable union may be secured in this way. But it is clearly a fact that muscular tissue is elastic and yields to moderate pressure. Union between parallel fibres is not strong. It is not firm before their division, gentle force with the blunt finger separating them. If power of resistance, therefore, rests in this muscle, it is by the perfect restoration of the fascial layer, which forms its sheath, making the repair of the fascia even in this procedure an essential step.

In view of the fact that the favorite through-and-through interrupted suture is so nearly satisfactory and is defective chiefly in one particular, its occasional failure to appose the fascia, it would seem a rational practice to keep the old suture, but correct its shortcomings.

It is not essential that the through-and-through interrupted suture should include the peritoneum. It is unquestionably better that it should not. By its omission, two lines of stitch holes are avoided; but especially is it desirable to escape the irritation to the peritoneum, which is occasioned by the presence of that portion of the suture between the stitch holes. When tied, it is embedded in the coat and to some extend wounds it, thereby encouraging inflammatory adhesion with the intestine, a condition which it is very important should not develop.

The edges of the peritoneal layer should be united separately and before the interrupted sutures are placed. Aiming to avoid a buried suture and seeking one easily removed, a silkworm gut of good length is selected. It is carried through the integument one-half inch below the termination of the skin incision, and down to the end of the incision in the peritoneum. The suture is anchored by an artery clamp, made to catch it a little distance from its end, permitting about two inches of it to remain free. The peritoneal incision is now closed by the silkworm gut, with a running stitch somewhat after the fashion of the basting-stitch, picking up the edge upon one side, crossing and securing the edge upon the opposite side half an inch further along, and so continuing back and forth to the end, where the suture is passed up through the integument half an inch above the beginning of the incision. By drawing forcibly upon the suture until it corresponds almost to a straight line, the peritoneal edges are perfectly apposed. This apposition is maintained by catching the silkworm gut with another

clamp just as it emerges from the skin. Should considerable length remain to the suture, it should not be cut away, but retained for a later service in the fascia.

The through-and-through sutures are then placed after the usual manner, care being taken to include every layer to the peritoneum. When they are in position and before they are tied, there comes the most important step, in my opinion, in the closure of abdominal-wall wounds—uniting the fascia. The interrupted sutures are collected together upon either side of the incision and held apart, exposing the edges of the fascial layer, which are then apposed in precisely the same manner as was the peritoneum. The remainder of the silkworm gut used in the peritoneum can be employed. If not sufficient length remains, a second suture can be tied to the first, close to the second clamp. Simply the edge of the fascia upon one side is included in the running suture, the same upon the opposite side half an inch beyond, and so on throughout the length of the wound. It is made to emerge at the end of the incision, and after being drawn taut, thereby perfectly apposing the edges of the fascia, it is tied to the protruding end of the peritoneal suture, when both clamps are removed. If a diminutive pad of gauze be placed under the silkworm gut at either end where it rests upon the skin, it will be prevented from embedding itself in the integument and occasioning discomfort in case of great abdominal tension. The repair of the incision is then completed by tying the interrupted sutures. This fascia suture is efficient and sufficient, since it is to approximate and not to support, being perfectly reinforced by the through-and-through suture, which relieves it from all strain. At the same time the interrupted sutures are removed, and with the same ease, this long peritoneal and fascial suture is withdrawn, after being cut at one end but at two points, the half inch of exposed suture being removed.

Although this simple method is particularly adapted to the closure of the operative abdominal incision, I wish to end this paper by emphasizing the importance, in my judgment, of its use in all traumatic wounds of the abdominal wall, sufficiently deep or so situated as to involve the fascial layer. In the treatment of lacerated, incised, and punctured wounds of the wall, such as are frequently encountered in railway and general surgery, it is certainly the part of wisdom to observe all possible precaution to avoid subsequent hernia. The surest safeguard is found in the fascia stitch, so speedily and easily taken, prior to the tying of the interrupted sutures.

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The Action of Certain Drugs and Mineral Waters on the Secretion and Composition of Bile in the Human Being.—Dr. William Bain (*British Medical Journal*, June 25th) made the following observations on a patient with a fistula of the gall bladder: (1) The total quantity of bile secreted in twenty-four hours is about 775 c.c., and contains 15.8 gm. of solid constituents. (2) The quantity secreted in the daytime is larger than at night. (3) The sulphocyanate of potassium of the saliva does not come from the bile salts. (4) The following substances increase both the quantity and solid elements of the bile: The mineral waters of Harrogate, of Carlsbad, of Kissingen, and of Spa; likewise euonymin, sodium benzoate, and sodium salicylate. (5) Podophyllin and iridin increase the solid constituents without perceptibly changing the quantity of bile. (6) Podophyllotoxin and the strong water of Montpellier Springs in Harrogate diminish to a slight degree both the quantity and the solid elements of the bile. (7) Hot water and soda water in large amounts do not appear to increase the secretion of bile. (8) Sodium salicylate increases the excretion of uric acid in the urine.

Progress of Medical Science.

Knee Bursæ.—Dr. N. C. Morse (*The Railway Surgeon*, September), in an article entitled "Traumatic Bursitis of the Knee," states that, according to Gray, the normal bursæ of the knee-joint are distributed as follows: Anterior, 3: (1) the prepatellar (found between the integument or skin and the patella); (2) between the upper part of the tuberosity of the tibia and the ligamentum patellæ; (3) between the lower part of the tuberosity of the tibia and the integument, at or about the insertion of the ligamentum patellæ. To these should be added: (1) One beneath the tendon of the quadriceps extensor, at or about its insertion to the upper and anterior surface of the patella; (2) the subcrureus bursa. Upon the outer side, 4: (1) one beneath the outer head of the gastrocnemius; (2) one above and (3) one beneath the external lateral ligament; (4) one beneath the tendon of the popliteus. Inner and posterior surfaces, 5: (1) one beneath the inner head of the gastrocnemius; (2) one beneath the insertions of the tendons of the sartorius, gracilis, and semitendinosus; (3) one above and (4) one beneath the tendon of the semimembranosus; (5) one between the tendons of the semimembranosus and of the semitendinosus.

Growing-Pains.—Dr. Bennie says that "growing-pains" have been diagnosticated by him less frequently as the years rolled by, and that cases which have been classified together under this name are the following: Myalgia from fatigue: this is the commonest variety, usually about the knees and ankles after unusual exertion. They are probably due to autoinfection brought about by excessive production of effete materials in the blood and their inefficient elimination. Elevating the limbs and rubbing with the palm of the hand in a direction toward the heart, relieving venous stasis and facilitating a supply of healthy blood to the exhausted muscles, promptly quiets the pain. Rheumatism: This is second, if not first, in frequency. There are slight pain in the joints, little or no swelling, and very mild fever, and hence the true cause is recognized; but rheumatic endocarditis frequently develops in these cases. Diseases of joints and bones of the lower extremities: Cases of hip-joint disease and suppurative epiphysitis of the upper end of the fibula, diagnosed by the laity and allowed to go on untreated, are related under this heading. Fevers, accompanied by pains in the limbs, in one instance proving to be the inception of typhoid fever, constitute this class. Adenitis: Here, again, the mother still supposes that the lad of sixteen years suffered from "growing-pains," but he was treated for gonorrhœa and a sympathetic bubo. The malady "growing-pains," with its frequent concomitant growing-fever, like its congener, disorders of dentition, as a separate morbid entity exists principally as an article of faith. The complaint still maintains, however, a strong hold on the lay mind, and forms an extremely common lay diagnosis, which is often the cause of much suffering and even death.—*Archives of Pediatrics.*

Syphilis and its Relation to Pregnancy.—J. A. Quimet writes (*American Medico-Surgical Bulletin*) of the effects of parental syphilis on pregnancy, and concludes that syphilis is a powerful cause of abortion, the abortion being due to lesion of the fœtus itself or of its appendages. It occurs mainly about the seventh month. The father alone, being syphilitic, can transmit the syphilis to the product of conception. The latter is more liable to occur the nearer the moment of conception is to the beginning of syphilis. The mother may give birth to a syphilitic child while remaining free from syphilis. When the father and

mother are both syphilitic, the child rarely escapes infection. The mother, if syphilitic before pregnancy, is more liable to give birth to a healthy child the more ancient the syphilis. The nearer the syphilis approaches the termination of pregnancy, the greater chance the child has to escape infection. The child born of a syphilitic mother may come into the world presenting lesions manifestly syphilitic, or be born apparently healthy and become syphilitic only after some months or even years. Syphilis imparts no particular characteristic to the course of confinement. Mercurial treatment should be instituted at the beginning of pregnancy.

Action of Sudden Cold upon the System.—It is a curious fact, that after exposure of the body to an intense dry heat or to a heated vapor, as in the Turkish or Russian baths, when the general temperature is somewhat raised and the surface is bathed in perspiration, a cold plunge, which checks the action of the skin almost immediately, is not injurious and is decidedly agreeable. This presents a striking contrast to the effects of sudden cold upon a system heated and exhausted by long-continued exertion. In the latter instance, when the perspiration is suddenly checked, serious disorders of nutrition, inflammations, etc., are very liable to occur. The explanation of this, so far as we can present any, seems to be the following: When the skin acts to keep down the temperature of the body in simple exposure to external heat, there is no modification in nutrition, and the tendency to an elevation of the animal temperature comes from causes entirely external. It is a practical observation that no bad effects are produced, under these circumstances, by suddenly changing the external conditions; but when the animal temperature is raised by a modification of the internal nutritive processes, as in prolonged muscular effort, these changes should not be suddenly arrested; and a suppression of the compensative action of the skin is apt to produce disturbances in nutrition, very often resulting in inflammation. — Dr. Austin Flint, "Text-Book of Human Physiology," page 521.

On the Amount of Fat in the Milk of Nursing Women under Varying Conditions.—Dr. Gersoni has made two thousand analyses of the milk of three hundred and ten nursing women (*Wratsch*, 25, 1898), to determine the proportion of fat contained in normal milk, and its fluctuation under varying circumstances. As the result of his labor the following data are presented: (1) The average per cent. of fat in the milk of a nursing woman for the entire period of lactation is about 3.48. (2) This per cent. varies greatly in different women and also in the same woman, the average amount being between 0.6 and 10 per cent. (3) During the first days of the nursing-period the milk is poor in fat, averaging about 3.03 per cent.; the amount of fat then gradually increases to about 3.8 per cent.; it remains almost stationary from the fourth week to the fourth month, when it again shows a tendency to increase. The milk of young women, of primiparæ, and of delicate women is richer in fat than is that of those more advanced in years, of multiparæ, or of robust women. (4) The quantity of fat is increased by moderate muscular exercise, by strong and frequent nursing, during the menstrual period, and also in fever. (5) A low meat diet has but very slight effect on the amount of fat. (6) A low or high percentage of fat in the milk is not of itself sufficient to cause gastro-intestinal disturbance; on the other hand, a sudden increase in the amount of fat may derange the child's digestion.

Rectal Injections.—The value of flushing the colon with properly sterilized water—hot, tepid, or cold, according to the special indications present—will be readily admitted in a long list of formidable diseases, some of which may be mentioned as follows: Habitual constipation, with or without mental depression or active cerebral manifestations due to auto-infection, being so common, might be permitted to head the list; all occult nervous affections, associated or not with the uric-acid diathesis, would naturally attract our notice, as it is well known that disordered innervation is generally conducive to the absorption of poisonous products from the alimentary tract. They are also serviceable in disease dependent upon pelvic congestion, such as uterine displacements, ovarian pains, and hemorrhoids, for they contribute materially, though indirectly, to relieve the original cause, viz., hepatic insufficiency. In appendicitis, perityphlitis, and abscess, for which the amœba coli communis is now held responsible, they are invaluable. Mild and even severe cases of dysentery and diarrhœa are often brought to a favorable termination without enemata, but it is safe to say that, with appropriate diet, all cases would be decidedly benefited, and many fatalities avoided, by the adoption of simple means. Enemata should find a place in the treatment of other disorders of this character, notably in the collapse of cholera morbus, yellow fever, and cholera, as well as in the conduct of cases of pleurisy or typhoid fever.—*American Therapist.*

The Smegma Bacillus.—Dr. J. L. Miller (*Medicine*, July) summarizes as follows: (1) Over the entire surface of the body and exposed mucous membrane, and especially on the genitalia, bacilli are found which resemble morphologically and in tinctorial qualities the bacillus tuberculosis. (2) From the external genitalia they frequently gain access to the urine, especially in women, and may be a source of error in the examination of the urine for tubercle bacilli. (3) The smegma bacillus presents wide variations in size and form, thus rendering morphological differentiation frequently impossible. (4) While most smegma bacilli are more readily decolorized by any of the solutions commonly employed, occasionally they possess equal or even greater resistance than the tubercle bacillus. (5) Methods of decolorization, when acids are employed alone, are especially fallacious; acid alcohol or dilute alcohols, unless long continued, are equally unreliable. Better, but not free from error, is the use of absolute alcohol for at least five minutes; in ammoniacal urine, however, such prolonged use of alcohol may also remove the stain from the tubercle bacillus. (6) Attempts to remove the fat or fatty acids from the bacilli by ether, chloroform, or other solvents fail to furnish us with a means of differentiation. (7) We must rely on means of excluding the smegma bacillus from the urine. It has never been demonstrated in the bladder, and apparently seldom invades the deep urethra; therefore, by cleansing the external meatus and withdrawing the urine with a catheter, we can exclude this possible source of error.

A Case of Poisoning from Camphor.—Dr. A. Berkholz reports the case of a young woman who took about fifteen grams of camphor suspended in water, probably with the intent of producing an abortion (*Petersburgische med. Wochenschrift*, No. 51, 1898). There were no immediate symptoms. After about two hours there were severe headache, vomiting, convulsions, and a comatose state; the pulse was very full and strong, and respiration rapid. The patient became highly excited, screamed, sang, and tossed about; the sensorium was completely benumbed. After repeated stomach washings and the administration of chloral and bromides, improvement set in and the patient recovered in a few days. The lethal dose of camphor

is placed at from two and one-half to seven grams. The writer believes that recovery in this case was due partly to the fact that after swallowing this exceedingly large dose of camphor the patient indulged in a hearty meal, consisting chiefly of carbohydrates, and that glyco-camphoric acid, which is non-toxic, was formed in the intestinal tract. He recommends large doses of sugar as an antidote in camphor poisoning.

Cassareep: A New Remedy for the Treatment of Corneal Ulcers and Other Infectious Diseases of the Eye.—In the *Philadelphia Medical Journal*, October 29, 1898, Dr. S. D. Risley, in an original article on the properties of this new remedy, discusses minutely its origin, chemistry, physical properties, and therapy. To Dr. H. B. Chandler, of Boston, he gives the credit for calling attention to what promises to be a useful addition to our means of treating dangerous and often rebellious forms of eye diseases. The writer emphasizes a few points with regard to the employment of cassareep. He has at no time used it stronger than in a ten-per-cent. ointment. It causes no irritation, however; there seems therefore no objection to employing it in much stronger preparations. The ointment was applied freely between the lids, and the eye subjected to massage so as to distribute it thoroughly into the retrotarsal folds, and, in the corneal cases, a protecting bandage was applied. When the patients were in the hospital this was repeated three times daily; in the out-door cases, morning and evening. No other treatment was employed except the use of atropine and a wash of boric acid. In a few minutes after the application of the ointment in new cases, the discomfort was much diminished, and the improvement was usually rapid, as compared with other modes of treatment. In a case of ophthalmia neonatorum the eye was thoroughly cleansed, the ointment of cassareep applied, and a supply given, to be used three times daily at home, after the usual wash. In two days the purulent discharge had entirely ceased.

Paralysis of the Ulnar Nerve Due to a Cicatrix; Liberation of the Nerve; Recovery.—Dr. Julie (*Bull. et Mém. de la Soc. de Chir. de Paris*, t. xxiii., p. 565) reports a case of ulnar-nerve paralysis which is interesting because of the late appearance of the symptoms. The patient, a man, twenty-four years of age at the time of operation, had received, four years previous, an incised wound, inflicted with a sickle, on the postero-internal aspect of the arm, four fingers' breadth above the internal epicondyle. The wound suppurated and healed by secondary intention. There were no motor disturbances, and the light disturbance of sensation in the area of distribution of the ulnar nerve disappeared in a short time, so that two years later the patient was accepted as a dragoon in the army. During the following year the hand began to get thinner; sensation was diminished, so that finally he could not hold the bridle reins of his horse; there was almost complete paralysis of the hand, with marked atrophy of the interossei, the adductor pollicis, and hypothenar group of muscles. At the seat of injury and in the course of the ulnar nerve there was a swelling, the size of a nut and of fibrous consistence. Extirpation of the cicatrix under cocaine anæsthesia was followed by complete recovery after three months.

Two Cardinal Points in the Treatment of Acute Urethritis.—Dr. P. G. Unna (*Monatshefte f. praktische Dermat.*, xxvii., 1) sees an important ground for the uncertain prognosis of specific urethritis, in the fact that the usual irrigation method is employed during the day only. During the night the secretion accumulates in the urethra, owing to the diminished amount of micturition and the unfavorable effect of the bed temperature on the discharge. He advises the early use of the irrigation, which should be employed every two hours, day and night (even if it is necessary to use an alarm clock), so long as there appears a morning discharge. After this the injection should be employed every three hours, day and night, for a whole week. During the following week, if the condition is not changed, the interval between the irrigations should be increased until finally once a day suffices. The author reports very gratifying results from this method during the last few years.

Acute Infectious Myelitis Following Influenza.—Drs. Apostoli and Plauet (*Rev. de Méd.*, July) conclude as follows: (1) During the course of an influenza there may occur numerous nervous disturbances and manifestations which depend upon either a myelitis or a peripheral neuritis. (2) The "grippe" myelitis belongs in the category of acute infectious myelitis, just as does the acute syphilitic myelitis. An anatomical lesion is not found; the spinal cord seems to be affected by the action of the bacteria or their toxins. (3) The acute myelitis of the grippe may run its course with the clinical picture of a systemic disease—Charcot's amyotrophic lateral sclerosis. (4) In contradistinction to the latter, the acute myelitis of influenza as well as the acute syphilitic myelitis may heal entirely. (5) In the acute infectious myelitis we are dealing with dynamic disturbances, whereas in the systemic disease there exists a destructive process.

Studies of the Gonococcus and Gonorrhœal Vulvo-Vaginitis of Children.—Of the available culture media for the gonococcus the writer preferred that of Heiman (serum agar) and that of Kiefer (serum of ascites and pepto-glycerin-agar). The gonococcus is aerobic; it thrives best at from 36°–37° C. If the gonococcus is allowed to grow at the ordinary room temperature in serum agar it soon perishes. At the body temperature its existence is very variable, death occurring within from one to six weeks. In order to differentiate the gonococcus from the diplococcus, which is also stained by the Gram method, the writer resorts to the culture process in a variety of media. The results of the inoculation of the gonococci into the conjunctiva of new-born puppies were so varied in the different cases that the writer could not advise this method as at all diagnostic. Injection into a joint, however, always gave a constant reaction. The irritating material is present in the protoplasm of the gonococcus, for a filtered culture gave a negative result. Injection into the peritoneum of mice and guinea-pigs was soon followed by death of these animals. Post-mortem examination always showed tumefaction of the spleen but no local affection. The poisonous properties are destroyed either by drying, pulverization, or by heating up to 120° C. The writer has seen in six years seventy cases of vulvo-vaginitis in very young girls; of these sixty-five were gonorrhœal. In forty-two of these cases the microscopical examination showed positively the presence of the gonococcus in forty of them. In the remaining twenty-eight cases cultures in serum agar were made; three of these, by cover-glass preparations, gave a negative result; the remainder (twenty-five) were positive. Four of the five non-gonorrhœal cases ran a much shorter course than did those of the gonorrhœal type. There was only a single case which simulated the gonorrhœal type in its clinical aspect without showing the presence of the gonococcus. The writer supposed that the child had a chronic gonorrhœa with an acute exacerbation. Forty-seven of the cases were from two to six years old. Only two cases were shown to be the result of direct infection; fourteen cases were infected at the hospital; fifteen at home; and in twenty-

nine the origin of the infection could not be traced. A small epidemic was caused in one hospital by an infected thermometer. As the disease remains localized in children, the prognosis is much more favorable in them than in adults.—Lyder Nicolaysen, *Christiania Norsk Magazin f. Lägevid. Ergänzungsheft*, 1898.

Bolognini's Sign in Measles.—Dr. Bolognini has described as an early symptom in measles a peculiar rubbing or crackling sensation imparted to the flat hand placed upon the abdomen of the patient, whose legs are held fully extended. With the abdominal muscles thus on the stretch and the flat hands on either side of the abdomen, gradual, gentle, yet increasing pressure is made with the tips of the middle three fingers, alternately upon the right and left sides. The light rubbing or grating sensation is ascribed by Dr. Bolognini to the rubbing together of the visceral and parietal peritonei, which, he thinks, are the seat of an erythematous eruption, similar to that which exists on the skin at a later date. Sometimes this symptom is localized in certain areas of the abdomen, at other times it is general; the symptom is found early, before the development of the cutaneous eruption, and exists for some time. Recently Dr. A. Köppen-Norden (*Münchener med. Wochenschrift*, 1898, S. 897) had an opportunity to study this symptom in an epidemic of measles affecting three hundred and sixteen children. He agrees with Dr. Bolognini in that the symptom is frequently present, but believes the sensation of crepitation imparted to the fingers is due to minute particles of air in the intestine itself. The intestine, he claims, is the seat of a catarrhal inflammation, and contains more or less fluid and air bubbles. He says that the crepitant sensation passes gradually into a wave of larger calibre and finally assumes the character of ordinary intestinal rumbling. Many of the children examined by the writer had diarrhœa.

Purulent Discharge from the Nose; Clinical Significance and Differential Diagnosis.—Dr. George E. Shambaugh, in an article on the above subject, concludes as follows: (1) Purulent discharge from the nose is a common symptom of intranasal disease. (2) Its presence may be detected by the patient, but often he complains only of secondary symptoms produced by the pus. (3) Older writers described all these cases as "purulent rhinitis," etc., and never suspected what we now know to be true, that in the majority of cases the pus has its origin in one of the accessory cavities of the nose. (4) Pus in the nose may come from (I.) disease in the nose itself; (II.) suppuration in the accessory sinuses, or (III.) suppuration in the post-nasal space. (5) The diseases in the nose are: (*a*) purulent rhinitis—found in children in acute infectious fever, in acute rhinitis, and in gonorrhœal infection; (*b*) ulceration—either traumatic (as the erosion in the anterior nares; idiopathic perforation; ulceration due to the action of chemical agents, foreign bodies, larvæ of insects; and perichondritis), or tuberculous or syphilitic. (6) The diagnosis of diseases in the nose producing purulent discharge is not especially difficult when we keep in mind the associated general condition and study carefully the nature of the ulcer itself. (7) The accessory sinuses of the nose form two groups. The first group, including the maxillary and frontal sinuses and the anterior ethmoid cells, opens into the middle meatus of the nose. The second group, including the sphenoid and posterior ethmoid cells, opens into the olfactory space between the middle turbinated and the septum. (8) A differential diagnosis of diseases of these cavities is one of the most difficult problems in rhinology. It requires a knowledge of the whole field of the technique of intranasal examination and a thorough knowledge of the complicated anatomy of the nose and its accessory sinuses. (9) The diagnosis of a complicated case of accessory-sinus trouble is not made at one sitting, but only after repeated examinations lasting over a considerable period of time.—*Medical Standard*, September.

Serpents and their Venom.—In an interesting article in the Cincinnati *Lancet-Clinic* of September 3d, under the above title, Dr. B. Merrill Rickets, in treating of the results of the bites of the venomous serpents of this country, arrives at the following conclusions: (1) The copperhead, coral, and rattlesnake are the only serpents in the United States which possess fangs at the base of which is a sack containing a poisonous fluid. (2) The result of inoculation depends upon the dose, and the size of the human being or animal. (3) Most of the authentic cases of death by these serpents have been among children. (4) No authentic death, as the result of the bite of either one of these snakes, has been found in the adult man by myself. (5) If death does not result within a few hours, it is not the venom, but other agencies, that produce it. (6) The bite of the cobra is not so deadly as is generally supposed. (7) Overstimulation from alcohol and other agencies is, I believe, oftener the cause of death than is the virus inoculation. (8) The effect upon the body is more severe if the virus be injected into blood-vessels. (9) There seems to be no subject which is surrounded by so much uncertainty and exaggeration.

The Relative Value of Iodine Salts in the Treatment of Syphilis.—(1) All the iodides possess marked antisyphilitic properties. (2) Iodide of potassium is, as a general rule, the most active, but iodide of rubidium is often better tolerated, and seems to be of equal value. (3) When iodide of potassium is not well tolerated, recourse should be had at once to iodide of sodium, which usually proves an efficient substitute. (4) Iodide of strontium has no advantage, and should be avoided in syphilitic headache. (5) Iodide of ammonium ought to be reserved for certain severe cases of syphilis in which iodide of potassium has failed or produced but little effect; it is particularly serviceable in tertiary eruptions. (6) Iodide of lithium or of calcium acts more slowly and less surely than the above-mentioned preparations.—Briquet, *Jour. des Mal. Cut. et Syph.*

Typhoid Pneumonia.—The term typhoid pneumonia is commonly used to designate cases with adynamic symptoms, and it is to be distinguished from those cases in which typhoid fever begins with a definite pneumonia, the so-called pneumono-typhus of foreign writers.—Osler.

The term typhoid pneumonia is one in common use by many who have no definite notion of its meaning, and, like the term typho-malaria, has occasioned confusion. In the first place, the case may begin as a lobar pneumonia, the intestinal symptoms appearing at the end of the first week or later, at which time also the spots may appear, establishing the diagnosis, while the usual crisis of pneumonia fails to make its appearance. Again, a pneumonia may supervene in the second or third week of typhoid fever as a complication in which the true relation is less difficult to determine. Finally, there may be a true pneumonia, to which stupor, a dry tongue, and general adynamia may be added, without the distinctive lesions of typhoid fever. This is true typhoid pneumonia, which it may not always be possible to separate from the typhoid fever beginning with a pneumonia. Each form of pneumonia may be caused by the typhoid bacillus or by the pneumococcus.—Tyson.

MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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THE NATIONAL QUARANTINE CONVENTION.

IT is quite evident from the resolutions adopted at the meeting of the National Quarantine Convention held last week at Memphis, Tenn., that the question of establishing some form of national quarantine will be duly advocated during the coming session of Congress. The stand to be taken will be not so much the actual necessity of the measure as the adoption of practical methods for the imperative end. The medical profession for years has discussed the subject from many points of view and has been educating public opinion in the right direction as to the necessity of change in present methods, and there is no argument against the opposers of the scheme which has not been definitely answered even to the satisfaction of the various legislators who in their turn have had the matter in hand.

The main trouble in determining the application of the general principles involved has centred in a want of reasonable agreement as to plans of detail working urged by rival medical bodies. It is still to be demonstrated whether or not the differences of opinion on minor points of organization of the proposed national board are not as radical and as pronounced as ever. If the history of last year's legislation is to be repeated, the struggle may go on indefinitely. The Spooner and the Caffrey bills, although both governed by the same general principle of national control of quarantine, were the two measures which ranged themselves in fierce and determined opposition against any compromise or agreement that would reconcile clashing and belligerent interests.

The resolutions of the recent convention give some indication, so far as can be seen on the surface, of a position of compromise between the rival parties of last year. The recommendations are eminently proper in their way, and it only remains to prove how they can be practically carried out to meet all the general and detail requirements of the proposed new bureau. So far as the convention itself was concerned, there was a general unanimity of opinion regarding the fundamental principles involved, which was expressed in the following:

"*Resolved*, That there be established a national bureau of public health in the department of the treasury of the United States; that the administration of all the public health functions now exercised by authority of the United States be placed in charge of this bureau; that the sanitary authorities and commercial interests of the several States of the Union be brought into immediate relations with the bureau and be given a due share in the power and responsibilities of the control board, through the agency of an advisory council, consisting of one member from each State, to be appointed by the authorities of the several States."

While it is eminently proper that the new bureau should thoroughly represent the varied interests of all parties involved, there is a threatened danger of cumbersomeness of action if, as is contemplated, each State is given the power to interfere with the purely executive functions of the board. However, it is too soon to discuss this phase of the question, in view of the fact that the present proposal is a mere preliminary of what will appear later.

ALOPECIA AREATA.

ONE of the most interestingly tantalizing affections of the outer surface of the human body is that form of baldness to which Celsus gave his name so many years ago. Effort upon effort has been expended in attempts to demonstrate the etiology, not alone that the rational treatment might follow, since in time in the majority of instances recovery ensues under one or another of the thousands of hair tonics recommended, but from a scientific desire to do away with the uncertainty surrounding the matter and establish definitely the belief of one investigator in the neurotic, or that of another in the parasitic theory. When authorities disagree, it is the privilege of the outsider to form his own conclusions, and thus there have arisen several rather widely differing beliefs in regard to the matter.

Both the subject of alopecia who finds himself gradually losing hair until his surface comes to resemble that of the Mexican hairless dog, and the physician who is intrusted with the problem of how to readorn the sufferer with a presentable hirsute covering, know, as none others can, the serious side of the question. Despair may drive the patient into insanity and the doctor almost to suicide. For a long time French dermatologists have maintained that *la pelade* belongs in the group of contagious diseases, and in England this view has had among its strongest supporters Hutchinson and Crocker, while Aldersmith, the appearance of whose recent work on ringworm and alopecia we have had occasion to note, remains a firm opponent. In this country opinion has been divided, and many have clung to the nerve-origin theory, finding it impossible to reconcile instances of rapid loss of hair from the entire body, or universal alopecia, with the invasion of the skin by a micro-organism; the inability to discover a parasite similar to that producing ringworm baldness; and the fact that certain supposed instances of contagion and epidemic prevalence of alopecia have been found to depend in reality upon the ringworm fungus itself, which had caused a misleading form of bald ringworm. Nor have all observers been led away from their beliefs by the recent discoveries of Sabouraud, in France, who would

make of alopecia areata and seborrhœa oleosa essentially identical processes, depending upon the same micro-bacillus, alopecia being in reality an acute local seborrhœa. While it is not beyond the realms of possibility, one hesitates to accept a single micro-organism as the cause of two so clinically dissimilar processes. It is naturally asked why the one is so common while the other is relatively rare, and, as Aldersmith says, seborrhœa is rarely seen in ordinary alopecia areata, and he puts the question, Why should the patches so often be symmetrical?

The simple way of looking at the matter would seem to be to accept two forms—one depending upon nerve changes and including those instances which follow injury to definite nerves and general shocks; the other due to a parasite, whose identity is as yet not positively proven. Then one must bear in mind that there is a form of trichophyton disease which is capable of producing rounded areas of smooth baldness not to be distinguished by the eye from alopecia, and that this form occurs more commonly on the adult scalp than has been supposed.

Sabouraud makes one therapeutic suggestion as the result of his very extensive and remarkable investigations—the employment of sulphur, incorporated with such fatty substances as will mix readily with the fats of the skin.

Indeed, parasiticides have always, we might say, seemed to produce better results than applications having no antiseptic properties. Just as is the case in ringworm, chrysarobin has been for a long time a useful remedy. Corrosive sublimate has been recommended as an injection, five drops of a two or five per cent. solution at a time (Moty); and recently Panichi, of Florence, has advocated making isolated punctures about the circumference of the patch, every four or six days, with a hypodermic needle steeped in a mixture of carbolic acid and tincture of cantharides, while the same mixture (one part of carbolic and two parts of cantharides) is to be painted over the bald surfaces on the intervening days. Formic aldehyde, in forty-per-cent. solution, or formaldehyde, likewise called by the trade names of formalin and formol, which has been successfully used by some in the treatment of ringworm of the scalp, has also been tested—as it naturally would come to be in this affection—and some patients have recovered under its employment in a comparatively brief time. Unless suitably diluted, it is too irritating for the skin of most persons; but in the proportion of one to four it may be used in the form of a liquid application or as an ointment, especially one made with lanolin. Whenever practicable, the application of such powerful remedies should be made by the physician himself.

In one of the most recent skin publications, the last edition of Hyde's work, considerable stress is laid upon general hygienic management and internal therapy. Among other good suggestions is one that the patient should wear a wig for its moral effect when the hypochondriasis peculiar to the involvement of extended areas on the scalp begins to be manifest.

We spoke above of the affection driving the patient to the verge of insanity, and this feature gives to it the importance of being a much more grave disorder than many might accord it. Though the hair of the insane is popularly supposed to be abundant, coarse, and wiry, no doubt asylum physicians are familiar with those instances in which there is almost constant dread that the hair, though perhaps only somewhat thinned, will be entirely lost.

THE "CHINK KILLER."

A LAW is urgently needed to apply to the small boy of this town with his slingshot. Many persons have been injured by the stones thrown, and when one thinks f the size or number capable of being projected by some of the weapons sold in toy shops, the wonder is that fatal casualties are not reported. Chinamen and Hebrew peddlers are the greatest sufferers. But last fall it was unsafe for a cyclist to ride through many of our streets and avenues during recess time, and the police seemingly ignored the dangerous practice.

THE TREATMENT OF PNEUMONIA IN CHILDREN.

THE symposium convened by the chairman of the pædiatric section has done practitioners a great service, in that it has presented the modern treatment of this disease so clearly that there can be no misconception. There existed a consensus of opinion upon the importance of absolute quiet, best obtained by complete isolation from other children; upon the need of careful nursing and abstaining from meddlesome attention which interferes with rest; upon the value of ventilation to afford the child an ample supply of natural oxygen. There seemed to be unanimity also upon the harmfulness of active medication, especially with opium, nauseants, and antipyretics; also upon the necessity for care in the resort to stimulants. The hot poultice and cough mixture were inveighed against as relics of barbaric therapeutics.

Two of the speakers pithily expressed the object of the treatment of the pneumonia of children to be "to treat the child and not the disease"—to enhance the resisting power of the patient's organism by removing all debilitating influences and strengthening cardiac action.

Upon only one point was there a diversity of opinion. All the speakers referred with more or less approval to baths, the temperature of which ranged from 70° to 100° F.; and one speaker advised the wet sheet cooled by rubbing ice over it. This diversity in temperature and method of applying water is explained by the fact that all but one of the speakers advocated the remedial agent for the reduction of high temperature. The latter advised the mildest baths, the lowest temperature of which was 80° F., claiming that in pneumonia the resistance to temperature reduction is so diminished that great caution should be exercised with regard to low bath temperatures. He insisted that it is the chief object of the baths to neutralize the effect of toxæmia and stimulate the heart. Another

speaker, on the other hand, warned against all baths, warm or cold, when the heart action is feeble, stating that he regarded 70° F. as a warm bath. This may account for his warning, for a bath of 70° F. for five to ten minutes, whether it be regarded as warm or cold, would be a heroic measure for a child suffering from pneumonia.

The happy mean advocated by a majority of the speakers would seem the safest and wisest proceeding.

The section is to be congratulated upon the felicitous presentation of every aspect of this important subject.

News of the Week.

Dr. Louis Bauer, of St. Louis, died in this city on November 5th, at the age of eighty-four years. He was born in Stettin. He was obliged to leave Germany because of his political principles, and went first to London, where he obtained the license of the Royal College of Surgeons in 1852. Soon afterward he came to this country, and began to practise in Brooklyn, where he remained for fifteen years, removing to St. Louis in 1869. He was one of the pioneers in orthopædic surgery in this country, and was also known as a medical educator, having been instrumental in establishing the Long Island College Hospital Medical School and the St. Louis College of Physicians and Surgeons. He was dean of the latter school up to within a few years. He was editor for some time of the *St. Louis Clinique.*

Dr. Vincent Gomez, recently of Brooklyn, has been appointed mayor of Gibara in Cuba, by General Wood.

"The Medical and Surgical Review of Reviews" is the name of a new journal published in London, under the editorial management of Dr. Nathan E. Boyd. The first number, which bears the date of October, 1898, is well gotten up and contains numerous careful abstracts of the leading articles in the current British and some foreign journals.

The Latest Tuberculosis Antitoxin is one announced as discovered by Dr. J. Denys, professor of pathological anatomy and bacteriology at the University of Louvain. The discoverer, of course, claims that it is effective.

The Plague Outbreak in Vienna is over, the last patient having recovered. Dr. Rudolph Poch, who treated those attacked, shutting himself up in the pavilion with them, has received from the Emperor of Austria the Knight's Cross of the Francis Joseph Order, in recognition of his bravery and devotion.

Preparing for an Attack of the Antivivisectionists.—At a recent meeting of the joint committee on vivisection of the scientific societies of this city, the following resolution was adopted:

"*Resolved*, That the secretary be authorized to call the attention of the prominent medical and scientific journals of the country to the importance of the meeting of the American Humane Society, to be held in this city in December *proximo*, and to request that editorial notice be taken of the danger that the influence likely to be exerted at that meeting may cause the vivisection bill now pending in the senate to be called up and passed."

The physicians throughout the country may aid greatly in the defeat of this oppressive measure by writing to their respective senators and representatives in regard to the matter, and urging upon them the desirability of voting against the bill when it comes up in either the senate or the house.

The Death of Dr. Philip Arthur Malleson.—At a meeting of the Harlem Medical Association, held November 14, 1898, it was unanimously—

"*Resolved*, That the members of this association deeply deplore the sudden and untimely death of their fellow-member and president, Dr. Philip Arthur Malleson;

"*Resolved*, That we bear him in fond remembrance for his kindly demeanor and sense of justice in his office, his geniality to his friends, his sympathy for the sufferers intrusted to his care, and for his attainments as a physician, which were of a high order;

"*Resolved*, That we tender our respectful and sincere condolences to his family; and be it further

"*Resolved*, That we cause this expression of our regard and esteem to be published in the medical journals of this city.

"Emil Mayer, William Westerfield, W. H. Stewart, *Committee.*"

The Plague in Russia.—Much concern is felt at the breaking out of the bubonic plague in a village in Samarcand, in Russian Turkestan, for it is feared that it may be imported thence into European Russia. The military authorities have established a close sanitory cordon around the infected village, suspected cases are promptly isolated upon the appearance of the slightest symptoms, and the clothing and furniture of those dying of the disease are burned.

The Anti-Cigarette Law in Tennessee.—The supreme court sitting at Nashville has made a decision concerning the validity of the anticigarette law passed by the Tennessee legislature last year. The court has decided that cigarettes are not legitimate articles of commerce, and therefore are not within the provisions of the federal constitution regarding trade. The cigarette manufacturers will probably carry the case to the United States supreme court.

Famine threatens the inhabitants of Astrakhan in the valley of the Volga, or rather already exists in that region. The Russian government has so far, however, prevented any widespread suffering by the distribution of large quantities of wheat brought from Siberia, and by the employment of many of these peasants in the construction of irrigation canals.

The Newark Eye and Ear Infirmary was recently the recipient of a gift from Mr. J. A. Coles of $1,000, in memory of his father, the late Dr. Abraham Coles. The donor stipulates that the "principal is to be kept permanently invested by the trustees of the infirmary,

and to be known as the Dr. Abraham Coles' surgical fund, the interest only to be used for the purchase of instruments of the best and most approved workmanship."

The Medical Society of the County of Kings.—The cornerstone of the new building of this society was laid in Brooklyn on November 10th. The building will be of three stories in the colonial style, facing Grant Square.

The Recent Yellow-Fever Visitation.—The Marine Hospital service has issued a statement, showing the total number of yellow-fever cases in the United States during the season just closed as 2,456, with 115 deaths. In Louisiana there were 1,470 cases, with 51 deaths; mortality, 3.47 per cent. In Mississippi, 985 cases, with 63 deaths—a mortality of 6.40 per cent. In New York, 1 death, that of Colonel Waring; and 1 death from alleged yellow fever in Washington. The mortality was very low, and the mildness of type of the disease in no way justified the senseless panic which it raised among the State officers and others in Mississippi.

The Pasteur Institute at Lille, in France, has received a donation of 250,000 francs ($50,000) from its director, Dr. Calmette. According to the stipulation of the donor, the money is to be loaned for the defraying of building expenses till the municipal council votes the sums required for that purpose. The money is then to be employed in the purchase of material for new researches, or for scholarships for young men who wish to make original researches in the laboratory. The sum given to the institute represents the profits accruing to the donor from the application of one of his discoveries in a large distillery at Seclin. Dr. Calmette is made of different stuff from the once respected Behring.

The Fordyce Barker Memorial Bed.—Mrs. E. L. Barker, the widow of Dr. Fordyce Barker, died recently in Connecticut, leaving in her will a bequest of $5,000 to St. Luke's Hospital in this city, to endow a free bed in that institution in memory of her husband and son.

Dr. Mary H. Murray has been appointed, by the board of health of New York City, medical inspector of the twelve public schools in the third ward of the borough of Queens.

The Connecticut Medical Law.—The members of the three medical examining boards of Connecticut, appointed under the new law, have agreed that all examinations of candidates in that State must be written in English, and that at least seventy-five per cent. of the answers must be correct, to enable a candidate to pass. Conditions will be allowed, if not more than two branches are below seventy-five, and if the general marking is not below fifty. About forty per cent. of the candidates this year failed to pass the examinations.

A British Plague Commission.—The British government has appointed a commission of scientific experts to India to investigate and report on the disease. The commission will consist of Drs. Thomas R. Fraser, of Edinburgh; Wright, of Netley; and Ruffer, of the Egyptian sanitary commission. They will be accompanied by two officers of the Indian civil service, who have had personal experience of the plague. An inquiry will be made into the origin of the various outbreaks of plague and the manner in which the disease is communicated. The commission will also make a comparative study of the various orrhotherapeutic measures that have been proposed and tried in India and elsewhere. The members of the commission have sailed for India, and it is expected that they will begin their labors in Bombay about the end of the present month.

The Sixth International Otological Congress will be held in London, on August 8, 9, 10, 11, and 12, 1899, under the presidency of Dr. Urban Pritchard, professor of otology at King's College, London. The meetings will be held at the Examination Hall of the Royal Colleges of Physicians and Surgeons, Victoria Embankment. The subject chosen for special discussion is "Indications for Opening the Mastoid in Chronic Suppurative Otitis Media." A British organization committee has been formed, the treasurer being Mr. A. E. Cumberbatch, 80 Portland Place, London, W.; and the honorable secretary, Mr. Cresswell Baber, 46 Brunswick Square, Brighton. The International Otological Congress, which assembles every four years, met last in Florence, where a very successful gathering was held under the presidency of Professor Grazzi.

Preparing Infants for Slaughter.—It will not be many years before the town of Keighley will be the scene of a small-pox epidemic that will surpass that at Gloucester in the Jenner centennial year. The place is one of the many strongholds of the antivaccination cranks in England, and the inhabitants are availing themselves to the full of the "conscientious objection" clause in the recent vaccination act. In one day 690 parents applied for exemption certificates for 1,670 children, and on another day 800 exemptions were granted. Altogether over 3,700 exemptions were granted. Fortunately the absurd vaccination law, which is worse than no law, since it is ridiculous, applies only to England, and not to Scotland or Ireland.

Innocence ?—A diploma mill in the West has been seeking to place its advertisement with a number of our contemporaries. We have seen the ad. printed as such in but one journal, but several with much apparent indignation have commented editorially upon the impudence of the advertiser, and, to show what a brazen-faced impostor the diploma manufacturer is, they print his advertisement, address and all!

Osteopathy.—The following lucid exposition of the principles upon which this medical "system" is based has been found somewhere by the editor of the *Medical Standard*. We commend it as a mnemonic exercise. "Osteopathy has been technically defined as: 'That science which consists of such exact, exhaustive, and

verifiable knowledge of the structure and functions of the human mechanism, anatomical, physiological, and psychological, including chemistry and physics of its known elements, as has made discoverable certain organic laws and remediable resources, within the body itself, by which nature under the scientific treatment peculiar to osteopathic practice, apart from all ordinary methods of extraneous, artificial, or medicinal stimulation, and in harmonious accord with its own mechanical principle, molecular activities, and metabolic processes, may recover from displacements, disorganizations, derangements, and consequent disease, and regain its normal equilibrium of form and function in health and strength.'"

The Happy Result of a Mistaken Diagnosis.—A young physician in a neighboring city, who was looking forward to the joys and sorrows of matrimony, was recently taken ill, and a physician decided that he had appendicitis and that it would be necessary to have an operation performed. His condition became worse, and it was finally determined that the marriage should take place at once. This was done, and then it was found that the case was not one of appendicitis and an operation would not be necessary. The patient was thus made twice happy over one mistake.

St. John's Guild.—At the annual meeting of St. John's Guild, held in this city a few days ago, it was decided to construct another floating hospital, in order to accommodate the hundreds of babies and their mothers who have often to be deprived of the benefits of an excursion for want of room. The report of the floating hospital committee showed that the following work was done during the season which opened on July 6th and closed on September 10th: 60,144 children and their mothers treated on floating hospital; 11,403 baths given on floating hospital; 2,507 children and their mothers treated at Sea Side Hospital; 17,350 days of hospital treatment; 216 children treated at Children's City Hospital; 6,501 hospital days; 1,959 children attended by special relief department, and 6,464 visits made. The daily average attendance on the floating hospital was 1,273, and on one occasion as many as 2,000 women and children were carried in a single day. Throughout the season there was never an accident or a mishap of any kind.

The Centennial of the Lying-in Hospital.—Next year it is purposed to celebrate the one hundredth anniversary of the establishment of the New York Lying-in Hospital. The hospital was opened in a building in Cedar Street in the summer of 1799, De Witt Clinton and Alexander Hamilton being among the founders. Work in the erection of a new building, the gift of Mr. J. Pierpont Morgan, will soon be begun, and it is expected to be completed in time for the centenary of the hospital.

Koch's Latest Error.—Dr. Koch's tendency to jump at conclusions on insufficient evidence is well shown in his assertion that "black-water fever" is merely quinine poisoning. Apparently because he never found the malarial parasite in such cases, therefore they are not malarial. Sometimes his patients denied that they had taken quinine, but "these statements are, for obvious reasons, unreliable." Koch refrained from telling his audience all his reasons for coming to so remarkable a conclusion, but he assured them that they were completely conclusive, and went on to say: "I am convinced that when this view has gained more ground, and when the tropical doctors learn to use quinine somewhat more cautiously, and perhaps to use other medicaments—arsenic or methylene blue, for instance—in suitable cases, black-water fever will vanish altogether from the category of the tropical diseases proper." The rarity of hæmoglobinuric fever in India would alone be enough to prove the impossibility of this view, even if one could bring one's self to believe that the large number of able medical men practising in the tropics could by any chance have overlooked so striking a connection as that between quinine poisoning and hæmoglobinuria would be. —*Indian Medical Gazette.*

The Anglo-American Medical Society held its annual meeting in Paris last month. This organization embraces members located and engaged in active practice in all the principal cities and health resorts of Europe and Northern Africa, and was founded on a social basis, "to serve as a bond of union between British and American practitioners established on the continent of Europe and Northern Africa." No one is eligible to membership who does not possess a French qualification. The honorary presidents for Great Britain and Ireland are Lord Lister, Dr. Samuel Wilks, F.R.S., and T. W. Nunn, F.R.C.S.; for the United States, Drs. J. S. Billings, S. Weir Mitchell, W. M. Polk, A. Jacobi, and E. L. Keyes.

The Cincinnati Presbyterian Hospital was opened on November 1st. This model structure will replace the old hospital, which was in reality nothing more than a large house converted into a hospital building, and lacked most of the conveniences necessary for operative work. The new building is the gift of Mr. and Mrs. Alexander McDonald, and, while small, is very complete in its appointments. It is a four-story building of brick and stone. On the first floor are all rooms necessary for an out-patient department and a chapel. Two free wards, male and female, occupy the entire second floor, and will accommodate about twenty-five patients. The third and fourth floors are devoted to private rooms which have been endowed by different people, and the operating-room on the third floor is quite a feature of the building. It is finished in marble and mosaic, and furnished with a fine case of instruments. The exercises of dedication consisted of a Scriptural reading by Mr. McDonald; a prayer by Rev. Peter Robertson; a dedication hymn by Mrs. Alice Griswold Huston; remarks by Messrs. Bartholomew, McKibben, and Baker; a description of the building by President William H. Taylor, and benediction by the Rev. Mr. James. Governor Bushnell was present at the dedication and at the reception which followed. The profession of Cincinnati was represented by a full attendance of the prominent physicians.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Anniversary Meeting, November 17, 1898.

EDWARD D. JANEWAY, M.D., PRESIDENT.

Anniversary Discourse: Landmarks in the History of Pathology.—PROF. WILLIAM H. WELCH, M.D., LL.D., of Johns Hopkins University, delivered this address He said that when the Academy of Medicine was founded, fifty-two years ago, an unexampled era of scientific investigation and progress had begun. It was just forty-three years ago since Dr. John Watson delivered his justly celebrated discourse before this academy on "The Medical Profession in Ancient Times." After showing that what was termed Hippocratic medicine included the work and writings of a number of men, the lecturer turned to the consideration of that other great father of medicine—Galen. He said that Galen's system was founded upon an elaboration of the Hippocratic humoral doctrine, and was the essence of the later humoral pathology. Galen was the greatest of ancient anatomists, and he, and not Harvey, was the founder of experimental pathology. But in the absence of morbid anatomy he could not make fruitful application of the principle which long afterward was elaborated by Morgagni. Nevertheless he clearly stated that it was his custom to examine the part affected in disease to determine the reason for the impairment of function, and from such information to draw conclusions regarding treatment. He was not permitted to dissect the human body, and his conclusions from his anatomical studies on the lower animals were not particularly happy. Until the revival of learning in the fifteenth century the minds of physicians were bound by the fetters of Galen's doctrines; yet, under the circumstances, this thraldom was not an evil. Early in the sixteenth century appeared that turbulent genius, Paracelsus. There was in this man something of the prophets of old, together with a yearning to extract the secrets of nature. He introduced into medicine new and revolutionary ideas, and his alchemy was the foreshadowing of modern chemistry. Rejecting anatomy as worthless, the beginning and end of his striving were the cure of disease, and for practical medicine his therapeutic innovations were of much significance. He conceived disease to be something entering the body as a seed or germ—a conception of special interest in our day. The real glory of medicine in the sixteenth century was the development of the study of human anatomy, and with this was associated the name of Vesalius. It was the anatomists of the sixteenth century who led medicine into the paths of true science. Although the authority of Galen was undermined by the demonstration by Vesalius that he had made certain important errors, the complete overthrow of his authority did not take place until the time of Harvey. A work published in 1506 was the first one containing systematic observations in morbid anatomy. The physicians of this period seem to have met with obstacles in securing autopsies. In 1627 was published to the world the greatest event in the history of medicine—the discovery of the circulation of the blood. It was a triumph of the experimental method, yet one of the most singular of the many delusions of the opponents of vivisection was that Harvey had not been led to his discovery of the circulation of the blood by his experiments on animals. The influence of this discovery on pathological and practical medicine was before long manifest in new and better conceptions of disease. One of the early effects of the discovery was the introduction of physical conceptions in medicine, and then, for the first time, the physicians began to count the pulse, measure the temperature of the body, and use the balance in physiological experiments. One of the most interesting phenomena toward the close of the seventeenth century was the introduction of the study of microscopical anatomy by such men as Malpighi. They made use of the simple microscope, and yet with even this instrument were able to make such discoveries as those of the spermatozoa and the blood corpuscles. Malpighi was the great representative of this school. It was curious, the speaker said, that this period of development of microscopical anatomy was so short; it was limited by the powers of the microscope of that time, and disappeared soon, only to be resurrected in the present century. The speaker next referred to Sydenham as the most honored name connected with English clinical medicine. His writings, he said, were by no means free from theories and doctrines, but they did not in the least obscure the pure practical observations of disease met with throughout all of his works. He did not construct any system of medicine, but the minds of physicians were still desirous of systems. The rise of the systemists characterized the first half of the eighteenth century. The legitimate successor of Vesalius and Harvey in medicine was Haller whose work, published about the middle of the eighteenth century, was the foundation of modern physiology. He introduced the great conception of the irritability of the tissues. Here really for the first time was recognized the fundamental property of living tissues—a vital phenomenon which could be studied. Malpighi was the great founder of pathological anatomy. Post-mortem examinations began to be made as far back as the fifteenth, and even the fourteenth, century; they were done in a very unsystematic manner, and the records of them show that these investigators had no very clear understanding of the relation of these observations to pathological medicine. But Malpighi approached the subject in an original way, and with entirely different results. He was searching for the real seats and causes of disease. He treated systematically of the diseases of the different regions of the body, one after another. His work, therefore, marked the beginning of the physical basis of scientific pathology. From the time of Malpighi the development of this side of pathology had been continuous, and the influence of his writings was almost immediate. Toward the end of the eighteenth century one found the name of John Hunter. Hunter was a pathological physiologist as well as a pathological anatomist; he was searching not only for the alterations in structure of diseased organs, but also for the changes in function. He was particularly interested in the study of the blood in morbid conditions —sometimes spoken of as "hæmopathology." He was impressed especially with what he called "the vitality" of the blood. He observed, for example, that the blood taken fresh from human beings or from animals, even when mixed with putrid material, remained fresh and uncontaminated, and he was, therefore, led to believe that there was something in living things which resisted putrefaction and decomposition. It was now known that that phenomenon was due to the presence of the so-called bactericidal substances in the blood. A nephew of John Hunter, Matthew Bailey, wrote one of the most attractive books in pathological anatomy. He was the first to illustrate morbid anatomy. Just at the end of the last century the great Bichat entered upon his career. His great works were all practically written within four years. He was a vitalist, and believed that physical and chemical forces took no part whatever in vital phenomena. Aside from his theories and speculations he gave wonderfully vivid descriptions of the tissues of the body. He was the founder

of general anatomy, and he brought the study of disease processes one step nearer the goal; *i.e.*, from the organs to the tissues. He made a great impress upon his contemporaries, and immediately after him sprang up the great French school. The first three decades of the present century were unquestionably the most splendid in French medicine, but about this time the study of pathology passed largely from the French to the Vienna school, and then there came on the scene Rokitansky, the greatest descriptive pathological anatomist who had ever lived. His experience was simply enormous. It was said that at the time of his retirement from the chair of pathology, at the age of seventy years, he had in his possession the protocols of one hundred thousand autopsies. The interpretation of his facts were often erroneous, and his system was simply humoral. It was early and severely criticised by Virchow, and it was worthy of note that soon thereafter Rokitansky discarded it. About this time came the first fruitful applications of the microscope through Johannes Müller, in his study of tubercle. This was the period of the specific cancer cell, the specific tubercle cell, etc., and these erroneous views caused the microscope to be brought into a disrepute from which it had hardly yet recovered. In the early part of this century the study of medicine in Germany was by no means edifying. It was then in the thraldom of the so-called natural philosophy. Virchow laid the foundations of the "cellular pathology," which certainly was to be ranked as next in importance in the development of scientific pathology to the discovery of the circulation of the blood, and, so far as furnishing an incentive to further work, it was even more important than the great discovery of Harvey. Cellular pathology was not a dogma, a doctrine, or a theory, but a great principle which admitted of endless development. Whether or not the last word had been spoken was not certain; at present there was no unit of life known beyond the cell. We were so imbued with the spirit and the principles of cellular pathology that it was almost impossible for us to put ourselves back, in imagination, to a period when this did not exist, and we could hardly do justice to the ideas which prevailed before cellular pathology was known. Virchow's great contribution to the cell doctrine was, of course, not the discovery of the cell, as that had been made before, but the demonstration that all cells sprang from pre-existing cells—that living matter always came from living matter. Since the introduction of cellular pathology there had never been an attack upon it which had been successful. Repeatedly pathologists and various other investigators had thought that they had made discoveries which were calculated to cast doubt upon the validity of this great principle in pathology, but the foundations of cellular pathology had apparently only been strengthened by later discoveries. The great step which had been made since the introduction of cellular pathology—*i.e.*, that which brought us back to a knowledge of the causes of disease—we owed to Pasteur and Jenner. In closing, Dr. Welch said that his hearers had traversed with him a long road from Hippocrates to the present day, although they had lingered at only a few of the great landmarks in the history of pathology. It was evident that the past had been one of progress, even if slow and, at times, apparently interrupted. Each important step forward had been followed by great benefits to practical medicine, and, therefore, to mankind. There had been periods when physicians had thought that the laws of life and disease could be discovered by contemplation and philosophical speculation divorced from experience; but medicine, both scientific and practical, needed scientific methods just as much as did chemistry and physics. The use of the experimental method in a most important field—animal experimentation—had for several years been threatened by the fanatical assaults of ignorance and so-called humanity in so false a way that it was nothing short of inhumanity. We should see to it that the experimental method was preserved and handed on to our posterity intact. To accomplish this, medical and scientific men, who alone could fully appreciate the threatened danger, must present a united front; and if they did this, they might feel assured that they would not be deprived of one of the great levers of scientific progress. The true end of all medicine, whether it be called scientific or practical, was the prevention and cure of disease. To this end those who worked in the laboratory, as well as those at the bedside, could contribute, and there was just as wide a scope for the application of scientific methods in the one case as in the other. Pathology and practical medicine were drawing closer together to the immense advantage of both. Each had its own problems and methods, and it was important that each should preserve its autonomy. The ultimate goal of practical medicine was to become an applied science. To some this goal seemed unattainable, but already in certain important directions medical practice could justly claim to be an applied science. This idea should be kept ever in view, and should be striven for with all our might. Every step toward it was a benefit to mankind in enabling medicine to fulfil its true mission of relieving pain and suffering.

SECTION ON MEDICINE.

Stated Meeting, November 15, 1898.

LOUIS FAUGÈRES BISHOP, M.D., CHAIRMAN.

The Non-Medicinal Treatment of Habitual Constipation.—DR. GEORGE ROE LOCKWOOD sent a communication on this subject, which, in his absence, was read by the secretary. He asserted that the well-known laxative drugs give only temporary benefit and set up a train of symptoms which often indicated serious damage to the intestinal tract. The better method of treating constipation was, therefore, that which comprised attention to diet, exercise, and general hygiene. From an extensive experience he had come to the conviction that a daily stool was necessary to health, and yet it did seem as though there were a few individuals who normally had a stool only once in two or three days. It was well to make a rough estimate of the quantity of fæcal matter voided, and thus determine whether or not the constipation was real or only apparent.

The Use of Saline and Vegetable Cathartics.—The salines, of which the Carlsbad water might be taken as the type, usually depended for their efficiency on sulphate of magnesium or sodium. One effect of these remedies was greatly to reduce the production of hydrochloric acid and of the digestive ferments; another was the production of atony of the wall of the stomach. These results were sometimes noticeable within six weeks after the beginning of a course of salines. The drastic purgatives, such as aloes, rhubarb, podophyllin, cascara, and the like, not only depressed the secretory power of the stomach and weakened the tone of its muscular walls, but, in addition, exerted a congesting effect on the mucosa. From the congested vessels serum exuded, and a watery stool resulted. The result was comparable to a cold in the head. The contraindications to the use of saline and vegetable cathartics were: (1) All the conditions characterized by diminished secretory power; (2) all conditions of impaired muscular power of the stomach and intestine; (3) all conditions of inflammation of the stomach or of the large or small intestine; and (4) in children,

owing to the proneness in them to inflammation of the intestinal mucosa. Regarding enemas, it should be remembered that, as the rectum and colon were endowed with marked powers of absorption, there was a tendency for the ptomains to be absorbed more easily when enemas were used, because of the softening and partial liquefaction of the fæcal masses.

Dietetic Treatment.—The chief articles of diet especially suitable for those suffering from constipation were the coarse vegetables, coarse breads, and cereals; the sugars, as secretion excitors; buttermilk, fats, and organic acids, as peristaltic excitors. Coarse vegetables, such as spinach, turnips, and sprouts, should constitute a large portion of the diet, and to avoid irritation of the stomach it was well to have these prepared in purée form. To these should be added the cereals. The breads should be coarse, porous, and one day old. Whenever inflammation existed, bulky foods must be excluded; they were also contraindicated in cases of muscular insufficiency of the stomach, when associated with gastroptosis, as the bulk of the food mechanically overloaded the weakened stomach. A point in the diet which was frequently overlooked was the necessity for excluding all constipating food. For instance, one glass of claret would neutralize the effect of an entire meal of otherwise carefully selected food. Similarly, if tea was taken at all, it should be well made and never strong. It was not known whether the action of sugars was due to the fermentation undergone, or whether they acted like saline cathartics by exciting increased exudation through the intestinal wall. The sugars were best given in the form of honey or milk sugar. A teaspoonful of honey in half a glass of warm milk, on rising in the morning, was an excellent corrective of constipation. Lactose should be used instead of ordinary sugar in tea and coffee. Another excellent remedy was made up of two parts of prunes and one of figs. Raw fruit the speaker did not approve of. Huckleberries and cranberries were to be studiously avoided. Among the liquids that might be taken were buttermilk, kumyss, and cider. To get the laxative effect of buttermilk, three glasses of it should be taken daily. Kumyss had a similar action, increased somewhat by the stimulating effect of the contained carbonic-acid gas. White wine might be allowed in moderation. Fats were administered with difficulty. One-eighth to one-half pound of butter might be given daily. Cream rarely agreed. In debilitated subjects cod-liver oil was advantageous. The effect of taking water with meals was still a mooted point. Undoubtedly a glass of cold water on rising in the morning was of great service in increasing peristalsis, but the speaker believed that during meals little water should be drank. In general, the drier the diet the greater the mechanical stimulation of the intestinal wall.

Exercise and Hydrotherapy.—The abdominal wall might be strengthened by massage, abdominal gymnastics, electricity, and the wearing of an abdominal support. Massage was contraindicated in all inflammatory and spastic conditions. Abdominal gymnastics he had found more serviceable. General exercise, especially bicycling and golf, were of great service in overcoming constipation, and should be resorted to, together with local exercise, such as raising and lowering the legs to and from the vertical position. Faradization had proved a grievous disappointment to him in the treatment of constipation. Artificial abdominal supports were indicated in downward displacement of the stomach or colon, and in weakness of the abdominal walls. They should be worn continuously through the day. He strongly recommended the spinal douche as an important adjuvant to the other treatment. It was most efficacious when given before breakfast. While the patient sat in hot water, the spine was sponged at first with hot water, and then a pitcher of cold water was poured on the back from a considerable height. This should be followed by brisk friction. Another plan was for the patient alternately to sponge the abdomen with hot and cold water. Sedative remedies were indicated in conditions of intestinal spasm—a more frequent condition than was commonly believed. In this class of cases purgatives, massage, and bulky articles of diet must be excluded. The primary cause was usually hyperacidity of the gastric contents. An efficient remedy in these cases was the Neptune girdle, made of two thicknesses of flannel, large enough to cover the abdomen, which were to be wrung out of hot water, covered with oiled silk, and applied to the abdomen at night by means of a binder.

Kussmaul's Oil Irrigations.—Oil irrigations had been first employed by Kussmaul. Dr. Lockwood said that his own results with this treatment had been so brilliant that he was inclined to attach much importance to this method. A rectal tube of large calibre, with a large lateral opening, should be selected and inserted in the rectum a distance of from six to eight inches. Through this from six to eight ounces of cotton-seed oil (free from rancidity) was to be injected. This oil would be found as satisfactory as olive oil, and much less expensive. The patient received the injection while in the Sims position, with the hips elevated on two pillows, and with the muscles well relaxed. The position should be maintained for ten minutes; then the dorsal decubitus should be assumed for ten minutes; and, finally, the patient should lie on the right side for another period of ten minutes. By this postural treatment the oil reached the entire length of the colon. The injection was given preferably at bedtime. No immediate effect was to be expected. There would be usually a normal movement, without straining, for five or six successive mornings. The oil seemed to act by commingling intimately with the fæces, and thus preventing any further drying process. The treatment should be repeated whenever the effect of the previous injection had subsided—ordinarily every five days was sufficient. One great advantage of this treatment was that it may be used in atonic, spastic, and inflammatory conditions alike. In conclusion, the author insisted upon the importance of making a careful physical examination at the outset of the treatment of constipation. Almost always a physical examination of the colon was demanded. The colon should be flushed out with decinormal saline solution, and the washwater examined. If mucus was present, indicative of intestinal catarrh, bulky foods should be avoided. Massage, electricity, and cold abdominal irrigations were contraindicated, while oil irrigations might be used with benefit. If colitis could be excluded, either atony or spasm was probably present. The former was shown by the facility with which water entered into the gut and by the diminished expulsive force. Examination of the rectum should be made for hemorrhoids, rectal ulcers, stricture, or fissure, as any rectal malformation might lead to reflex intestinal spasm and to constipation. Abnormalities in the position of the colon could be easily appreciated by inflation with air, and their presence called for the use of the Bodenhamer abdominal support. If the patient was nervous, he should be instructed to lie down at least one hour in the middle of the day. The writer firmly believed that careful and systematic treatment along the lines indicated in the paper would be followed by successful and more or less permanent results in a very large majority of patients. In a very small percentage of cases an additional medicinal laxative might be required, but such a percentage he believed to be very trifling—in two years such a case had not come to his notice.

Constipation as a Cause of Anæmia and Chlorosis.—Dr. Judson Daland, of Philadelphia, read a brief paper with this title. He said that he had been deeply interested in this subject for three or four years past—indeed, the profession in general had been aroused by the masterly article of Sir Andrew Clark. The main point to be determined in this study was as to whether the fæces remained in the colon longer than usual and whether the normal quantity of fæces was evacuated. Colonic washings showed that hardened masses of fæces often remained in the colon for days, or even weeks, notwithstanding the fact that the patient's bowels moved regularly. In many cases digestion was influenced by constipation, but more important still were the putrefactive changes produced. In one class of cases there would be a continuous absorption of poisonous products formed in the intestine, associated with marked indicanuria, a moderate grade of anæmia, and obstinate headache. In another group of cases the constipation would so influence the blood as to produce, both on microscopical and clinical examination, the picture of progressive pernicious anæmia. In one typical case of this last group, Dr. Maisch had demonstrated by chemical analysis the presence of indol, skatol, cadaverin, and putrescin. There was, therefore, every probability that these poisons, by their circulation in the blood, resulted in ordinary anæmia, in chlorosis, or even in a condition simulating closely that of pernicious anæmia. It was not improbable that in the future the physician would be able to state that some particular poison, such as neurin, was the cause of the constipation in a given case. This poisonous state of the blood complicated many diseases, such, for example, as typhoid fever. The recognition of this truth had much to do with the comfort of the patient, as well as with the successful termination of the case.

The Use of Enteroclysms.—The speaker then dwelt upon the importance of using enteroclysms, not merely for the purposes of diagnosis, but for treatment. His attention, he said, had been first directed to this subject by the work done in New York Harbor in connection with the treatment of Asiatic cholera. It had been demonstrated at that time that a certain quantity of liquid passed the ileo-cæcal valve, and could be utilized for cleansing that portion of the intestinal canal. A long soft-rubber tube, a little smaller than the stomach tube, was introduced into the rectum, and to this was attached a fountain syringe placed at a height of four feet above the patient. Good results could be obtained by allowing the patient to assume a comfortable position on the back. Saline solution at a temperature of 100° F. was used for the irrigation. The liquid having been introduced and allowed to remain for a few minutes, the patient was urged to evacuate the fluid, and this was facilitated by movements of the legs or by moving about the room. Oftentimes considerable pain would be experienced when the fluid was first introduced, owing to the presence of gas in the bowel; but if the fluid was allowed to remain for a few minutes before the injection was continued, much of this gas would be discharged.

Constipation Largely Due to Ignorance and Careless Habits.—Dr. Beverley Robinson said that much of the constipation in the world was the result either of the ignorance or carelessness of mothers regarding their children, and particularly their daughters. Another cause of constipation, in New York City at least, was the absence of proper public accommodations for those desiring to attend to the wants of nature. Paris was far ahead of our city in this respect. He was inclined to believe that the morality of New York as well as the health of its citizens would be improved by attention to this matter, for he was under the impression that a rather poorly dressed person would not be admitted to a hotel to answer a call of nature, and would therefore be compelled to go to a grog shop. While Dr. Lockwood had spoken disparagingly of the use of medicines in the treatment of constipation in order to emphasize the great importance of other measures, it could not be denied that in every-day practice the physician was constantly forced to use medicines for these cases, if only for the purpose of securing a sufficiently rapid result to gain the patient's confidence. Without any wish on his part to disparage all that had been done in the way of showing that chlorosis and constipation were closely related, it must be plain to all that chlorosis not rarely existed without constipation, and there were hundreds of cases of constipation without any associated chlorosis. Nevertheless it was well, particularly in the treatment of anæmic, city-bred girls, to bear in mind this relation between constipation and anæmia. It did not seem to him to have been sufficiently insisted upon that there was hardly any more constipating diet than milk, taken undiluted. If milk must be taken, it should be diluted with water or lime-water.

Do Not Overlook the Stomach.—Dr. W. W. Van Valzah said that he heartily agreed with all that had been stated in the paper regarding the different kinds of diet, but he could not indorse the very general directions on other matters. In the past winter he had made thirty analyses of the stomach contents in cases in which there were no symptoms referable to that organ, yet in many of these it was found that the stomach was not secreting its juices at all. The chief symptoms had been intestinal, the most prominent one being diarrhœa. This experience had led him to suspect that the gastric glands often refused to work in persons of fifty years of age or over.

The Choice of Remedies.—With hyperchlorhydria and glandular over-action one almost always found constipation, and in this class of cases he knew of nothing better than Carlsbad salts. Of course, if given for a long time they were injurious, but it was an exceedingly valuable remedy when administered for about three weeks. The next best remedy for these cases was the milk of magnesia, as it was more palatable than the calcined magnesia. If the muscular power of the stomach was diminished, the bowel would often be sluggish also. In these weakened muscular conditions he was very chary of the use of laxatives. Here he was in the habit of using an injection of oil or water, or else gluten suppositories. The habit could be easily broken if they were used properly. Of course, if there were hemorrhoids the suppositories were not admissible, because they would add to the irritation. He could see no possible objection to taking water freely. If it were drank slowly, and half an hour or more before a meal, he did not see how it would interfere with digestion. Both children and adults reared in the city were prone to take too little water. It should be remembered that a common cause of constipation in women was retroversion of the uterus. Among the drugs which he used, he had still great confidence in rhubarb. He did not think it did a particle of harm if used in moderation.

How to Give Cascara.—Cascara was another good drug. If he found that the liver, bowel, and stomach were working well, and that the constipation was simply the result of defective expulsive power, or to spasm (as indicated by ribbon stools), he used cascara. An excellent method of using cascara was to give it at night only; if given two or three times a day, it pushed the food along too rapidly. Another point in the treatment of constipation was the selection of a convenient time for going to stool, and the giving of the laxative at such a time as would secure its action at the accustomed hour for going to stool. The aim should be not to get a loose stool, but a formed one.

The remedy should be kept up in the same dosage for ten days or two weeks, preferably the fluid extract of cascara being used. The dose should then be lessened, and given, not every night, but every second or third night.

Rule about Fruits.—As to the use of fruits, if they did not appreciably increase the burning or the quantity of flatus, and did not produce diarrhœa, they might be given with good results in almost any quantity; if they did produce such symptoms, they must be entirely withheld.

Infantile Constipation.—Dr. L. Emmett Holt said that the conditions found in young children were such as to make the treatment of constipation in these little patients proportionately easy and satisfactory. He always insisted upon a careful scrutiny of the whole of the child's daily life. The nurse was often to blame for the constipation in the infant. In infants under six months of age constipation was often due to the use of modified milk in too small percentages, so that too little residue was left. Under such circumstances the indication was to increase the total solids. The bad cases of chronic constipation in children of five or six years of age that he had seen had been almostwithout exception in children who were exceedingly healthy and robust. He could heartily recommend cascara as being probably the most valuable drug in the treatment of cases in which there was loss of expulsive power. Still better than drugs, in his opinion, were suppositories.

The Effect of Mental Excitement.—Dr. F. W. Jackson divided cases of constipation into (1) those due to diseased states of the system, and (2) those due to abnormal habits or abnormal nervous conditions. In the cases in which the stools consisted of small scybalous masses, he would think not only of calomel and water, as Dr. Van Valzah had said, as appropriate remedies, but of mental excitement and undue business strain as probable etiological factors. The most obstinate cases of constipation could be at least improved by regularity in evacuating the bowel and in selecting the most convenient time in the twenty-four hours for this purpose.

Dress Reform and Constipation.—Dr. S. A. Knopf said that tight lacing and faulty methods of dress were responsible for much constipation among women. He advocated the adoption of the Jenness-Miller reform dress. Abdominal massage, to be carried out properly, must be done with the patient on a hard surface; and, while it was useful, he would not think of treating constipation by it unaided, at first, by medicine. The massage must be continued for a long time, and the patient must be taught after it was stopped how to exercise so as to improve the tone of the abdominal muscles. He had not been able to rely upon cascara alone, and did not approve of giving it for any length of time. The Winternitz method of passing cold and hot water alternately through a coiled tube applied to the stomach had given good results in certain cases.

Dr. Daland, in closing the discussion, said that he had meant to say that constipation was only one of the causes of chlorosis. He had also made use of the term "chlorosis," not in the strict sense of "green sickness," but as indicating a severe type of anæmia. The use of coarse and bulky food had been almost uniformly unsatisfactory in the treatment of the cases of constipation that he had considered. The old idea of giving calomel in full doses, followed by a saline, seemed to him erroneous; it was far better to give a number of minute doses. He believed that the reason that this method of administration proved so successful was that with the increased flow of bile there were increased peristalsis, improved intestinal digestion, and diminished fermentation. The latter effect was to be expected, in view of the high rank of bile among the intestinal antiseptics.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

DIPHTHERIA OR RHINITIS?—SYRINGOMYELIA—CHYLURIA—GRAFTING NASAL BONES—MYXŒDEMA—LUPUS—GUMMA OF TONGUE—REPRINTS—WATER QUESTION—HAROLD FREDERIC'S DEATH—HOSPITAL CHANGES—WHITMARSH.

London, November 4, 1898.

Fibrinous rhinitis, as described by Schüller in 1871, is a subacute or chronic affection characterized by a fibrous or membranous exudation on the nasal membrane. A good deal of interest attaches to this condition, in regard to its relation to diphtheria. It has been until recently considered distinct, but latterly some observers have come to consider it as mild diphtheria, basing their conclusion on bacteriological investigation. The relation of the two was discussed at the last meeting of the Medico-Chirurgical Society, when a paper on the subject, written by Dr. Lambert Lack, was presented. It stated that no less than two and one-half per cent. of all the children attending Dr. Lack's hospital practice were affected by the disease, and it contained an analysis of the symptoms in thirty-six cases. Certainly the affection is not uncommon, and there may be no symptoms, though, as Dr. Lack enumerates those most frequently met with, he would appear to expect some indications of the condition. He found them chiefly local, such as nasal obstruction and discharge, excoriations, and occasionally epistaxis. Sometimes a peculiar sore throat was seen. Bacteriological examinations in thirty-three cases showed the true Klebs-Loeffler bacillus in all, sometimes mixed with pyogenic cocci, sarcinæ, etc. It was usually of the large variety, its identity being proved by its morphology and growth on various media; it was of full virulence on animals, produced virulent toxins, and was neutralized by antitoxins. It could live for several months on culture media, and crowded out other organisms. In only one case could a previous history of diphtheria be traced. But the rhinitis is very infectious, and the bacillus was found in the throats of healthy persons who had been near the patients. Statistics of a comparative investigation were presented. The conclusion of the author is that the fibrinous rhinitis is a mild form of diphtheria, the difference in the clinical manifestations depending apparently on some differences in the organisms associated with the bacillus, the presence of which in the absence of clinical symptoms was not to be regarded as of great diagnostic value.

Dr. Macfadyen remarked that it was puzzling to find this bacillus present in these cases and in some normal throats. It had been shown that the bacilli from cases of diphtheria varied in virulence. During convalescence they also changed in form, becoming shorter and stouter. By artificial means the virulence of a culture could be intensified or diminished. The condition of the tissues and the presence and virulence of other organisms might have an important influence.

Dr. T. D. Lister said he had examined the nasal mucus of one hundred and twenty-five children at his hospital. Of these sixty-nine had some discharge, watery, muco-purulent, or hemorrhagic. All the hemorrhagic cases gave pure cultures of the Klebs-Loeffler bacillus. Altogether there were sixty-one children in whom the bacillus was found—thirty-seven with discharge and twenty-four without. In no case did diphtheria result from contact with these chidren He had examined two cases post mortem. In one there was a creamy exudation on the nasal mucous membrane; in the other nothing.

Dr. E. W. Goodall remarked on the well-known fact that the bacillus might be met with in scarlet fever and various other conditions, even in healthy persons. But the evidence of its causal relation to diphtheria was too strong to be given up, and Dr. Todd found the bacillus in fifty-one cases out of seven hundred to eight hundred cases of scarlet fever. He thought that any case of sore throat in which the bacillus was found should be isolated and treated as diphtheria.

Mr. Lyster mentioned the circumstance of a boy who was thought to have a cold, went home from his school, and never had anything more than a slight discharge, but fatal diphtheria followed in his family.

Among the cases shown at the Clinical Society's meeting, I may mention one of syringomyelia in a woman of twenty-eight, who when young had never been able to get about like healthy children, being always apt to fall, had had painless whitlows at seven, and whose back had been noticed to be twisted at ten. Now she has spastic paraplegia with increased reflexes, wasting of muscles round the shoulder, diminished electric excitability, wasting muscles of the right hand, loss of sensation to painful impressions above the waist, except in the face. There are marked lateral curvature and vertical nystagmus on lateral deviation. Her general health is said to be good.

There was a boy of sixteen, with chyluria of three years' standing—the milky urine appearing only after sleep, whether by night or day. The clear urine sometimes contained albumin, but at other times was normal. The blood had been repeatedly examined at night, but no filariæ had been detected.

A youth, eight years ago, lost through an accident a large part of the nasal bones. In January last Mr. Cheyne exposed the periosteum on the right side of the nose, removed the femur of a rabbit, split it into pieces, laid them on the periosteum, and replaced the flap of skin. The wound healed without suppuration, and the result now shown to the society is excellent.

A girl of seven, with myxœdema, was shown by Dr. Bertram Abrahams. She could not walk until five years old, and at six and a half rapidly grew stout, and in twelve weeks became helpless. Treated with thyroid extract, her weight fell from forty-four to thirty-three pounds in thirty days, and she got about and went to school. On discontinuance of treatment, the symptoms returned. She has a curious induration of the calf muscles, which was attributed to deposit of mucin.

A case of lupus in a woman of forty-seven, shown by Mr. Pearce Gould, had benefited under thyroid colloid. There was a history of enlarged glands from childhood. One foot had been amputated for tuberculous disease. The glands of the neck broke down in 1897, and ulceration extended to the face. This healed, but in September the patient was admitted for an ulcer reaching from the eyelids to the mouth. Colloid tablets were given, and in three weeks it had healed. One tabloid a day is now being given, the scar tissue is supple, and the pain has ceased.

Dr. Pringle thought this the best treatment, though relapse is likely unless it be kept up.

Dr. Whitfield would have described this case as scrofuloderma, which he considered more amenable to treatment, whether by serum or thyroid, than typical lupus.

A girl of seventeen, with gumma of the tongue, shown by Mr. Symonds, was the subject of congenital syphilis. She had previously had eye symptoms and gummata on the forearm. The gummata appeared while the patient was undergoing vigorous mercurial treatment.

The unauthorized reprint from the *British Medical Journal*, mentioned in my last, has been withdrawn by the advertiser, who also apologizes for his indiscretion and says he had no intention of committing an unjustifiable action. It is well that companies and interested persons generally should clearly understand that comments on their wares in the journals are copyright.

On Tuesday the county council finally determined to promote bills in the next session of Parliament for taking over the water supply of London and to obtain additional supplies from Wales.

The inquiry into the death of Harold Frederic, the novelist, has been adjourned further until next week, as the jury expressed a wish to have the whole case summed up. Mrs. Mills, who calls herself a "Christian scientist," again appeared and asked for a room to which she might retire to "realize" on the "realization of God's power"—a request which naturally caused contemptuous amusement. She told the jury she was "a healer—a willing channel for the goodness of Jesus;" that there "is no death, because God is life;" that she "did not concern herself with results," and other remarks of the same kind. She had been paid in cash, she said, for this patient, but checks were acceptable to her sect.

Dr. Goodhart has resigned his office at Guy's Hospital, after twenty-one years' good service. Dr. Newton Pitt succeeds to the physiciancy. The governors have followed the example of the London, and resolved that in future the assistants on the staff shall after seven years' service have the full title. Many think that assistant physician or assistant surgeon is a misnomer, and should no longer be continued, at any rate after a year or two of duty satisfactorily discharged.

Dr. Crawford, an Oxford man, has been appointed assistant physician to King's College Hospital.

Dr. Murrell takes the place of Dr. Donkin, who has resigned from the Westminster Hospital.

The death sentence on Dr. Whitmarsh has, as was expected, been commuted.

THE DISINFECTION OF TYPHOID STOOLS.

To the Editor of the Medical Record.

Sir: There is a point in regard to the spread of typhoid by flies that cannot be too thoroughly emphasized, inasmuch as the methods ordinarily employed, and even recommended by high authority, in the army and elsewhere, show that it has not been taken into the account at all. The writer has been able to secure abundant clinical and microscopical evidence that covering the excretions from typhoid patients with earth is no protection whatever against flies. Such a mixture of earth and excrement is simply a veritable culture bed for the propagation of the typhoid bacillus, and it attracts species of flies that live outdoors and are much more migratory than is the ordinary house fly, thus spreading the disease far and wide. What is needed is something that will make such material absolutely sterile, so that there will be nothing for the flies to carry, no matter how numerous they may be. Carbolic acid is a poor disinfectant for such a purpose, for the reason that it is very volatile and soon evaporates, perhaps before penetrating the entire mass, unless used very strong and in large quantity. Ordinary lime likewise soon loses any germicidal power unless employed in large quantities. On the other hand, so small a quantity as a pound or two of sulphate of copper, dissolved in a barrel of water, will prove decidedly efficient, for when soaked into the soil and excrement in this way it stays there, producing permanent sterility as far as it extends. Earth thus treated becomes a good disinfectant, and the copper sulphate is readily portable and easily handled.

M. A. Veeder, M.D.

Lyons, N. Y.

A NEW ANÆSTHETIC ON THE BASIS OF THE SCHLEICH PRINCIPLE.

To the Editor of the Medical Record.

Sir: Referring to my letter of April 23d (*cf.* Medical Record, 1898, vol. liii., p. 607, "Correspondence"), in which I stated that on the basis of physiologic research I had given up the petrolic ether in Schleich's mixtures for general anæsthesia, using instead the molecular solution of chloroform and ether, briefly called M.S., I now beg to send you this additional information.

M.S., as explained in said letter, is a solution in molecular proportion of 119.5 gm. of chemically pure chloroform and 74 gm. of absolute ether; or, expressed in volume, of 43.25 per cent. of chloroform and 56.75 per cent. of ether. Its boiling point is 52° C.= 125.6° F.

I have made use of M.S. in all my cases of general anæsthesia since the early part of the year up to the middle of October, with very gratifying results. Nevertheless M.S. was not that anæsthetic I had been looking for, its boiling-point being too high. Therefore I urged my friend, H. P. Weidig, Ph.D., to take up again his experiments with M.S. and find the proper third not injurious narcotic substance, which, added to M.S., would reduce its boiling-point to 38°–42° Cels. (100.4°–107.6° F.).

Dr. Weidig succeeded in obtaining the desired reduction by adding ethyl chloride (boiling point, 15° C.=59° F.) to M.S. (With regard to the effect of ethyl chloride in general anæsthesia in the human subject, see "Aus der Innsbrucker chirurgischen Klinik des Prof. Dr. v. Hacker: Ueber Narkose mit Aethylchlorid," by Dr. Alfr. Ludwig; *Beitr. z. klin. Chir.*, vol. xix., p. 639, and Dr. G. Lotheissen, *Archiv f. klin. Chirurgie*, vol. lvii., p. 865.)

Eighteen per cent. volume of ethyl chloride, plus eighty-two per cent. volume of M.S., has a boiling point of 38° C. (100.4° F.); seventeen per cent. volume of ethyl chloride, plus eighty-three per cent. volume of M.S., has a boiling point of 40° C. (104° F.); sixteen per cent. volume of ethyl chloride, plus eighty-four per cent. volume of M.S., has a boiling point of 42° C. (107.6° F.).

In view of the slight difference in the amount of ethyl chloride required to produce the three boiling-points, I have discarded the first and third mixtures and use the second one only, viz., eighty-three per cent. volume M.S. plus seventeen per cent. volume ethyl chloride, boiling-point 40° (104° F.), thus employing one and the same solution for all cases.

It is a clear, transparent fluid of very agreeable odor and a specific gravity of 1.045. According to Dr. Weidig's experiments ethyl chloride is held very firmly in solution with M.S., for on evaporating 1,000 c.c. for five hours at a constant temperature of 40° C. (104° F.), 22 c.c. (2.2 per cent. volume) with a specific gravity of 1.262 was left. The specific gravity of chloroform is 1.490. This fact shows plainly that up to the last moment a "solution of components" discharges and not a final rest of chloroform, as is the case in Schleich's mixtures. Dr. Weidig and I intend to publish these experiments *in extenso* at an early date.

This preparation will doubtless, in some form or other, soon enter the regular channels of the wholesale drug trade, and will be best put up in four-ounce bottles for physicians' use and in pints for hospitals. Three to four ounces is the amount generally used for an operation lasting about an hour to an hour and a half.

I have been using this anæsthetic since October 15th, and, as far as I can judge after so short a period, consider it a great improvement on Schleich's mixtures as well as on M.S. One of the principal advantages that have been observed so far is the little disturbance it causes to the general system of the patient, especially to the stomach; vomiting seems to be a comparatively rare occurrence after its inhalation; nor is there any struggling during the induction of anæsthesia. The patients are easily brought under the influence of the anæsthetic and wake up rapidly, points of interest noted in the use of the Schleich mixture No. 1. The lungs and kidneys seem to remain unaffected.

The administration of the new anæsthetic will have to be by the drop method. I cannot say as yet which mask would best be used, whether the Esmarch chloroform mask covered with oiled muslin or with Mosetig batiste, with a proper cut out in the centre for receiving the anæsthetic, or the paper-and-towel cone, open on both sides and filled with a piece of gauze. I am inclined to believe the latter will prove preferable.

I hope you will publish these preliminary remarks for the benefit of the colleagues who are interested in the further investigation into the important question of improving general anæsthesia, on the basis of the principle introduced by Schleich, viz., a reduction of the dangers of general anæsthesia by adapting the boiling point of the narcotic to the temperature of the body.

Willy Meyer, M.D.

New York, November 12, 1898.

ORRHOTHERAPY OF FOWL DIPHTHERIA.

To the Editorof the Medical Record.

Sir: In an editorial of the Medical Record of July 16, 1898, you give Dr. Stevenson, London, Ontario, credit for discovering or rather the application of the serum treatment for roup or fowl diphtheria. I will state that I believe the priority of this is not due to Dr. Stevenson but to me. The first article that I know of from Dr. Stevenson was published in the *Reliable Poultry Journal*, April, 1898. Prior to that time I had written two articles, both similar to Dr. Stevenson's, which were published in the *American Fancier* on May 5, 1897, and March 23, 1898.

William L. Pyle, M.D.

400 Bergen Avenue, Jersey City, N. J.

A WORD UPON THE "SURGICAL NURSES" SENT OUT BY THE ACADEMY OF MEDICINE.

To the Editor of the Medical Record.

Sir: I am recently in receipt of the usual question blank sent out by the New York Academy of Medicine, and asking if a given nurse has been satisfactory. For some reason this blank is issued with red lines drawn through the names of all the medical men, members of the committee on nursing, and is signed by R. MacHaffie, whose name does not appear upon the surgical register of this city.

I infer that charge of this department is now relegated to other than medical hands. If this be so, perhaps a word of gentle advice may not be amiss, based upon a rather unfortunate experience with nurses from this same bureau of the academy.

It has been my ill luck in several of those few instances in which I have telephoned to this bureau for a surgically trained nurse for an emergency operation to get one that proved not to deserve the written recommendations which, doubtless, she showed when she registered there.

In one instance such a nurse horribly burned a patient in a half-dozen places, by hot bottles placed about her. The burns took weeks longer to heal than did the operation wound. The academy committee on nursing dismissed this nurse from the list in consequence.

In a second instance, quite recently, the "surgically trained" nurse was unfamiliar with the names of several common instruments; and the various tools which should be taken apart in order to be properly cleaned —such as artery forceps—were found upon being examined at home after her cleansing to have blood still in their locks, etc.

In a third instance, about a year ago, the "surgical" nurse sent by this bureau dumped my entire kit of instruments into a large bowl of 1–1000 bichloride solution. After snatching them out I asked an explanation. She placidly replied that where she was trained they always soaked the instruments in bichloride. This same lady did not know the names of any of the instruments except scalpels. She handed me the trays therefore, and from them I myself picked out what was wanted.

Upon inquiry she stated that part of her training had been in Ireland (or Scotland, I forget which) and part in San Francisco.

I do not doubt that each of these nurses was a true Christian, and was possessed of a fair amount of medical training; but it is calculated to shake one's confidence in the academy's bureau to find them selected as exponents of surgery—and of asepsis! One becomes, doubtless unjustly, distrustful of the entire list. And I beg to say that my own experience herein is not by any means a solitary one, as I know by comments from other surgeons.

It is obvious that some of the doctors who recommend the nurses registered there should be more careful in signing credentials. And in two respects it would seem that the management might improve the state of affairs.

1st. The nurses should be divided into, let us say, at least four groups—surgical, medical, gynæcological, obstetrical. And if a nurse claims (for example) to be a surgical nurse, she should only be so registered, provided some well-known surgeon has recommended her after personal experience of her work.

This would require, however, that some physician, familiar with the names of prominent surgical specialists, should be in charge of the bureau, as has been the case until of late. But as matters now stand, we have no real guarantee. The nurse may understand asepsis, or, on the other hand, the physician (not surgeon) recommending her may be wrong in thinking she does.

2d. I think we should adopt at the academy a home-rule policy in this matter. There are here in Greater New York an abundance of superbly trained surgical nurses. We know our own training-schools, and the thorough work that most of them do. We do not know the quality of training in a thousand and one schools outside. Some are, doubtless good, some unspeakable. Why should we not give the preference to our own New York trained nurses?

It seems to the writer that the academy bureau should be instructed to send out, in response to a request for a nurse, always one from some well-known training-school of New York City, unless the supply is, perchance, exhausted temporarily, when an outsider may be sent.

In all of the three disappointing instances I have mentioned in this letter the nurses were, I believe, outsiders.

The foregoing suggestions are made, Mr. Editor, in no carping spirit, but solely with the idea of improving the quality of care and of asepsis upon which surgeons should feel they may depend when the academy sends them a "surgical" nurse; and in order that there may in these regards be fewer mistakes made in the future than there have been in the past.

ROBERT H. M. DAWBARN, M.D.

NEW YORK.

Therapeutic Hints.

Boils.—

℞ Ung. stramonii,
Ung. resin.....āā p. æ.

Atonic Ulcer of Leg —

℞ Sodium chloride (finely powdered),
Menthol (powdered).....āā ʒ x
M. Apply after cleansing surface of ulcer.

—*Jour. d. Méd.*

Exophthalmic Goitre.—Potassium bromide, gr. xx. Give three times a day, an hour after eating, in half a glass of water.—HUTCHINSON.

Mouth Wash.—

℞ Sodii biboratis..... gr. xv.
Thymoli..... gr. vij.
Aquæ dest..... ℥ viij.

Chronic Pharyngitis —

℞ Acidi tannici..... 2
Aquæ font..... 200
Spir frumenti,
Syr. diacodii.....āā 10

Or:

℞ Alum..... 3
Aquæ font..... 200
Syrupi..... 20
S. Use as a gargle.

—PROF V. SCHRÖTTER.

Cerebro-Spinal Meningitis —

℞ Potassii iodidi..... 0.5
Aquæ font..... 70
Syr. aurant. cort..... 20
M. S. Teaspoonful every two hours.

—WIEDERHOFER.

Epilepsy.—

℞ Zinci oxidi..... 0.3–1
Ext. belladon..... 0.1
Pulv. rad. valerianæ,
Sacch. alb.....āā 5
M. f. pulv. Div. in dos. æq. No. x. S. One powder t.i.d.

—NOTHNAGEL.

Putrid Bronchitis.—

℞ Ol. terebinthin..... 0.5–2
Aquæ dest..... 100

Or:

℞ Aquæ picis..... 5–50
Aquæ dest..... 100

Or:

℞ Acidi carbolici..... 0.5–1
Aquæ dest..... 100
S. For inhalation.

—NOTHNAGEL.

Nephrolithiasis.—

℞ Sodii phosphatis,
Sodii bicarb.....āā 45
Lithii carb..... 10
M. S. Teaspoonful in a glass of water, twice daily.

—ULTZMANN

Alopecia.—

℞ Acidi salicylici..... 2
Spir. vini..... 100
Spir. lavand.,
Spir. colonien.....āā 50
M S. Apply to affected region twice daily.

—KAPOSI

Hemorrhage in Typhoid Fever.—After a hemorrhage has taken place the blood as a rule is not all expelled, and part remains in the colon or at the ileocæcal valve. Blood is a fruitful soil for the development of bacterial growth, and if allowed to remain aids in the further development of the poison. Do you think any harm will come to the patient by these

clots being washed out? Instead of giving opium or any other drug to bind up the bowels and secretions, I have been in the habit for the past few years of following an entirely opposite course. I give something to move the bowels, generally a saline, and wash out the colon with ice-water. By this plan I clear out the alimentary canal, carry off the clots of blood and whatever ther substance there may be, relax all tension upon the bowel; and I have not had much secondary hemorrhage to contend with.—Dr. H. G. McCormick, *The Therapeutic Gazette*, July 15th.

Mouth Wash for Children.—

℞ Acidi boracici 3
Aquæ font. dest. 200
Tinct. myrrh. 2
M. S. Mouth wash.

—Monti.

Tooth Powder for Children.—

℞ Magnes. carb. 5
Cret. alb.,
Sodii salicyl. ..... āā 15
Ol. menth. pip. ..... gtt. vi.
M. S. Tooth powder.

—Monti.

Chordee.—

℞ Potassii bromidi. 10–20
Extr. cannab. indic. 0.5–1
M. ft. pulv. Div. in dos. æq. No. x. S. One powder in water before retiring.

—Neumann.

Myringitis.—

℞ Acidi boracici. 0.3
Cocainæ muriat. 0.5
Aquæ dest. 10
M. S. Fifteen drops into the ear three times a day.

—Dr. Joseph Gruber.

Epithelioma.—

℞ Acidi arseniosi. 1
Alcoholis,
Aquæ dest ..... āā 75
M S. External use.

—Badal.

Phthisis.—

℞ Guaiacoli carb.,
Ammon. sulphoichthyol. ..... āā 15
Glycerin. pur. 30
Aq. menth. piper 10
M. S. Twenty to thirty drops t.i.d.

—Dr. H. Goldman, *Münchener med. Wochenschrift.*

Tetanic Contraction of Uterus.—

℞ Tinct. iodi. 1
Alcohol. 2
M. S. Five drops in half a glassful of warm water every half-hour.

—P. Müller, *Wiener med. Wochenschrift.*

Dysentery in Children.—

℞ Aluminii et potassii sulphatis. 0.2
Plumbi acet. 0.05
Olei theobromæ. 20
M ft. suppos. No. x S. One suppository every three hours.

—*Jeshenedelnik*, 1898, No. 4.

Migraine.—

℞ Mentholi valerianici. 5
Aquæ dest 25
Syrupi. 30
M. S. Fifteen drops every two hours.

—Dr. J. W. Frieser, *Münchener med. Wochenschrift*, August 30th.

Treatment of Uræmic Attacks.—Use hypodermoclysis provided the symptoms are not pressing and there is no trouble with absorption because of œdema; when the danger is pressing, or œdema is present, even in a very slight degree, use intravenous injection. In a large proportion of cases the patient should be bled, particularly if nervous excitement or convulsions are present or threatened, because this will relieve cerebral congestion, and aid in the elimination of toxins and in the absorption of the fluid from the subcutaneous tissues; or if intravenous injections are used, it will make room, so to speak, for the artificial serum. I believe this is of importance, unless the circulation is evidently very feeble from profound debility and anæmia. Again, it is of great importance to aid sweating by the use of the hot pack, using care that heat stroke is not produced; but this again should not be used unless the patient fails to sweat, nor if he has a feeble heart.—Dr. H. A. Hare, *The Therapeutic Gazette*, July 15th.

Obstinate Vomiting.—

℞ Menthol 0.02
Tinct. thebaici. 5
Spir. rectificat. ..... q.s. ad 20
M. S. Ten to twenty drops as often as necessary.

—Pick, *Münchener med. Wochenschrift*, June, 1898.

Migraine.—

℞ Quininæ valerian. 1
Caffeinæ citric. 0.5
Extr. cannabis ind 0.1
M. ft. pil. No. x. Two to three pills during the day.

—*Quebec Revue Médicale*, February 16th.

℞ Mentholi,
Caffeinæ citric. ..... āā 0.5
Quininæ sulph. 1
M. f. pulv. No. x. S. One powder every two hours.

—Dr. J. W. Frieser, *Münch. Med. Woch.*, August.

Lupus Erythematosus.—

℞ Sol. Fowleri 4
Aquæ dest. 20–30
Chloroformi ..... gtt. ij.
M. S. Apply locally, morning and evening.

—Schütz, *Zeitschr. f. prakt. Aerzte.*

Labor Pains.—

℞ Ext. viburn. prunifol. fluidi,
Ext. hydrast. canadens. fluidi ..... āā 15
M. S. Twenty drops in hot drinks every two hours.

—Pinard, *Journ. de Méd. de Paris*, 1898, No. 4.

Antipyrin in Sciatica.—Dr. Kuhn (*Allg. med. Central-Zeitung*, No. 20, 1898) recommends hypodermic injections of antipyrin. By means of a Pravaz syringe he injects several times daily a fifty-per-cent. aqueous solution. The liquid must reach the affected nerve in order to be efficacious; the needle is inserted a little below the middle of a line drawn from the tuber ischii to the great trochanter.

In Dry Stools Due to Excessive Absorption in Large Intestine.—

℞ Tinct. lobeliæ ..... ♏ v.–x.

Or:

℞ Ext. lobeliæ fld. ..... ♏ iij.–v.
Ext. cascaræ sagradæ fld. ..... ♏ xxx.–xlv.
M.

—Hare.

Threadworms.—

℞ Santonin. ..... gr. ¾
Calomel ..... gr. iss.
This to be taken every morning before breakfast, for three days.

℞ Mercurial ointment ..... 1 part.
Glycerite of starch. ..... 2 parts.
M. S. To be inserted into the anus.

—Comby.

Acute Gastric Catarrh.—

℞ Bismuth subnit ..... gr. x.
Potass. brom. ..... gr. xv.–xx.
Acid. hydrocyan. dil. ..... ♏ v.
Spts. chloroform. ..... ♏ x.
Mucil. acac ..... ℥ ij.
Aquæ ..... q.s. ad ℥ i.
M. S. Every three hours.

—Brunton.

Tinnitus Aurium.—

℞ Tinct. cimicifugæ .... ♏ clx.
Aquæ..... ʒ ij.
M. Teaspoonful three times a day.
—Patton.

Pruritus.—

℞ Menthol..... ʒ i.
Simple cerate..... ℥ ij.
Oil of sweet almonds..... ʒ i.
Carbolic acid ..... ʒ i.
Powdered zinc oxide..... ʒ ij.
M. S. Apply night and morning.
—C. B. Kelsey.

To Disguise the Taste of Quinine.—

℞ Quinine sulphate ..... gr. iiss.–x.
Syrup of rose leaves ..... ʒ i.

The syrup of rose leaves is made by mixing one part of the fluid extract of rosa centifolia with three parts of simple syrup.—E. N. Gates.

Obstinate Cases of Herpes.—

℞ Boric acid..... ʒ ij.
Absolute alcohol ..... ʒ i.
Rosewater ..... ℥ vi.
Dilute with equal parts of boiling water and use as a lotion several times a day.

℞ Calomel..... ..... gr. xx.
Bismuth subgallate..... gr. xxx.
Bismuth subnitrate..... ʒ i.
Use as a dusting-powder.
—Oppenheimer.

In Subacute Bronchitis increasing doses of a reliable emulsion of cod-liver oil are often curative when other drugs have failed.—Hare.

Acute Conjunctivitis.—The most efficient treatment is to have the eye exposed every two hours to a steam atomizer, having a five-per-cent. solution of carbolic acid in the cup. This when mixed with the steam issues forth as about two-and-one-half-per-cent. solution, and is easily borne. Let the patient sit with his eye directly in front of the steam jet for a quarter of an hour at a time.—Blake.

Diphtheria.—

℞ Tinct. of myrrh..... 4 parts.
Glycerin..... 8 "
Distilled water..... 200 "

This is given freely—every hour during the day and every two hours at night—infants up to the age of two years taking a large teaspoonful, older children double the quantity, and adults three times as much. Continue this until the membrane has disappeared.—Dr. Stroll, *Allgemeine medicinische Central-Zeitung.*

Prevention of Gastro-Intestinal Troubles.—A very valuable point in the prevention of gastro-intestinal complaints of breast-fed children is to keep the nipples and breasts thoroughly sweet and clean. The milk drippings or oozings find lodgement in the rugæ of the nipples, and furnish a soil for bacteria and a medium for tyrotoxicon to enter the child's organism. —*Georgia Journal of Medicine and Surgery*, June.

Cold in Renal Disease.—Cold irrigation is absolutely contraindicated in renal disease; so are cold enemata.—Kemp.

Treatment of Scarlatina with the Full Bath.—Dr. D. S. Hanson (*Cleveland Medical Journal*, June) says the theory of the action of the full bath at 90° F. can be explained only by considering a number of things accomplished: (1) It reduces temperature, which is probably the most important part of its action. (2) It favors elimination, yet its effects are so quickly apparent that this feature can be beneficial only to a minor degree. (3) It stimulates the circulation and strengthens the heart's action, thereby relieving the capillary stasis, in the skin more particularly, but probably in the internal organs as well. This change can be most beautifully seen by observing the relief of the congested conjunctivæ noticeable when we find a dark scarlet skin with marked nervous phenomena, often stupor and unconsciousness. (4) It inhibits in some manner the action of the toxins upon the circulatory, respiratory, and reflex nerve centres. By the repetition of the bath as indicated, until nature comes to the rescue, nerve exhaustion can be limited and convalescence hastened.

Acute Gastro-Enteric Infections, when accompanied by vomiting, purulent dejecta, pains, etc.:

℞ Tr. iodi ..... gtt. xv.–xviij.
Syr. simp.... ..... ʒ v.
Aq. dest.....q.s. ad ℥ v.
M. S. Tablespoonful every two or three hours.
—Grosch.

Acute Angina of Infants.—

℞ Acid. carbol. cryst ..... gr. xv.
Glycerini ..... ʒ iss.
Ol. thymi..... gtt. ij.
Aquæ ..... ʒ xvi.
M. S. Irrigate pharynx.
—Marfan.

General Tonic.—

℞ Strychninæ sulphatis ..... gr. $\frac{1}{60}$
Acidi phosphorici diluti ..... ♏ v.
Ferri phosphatis..... gr. i.
Quininæ bisulphatis..... gr. i.
Glycerini ..... ʒ ss.
Elixir aurantii.....q.s. ad ʒ ss.
M. et ft. sol. S. Take before each meal.
—Winslow Anderson.

Typhoid Fever.—

℞ Spts. terebinth. rect ..... ʒ i.
Spts. juniper..... ʒ ss.
Fluid ext. hamamel..... ʒ ij.
Pulv. acaciæ..... ʒ iss.
Aquæ..... .....q.s. ad ℥ vi.
M. S. Dessertspoonful every four hours while awake.
—J. Sanderson Christison.

Pulmonary Tuberculosis.—

℞ Ammonii sulphoichthyolatis,
Creosoti carbonat.....āā 15 gm.
Glycerini puri..... 30 "
Aq. menth. pip ..... 10 "
M. S. Twenty drops after each meal, increased to thirty drops, in a little wine or water containing lemon juice; children, ten drops gradually increased to twenty.
—H. Goldman, *Wiener klin. Woch.*, September.

Insomnia.—A Russian remedy is to have a dog sleep in the room, and preferably in the same bed. It may be through a sense of companionship, or one of security, or it may act suggestively; at any rate, it is said at times to prove of value when other means fail.

Migraine.—An apparatus like a double-hernia truss or bandage is applied so that the pads make decided pressure over the temporal regions. Numerous successes are reported.—Sargon, *Deuts. med. Woch.*, No. 35.

Bronchitis with Bronchorrhœa.—

℞ Ex. belladonnæ..... 0.01 cgm.
Ext. daturæ ..... 0.05 "
Pulv. camphoræ ..... q.s.
For one pill. One to three daily.

Uterine Cancer.—

℞ Acidi salicylici..... 0.40 cgm.
Sodii salicylat ..... 12 gm.
Tinct. eucalypti ..... 24 gm.
Aq. destil..... 180 gm.
M. S. Three tablespoonfuls to a pint of water as an injection every three or four hours.

Urea in Cirrhosis.—There is a benign form of cirrhosis of the liver with ascites, in which urea acts as a diuretic and removes the fluid. In severe forms little is to be hoped from the remedy, even when as much as an ounce is given daily.—Dion.

Blennorrhagic Dysuria.—

℞ Sodii salicylat. ..... 10 gm.
Ext. belladonnæ ..... 0.30 cgm.
Tinct. aurantii cort. amar ..... 5 gm.
Aquæ ..... 195 gm.
M. S. Teaspoonful every two to three hours.

—Gerbert.

Anal Fissure.—

℞ Europhen 0.10
Butyr. cacao 3
M. ft. supposit. S. Introduce into rectum after using a cleansing enema.

—*La Presse Méd.*

Chapped Hands.—

℞ Menthol 1
Salol 2
Olive oil 3
Lanolin 80
M. S. Apply twice daily.

—Ritterband.

Pruritus.—

℞ Plumbi acet. neutr 0.1
Cocain. muriat. 0.15
Vaselini alb. 3

—*Allgemeine mediz. Central-Zeitung*, September.

Subcutaneous Injection for Hæmoptysis.—

℞ Ergotin 5
Morph. muriat 0.04
Antipyrini 1.5
Sparteinæ sulph. 0.2
Atropinæ sulph 0.002
Aquæ destill. ..... q.s. ad 10
M. S. One hypodermatic every half or quarter hour up to five.

—Capitan.

Hæmoptysis.—

℞ Ergotin (Bonjean) 2
Acidi gallici 0.5
Syr. terebinth (Fr. Cod.) 120
M. S. Tablespoonful every half-hour.

—Capitan.

Hæmoptysis in Children.—

℞ Ferri sesquichlor 0.4–1
Syr. cinnamomi 30
Aq. destill 100
M. S. Tablespoonful every half-hour.

Or:

℞ Syr. ipecacuanhæ 30
Pulv. ipecacuanhæ 0.3
M. S. Teaspoonful every five minutes until emesis ensues.

Or:

℞ Ergotin 1
Syr. rhatan 10
Aquæ destill 100
M. S. One tablespoonful every hour.

—Cadet de Gassicourt.

Antigalactic.—

℞ Atropinæ sulph 0.003
Magnes. sulph. 90
Infus. gentian 240
M. S. Tablespoonful every two hours.

—Bloom.

Diabetic Albuminuria.—

℞ Sodii arseniatis 0.05
Potassii iodidi 5
Aquæ destill. 300
M. S. Tablespoonful before each meal.

Or:

℞ Extr. quininæ (P. G.) 0.05
Quininæ sulph 0.1
Pulv. nuc. vomic 0.02
M. ft. pil. S. To be taken with meals.

—Conard.

Enema for Tuberculous Peritonitis.—

℞ Creosoti 0.5–2
Tinct. opii ..... gtt. vi.
Ol. jecoris aselli 100–150

—Holz.

Struma.—

℞ Potassii iodidi 0.2
Æther 5
Tr. sapon. viridis 30
M. S. Apply before retiring.

—*Allgemeine medizinische Central-Zeitung.*

Bronchial Asthma.—

℞ Morphinæ sulphatis 0.075
Strychninæ sulphatis 0.01
Hyoscinæ hydrobromatis 0.003
Aquæ destillatæ 10
M. S. One to three hypodermatics in twenty-four hours.

—Sols.

Galactorrhœa.—

℞ Potassii iodidi 1
Iodi puri 1
Syrupi 30
Aquæ 200
M. S. Tablespoonful every hour.

—Audhoui.

Diarrhœa of Phthisis.—

℞ Iodoform 2
Tannin 4
M. div. in part. æq. No. xl. S. Two to four powders daily.

—Renzi.

Constipation of Phthisis.—

℞ Iodoformi 2
Naphthalin 2–4
M. div. in part. æq. No. xl. S. Two to four powders daily.

—Renzi.

Enuresis.—

℞ Sol. atrop. sulph. (two per cent.) 5.6
Sol. strych. muriat. (two per cent.) 0.25
Syr. aurantii 30
M. S. Five drops at 9 P.M. and increase gradually up to sixty drops.

—McAlister.

Angina Pectoris.—Restricted diet, forbidding articles which cause fermentation. Potassium or sodium iodide, gr. x.–xv., thrice daily.—Osler.

Varicose Ulcers of the Leg.—Fifty parts of chloride of sodium and five parts of pulverized menthol. Both substances should be in the form of an impalpable powder, and intimately admixed.—Simonelli.

Hemorrhagic Nephritis.—

℞ Salol 0.05
Pyoktanini cærulei 0.1
For one capsule. Give eight daily.

—Dr. A. Kramer, *St. Petersburg med. Woch.*

Local Treatment of Pertussis.—

℞ Quininæ sulph. 4
Resorcin. 1
Sacch. lact. pulv 25
M. S. Apply locally with powder insufflator five or six times a day.

—Leuriaux.

Carcinoma of the Rectum.—

℞ Eucainæ muriat 0.03
Morphinæ muriat 0.01
Aquæ destill. 20
M. S. Use half or the entire amount for an enema.

—Rosenheim.

Enteritis of Children.—

℞ Tannin 0.6
Acidi lact. 2
Aquæ destill. 60
Syr. simplicis 30
M. S. Teaspoonful before each meal.

—Variot.

Pertussis.—

℞ Hydrochlorate of phenocoll..... gr. xviii.–℥ iss.
M. div. in chart. No. xii. S. One powder three times a day.

—KOBERT.

Or:

℞ Tinct. bellad..... 10
Tinct. valerian,
Tinct. digitalis..... āā 5
M. S. Five to sixty drops according to age.

—ROGER.

Or:

℞ Pulv. fol. belladon..... 0.05
Sacchari..... 0.25
M. ft. pulv. S. Two to eight powders daily.

—SANDRAS.

Convulsions of Pertussis.—

℞ Extr. belladonnæ..... 0.1
Potassii bromidi..... 10
Syr. aurantii cort.....q.s. ad 200
M. S. Teaspoonful morning and evening for young children; older children, dessertspoonful twice a day.

—*Jour. de Méd. de Paris*, 1898.

Anthelmintic.—

℞ Acidi salicylici..... 0.5
Ext. filic. maris æther..... 0.75
Gummi arabici..... 7.5
Syr. simplicis..... 50
Ol. cinnamomi..... gtt. x.
Aquæ destill..... 100
M. S. To be taken before breakfast.

—M. T. GUIDA.

Ocular Neuralgia.—

℞ Quininæ hydrochlor..... 0.10
Morph. muriat..... 0.05
Aquæ destill..... 10
M. S. Instill five to ten drops into the eye.

—MARKOFF.

Local Treatment of Rheumatism.—

℞ Methyl salicyl..... 12
Vaselin liquid..... 20

Or:

℞ Acidi salicylic..... 4
Vaselin.....q.s. ad 20

Or:

℞ Acidi salicyl..... 4
Sodii salicyl..... 3
Extr. belladon..... 1
Vaselin..... 25
M. S. Apply locally.

—LEMOINE.

Vomiting of Pelvic Origin.—

℞ Menthol..... 0.3
Elixir pepsin..... 30
Tinct. opii..... 10
M. S. Ten to twenty drops before meals.

—LUTAUD.

Asthmatic Attacks.—

℞ Tinct. stramonii..... 3
Ammon. carbon.,
Magnesii carbon.....āā 1.5
Sodii bicarb..... 5
Pulv. rhei..... 0.5
Chloroformi..... gtt. x.
Aquæ menthæ piper..... 100
M. S. Tablespoonful in a wineglassful of water t.i.d.

—MURRAY.

Intestinal Antisepsis.—

℞ Alpha-naphtholi..... 4
Phenacetini..... 1–2
M. ft. pulv. div. in part. æq. No. v. S. One powder every three to four hours.

Or·

℞ Alpha-naphtholi..... 2
Olei ricini..... 30
Olei menthæ piper..... gtt. i.
M. S. To be taken in two doses at an interval of one hour.

—MAXIMOVITSCH.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending November 19, 1898:

	Cases.	Deaths.
Tuberculosis	192	142
Typhoid fever	75	11
Scarlet fever	100	7
Measles	149	5
Diphtheria	136	28
Laryngeal diphtheria (croup)	15	8
Cerebro-spinal meningitis	0	1

Suicide and Sex.—Dr. Alexander Haig (*British Medical Journal*, September 10th) in a discussion on suicide at the annual meeting of the British Medical Association, treats of "suicide as a result of error of diet." He believes that mental depression and melancholia are due to defective circulation in the brain; and that this is due to the blood being rendered impure by the presence of uric acid, and that this uric-acidæmia or collæmia is the result of error in diet, and can be controlled or removed by altering it. He says: "The great preponderance of suicide in males may be due to several factors: (1) Men are more exposed to weather than women and exposure may be equivalent to living in a colder climate, which we have already mentioned. (2) Men eat, I believe, more, often much more, meat than women. (3) Women excrete, as I have shown, large quantities of uric acid every month at or just after the monthly period, so that, other things being equal, they will have less retention and accumulation than men; this monthly plus excretion accounts for the fact that when they do commit suicide it is often at the monthly period. Again, women suffer much less than men from gout on the one hand and stone and gravel on the other. In just the same way life fluctuations explain why women suffer more than men from fifteen to twenty years of age. The uric acid stored or retained in the rapid nutrition of girls about thirteen or fourteen years, which comes to an end about sixteen or seventeen years, passes through the blood about and after these latter ages, and accounts for the blood and circulation changes which end in chlorosis, headaches, depression, epilepsy, and suicide. The opposite side of this picture is the rapid nutrition and retention of uric acid at thirteen years, with the acute rheumatism it produces; in such girls we often get a complete alternation of rheumatism and anæmia, with headache, epilepsy, depression, and suicide as more occasional coresults."

Dangers of Hypnotism.—Dr. J. Milne Bramwell (*British Medical Journal*, September 10th), in a discussion on the phenomena of hynotism and the theories as to its nature, refers to the dangers of this procedure in the following words: "As far as my experience goes, the employment of hypnotism by medical men who are acquainted with the subject is absolutely devoid of danger. I have seen no unpleasant symptom, even of the most trivial nature, produced by the induction of hypnosis. Further, I have never seen any evil after-effects, either mental or physical; and, if such were likely to occur, surely some of my patients would have presented them. I have hypnotized hundreds of persons of both sexes, and of all ages from early childhood upward, occasionally repeating the process almost daily for months. Some of these were actually insane, while in many the mental condition was far from stable. In a considerable proportion recovery took place after

hypnotic treatment and many years have passed without relapse. This view as to the alleged dangers of hypnotism is largely shared by others. For example, Professor Forel says: 'Liébeault, Bernheim, Wetterstrand, van Eeden, de Jong, Moll, I myself, and the other followers of the Nancy school, declare categorically that although we have seen many thousands of hypnotized persons, we have never observed a single case of mental or bodily harm caused by hypnosis; but on the contrary, have seen many cases of illness relieved or cured by it.'" He concludes his discussion as follows: "If Braid and Myers have done much toward giving us a clearer idea of the hypnotic state, they have also added to the difficulties of explaining it. A conception of hypnosis which limited its manifestations to simple automatic movements was comparatively easy to explain. The hypnotic subject who, while he has not lost the physical and mental powers of his waking condition, has acquired new and far-reaching ones, presents a very different problem. How he acquired these powers and why hypnotic methods should evoke them are questions by no means easy to answer. But normal life contains many problems, both physiological and psychological, which are yet unsolved, and some, such as causal connection between mental and physical states, which are apparently insoluble; and while this is so it would be unreasonable to expect a complete explanation of that still more complex state, the hypnotic. Further observation, however, is always giving us clearer insight, if not into the central problem itself, at all events into the phenomena which characterize it. What increased practical advantage this may give us in curing disease, alleviating pain, or improving moral states, time alone will show."

Birmingham Waterworks and their Model Village.—At Birmingham, England, a colossal enterprise to supply that town with water is now being proceeded with. Birmingham has a population of about six hundred thousand and is in the midst of a densely crowded district, and the difficulties in the way of procuring a pure water supply have for some time been approaching a crisis. The city fathers of Birmingham have resolved to undertake the enormous project of getting the water for the town from the lakes of Wales, a distance of perhaps two hundred miles. The work has now been commenced for some time. In connection with the work and for the accommodation of the workers a model village has been erected, an account of which recently appeared in an English journal; the details are worthy of note to those interested in great works. The houses are built of wood and the village is approached by a suspension bridge. The advantage of this is that "strangers" have to state their business before they can find a way into the place. If they are seeking work, a night must be spent in the corporation "doss house," on the opposite side of the bridge. Here they must sleep and have a bath; during the night their clothes are disinfected and in the morning the applicant has to appear before the resident medical officer. If everything is satisfactory, a permit is given to cross over, and by this means a clean bill of health is maintained. The village itself is laid out in streets, the house blocks being specially designed, as the case may be, for the accommodation of single families or for the housing of a limited number of unmarried men lodging with a married couple. In the latter case each lodger has his own separate cubicle and locker, and enjoys the use of a living-room in common with the other inmates of the house. The villagers number some fifteen hundred navvies and others, employed on the work, with their wives and families. Baths and wash-houses have also been built and a large public assembly room, besides a canteen and general store, a post-office, and police station. A medical officer and a staff of trained nurses are associated with the infirmary hospital down near the work and the isolation hospital upon the hillside, away from the abodes of man.

Migration of Ascarides Lumbricoides.—In the *Deutsche medicinische Wochenschrift*, No. 23, is related by Martens an instance of impaction of an ascaris, seventeen centimetres long, at the point of junction of the hepatic and cystic ducts. In another instance rapid disappearance of severe icterus followed the expulsion with the fæces of two ascarides, one of which presented a strangulation, which led to the belief that it had been the cause of obstruction in the ductus choledochus.

Inflammable Hair Washes.—The dangers of using liquids containing petroleum spirits, benzolene, etc., for cleansing the hair, have been again emphasized by another death from burns in England.

Stoke's Dictum.—"There is no single nervous symptom which may not, and does not, occur independently of an appreciable lesion of the brain, nerves, or spinal cord."

Oliver Wendell Holmes says: "Science is a first-rate piece of furniture for a man's upper chamber if he has common sense on the ground floor; but if a man has not got plenty of good common sense, the more science he has the worse for his patient."

Consumption of Milk.—Mr. Henry Kew, in the journal of the Royal Agricultural Society for 1892, computed that in Great Britain the average quantity of milk consumed per head in 1890 was sixty quarts. Sir James Blyth now states that from similar data and other information he has no hesitation in assessing the consumption of milk seven years later at eighty quarts per head for every man, woman, and child in the kingdom in 1897, which, if it reach the public at the low price of 3*d.* (six cents) per quart, is equivalent to a total payment for milk of no less than forty million sterling (two hundred million dollars), a sum, roughly speaking, equal to the whole wheat bill of the United Kingdom.—*London Times.*

The Handwriting of Medical Men.—Some time ago the question of the handwriting of prescribers was made the subject of some remarks in the general press in England, but British doctors appear not to be the only ones whose prescriptions are occasionally of a hieroglyphic character. *La Médecine Moderne* has recently had something to say on the subject. After sympathizing with the pharmacists, whose difficult task it is to decipher these illegible documents, the writer adds that the matter has attracted the attention of no less a person than the dean of the medical faculty of Paris. Professor Brouardel is concerned as to the dangers to the public likely to be caused by the execrable handwriting of many physicians. In a recent interview he is reported to have stated that he would take the earliest opportunity of bringing the matter to the notice of the professors of the faculty. What that body can do in the matter, however, is not very clear. We do not think that among ourselves the evil is of sufficient magnitude to call for any extraordinary measures of reform, such as the intervention of the General Medical Council. That the handwriting of many members of the profession is anything but legible is unfortunately too well known to us, from our editorial experience. Indeed, we are sometimes tempted to say in our haste that some of our correspondents regard writing as Talleyrand defined language—as a means of concealing thought. On this subject it is needless to say much, but if writers only realized that their

handwriting is often a bar to the insertion of communications, and still more often a cause of avoidable errors, especially in names, quantities, and so forth, they would, we think, take a little more trouble about this small matter than they do.—*British Medical Journal.*

The Prince of Wales is still wearing the apparatus which the medical experts have designed for him, and will probably continue to do so for several weeks.

The Doctor and the Monument Maker.—A physician, passing by a stonemason's yard, bawled out to him: "Good morning, Mr. W——. Hard at work, I see. You finish your gravestones as far as 'In memory of,' and then you wait, I suppose, to see who wants a monument next?" "Why, yes," replied the old man, resting for a moment on his mallet; "unless somebody is ill and you are doctoring him, and then I keep right on."

Responsibility in Mental Disease.—An eminent writer upon this subject remarks: "When one considers the reckless way in which persons, whatever the defects of their mental and bodily constitution, often get married, without sense of responsibility for the miseries which they entail upon those who will be the heirs of their infirmities, without regard, in fact, to anything but their own gratification, one is driven to think either that man is not the pre-eminently reasoning and moral animal which he claims to be, or there is in him an instinct which is deeper than knowledge. He has persuaded himself, rightly or wrongly, that there is in the feeling of love between the sexes something of so sacred and mysterious a character as to justify disregard to consequences in marriage. We have only to look at the large part which love fills in novels, poetry, and painting, and to consider what a justification of unreason in life it is held to be to realize what a hold it has on him in his present state of development, and what a repugnance there would be to quench its glow by cold words of reason. At bottom, however, there is nothing particularly holy about it; on the contrary, it is a passion which man shares with other animals, and, when its essential nature and function are regarded, we shall nowhere find stronger evidence of a community of nature between man and animals. It would not be a very absurd thing if an ingenious person, considering curiously what a solemn undertaking marriage is, and what serious responsibilities it entails, were to maintain that men and women should enter into it soberly and rather sadly, under a grave sense of responsibility as upon an uncertain voyage, and should reserve their rejoicings for the journey's end, when, having acted well their parts, they might fairly claim a *nunc plaudite.*"

Cinchona Industry of Java.—The British consul at Batavia, in his last report on the trade of Java, mentions an important development in the cinchona industry of the island. Java produces about two-thirds of the world's supply of cinchona, and it has for years been regularly shipped to Holland, where it has been sold by public auction. The large quinine manufactories, which are mostly situated in Germany, supply themselves with the raw material in the Dutch market; and of late years the manufacturers have combined to keep the prices at such a low level as to render the cinchona cultivation unprofitable, although the manufacturers of quinine have been earning large dividends. To meet this combination it was resolved to establish a quinine factory in Java; and this has been done at Bandong, where the first Java quinine has been produced. This is described as of excellent quality and equal in all respects to the best European brands. Some of the planters were tempted early last year by the rise of prices in Europe, consequent on the establishment of the factory at Bandong, to consign their cinchona to Europe rather than to their own factory, but now the latter is being well supported with the local raw material. Some large shipments of Bandong quinine have been made to London and smaller ones to other parts of the world, and the future of Java quinine will depend on the result of these ventures. Last year the total production of cinchona in the island was over eight and one-half million pounds avoirdupois.—*London Times.*

Stammering is sometimes met with as early as two years old in neurotic children; in these cases it is generally temporary. Persistent stammering rarely begins before the commencement of the second dentition, and is commoner in girls than in boys.—JOHN THOMPSON.

The Wheat Supply.—Sir William Blyth says: "The recent address of the president of the British Association was noteworthy for its insistence upon the application of science to agriculture, so as to increase the productiveness of wheat-growing areas, if, as he said, we were not ultimately to be squeezed out of existence by races to whom wheaten bread is not the staff of life. Notwithstanding Sir William Crookes' warning as to diminishing productiveness of wheat areas, I cannot help thinking that even in the event of prolonged scarcity of corn the British nation would be the last to feel the pinch, because of its preponderating wealth and by reason of the number of health-sustaining substitutes now in constant use."—*London Times.*

Legal Views on Syphilis.—In an action for divorce in a Pennsylvania court, infection having occurred before marriage through the medium of a kiss, the judge stated in his charge that he could imagine no more direct and palpable case of cruelty to a wife by a husband, for which the Pennsylvania statute allows divorce—"the wife," according to the judge's words, "after marriage having been kept constantly in a diseased condition from the same source, until she had passed into the secondary condition of the disease and had approached on the tertiary stage thereof, having endured for upward of five years the constant presence of one of the vilest, most shocking, and dangerous diseases with which the human body can be afflicted." There are here an implied state of repeated infections and a rather late beginning of what is usually termed the tertiary period.

Modesty among Philadelphia physicians seems to be so rare a thing that a medical publication of that city regards it of sufficient importance for comment that a surgeon who recently operated upon a somewhat distinguished patient withheld his name from the papers.

The Death Rate among the Troops in France, Algiers, and the Colonies.—Apropos of the much-mooted question of an unnecessarily large death rate in our army during the late war, it is of interest to note the statistics of the mortality among the French troops, recently published by M. Noël, in the *Revue Scientifique* of August 27, 1897. He summarizes his interesting article as follow: (1) The death rate among the officers of the land forces is 5 per 1,000; and in the marine infantry and artillery, 22 per 1,000. (2) The mortality of the troops in France amounts to 6.08; in Algiers, 12.27; and in the colonies, to 42.95 per cent. (3) In proportion to the severity of the training of troops, there is a rise in the death rate; this is true not only of the regular soldiers, but also of the *temporaires.* (4) In the armies of the colonies four-fifths of the total number of deaths is due to the endemic-epi-

demic diseases; in France, only half this number. (5) In the colonies malaria, enterocolitis, and liver affections are the chief causes of death; while in France, typhoid fever and grippe carry off the larger number. (6) Since the introduction of vaccination, small-pox is an insignificant factor. (7) The death rate from diphtheria is probably unimportant, on account of the introduction of serum therapy. (8) In France, pulmonary tuberculosis causes 1.09 deaths per 1,000; and in the colonies, 1.2. (9) The number of suicides in the colonial armies is about 2.5 in 1,000, while in France it is only 0.2 per 1,000. When we compare these statistics of an army at peace and those of the mortality rate among our own soldiers, which was something like two per cent., including those who fell in battle as well as those who succumbed to disease, it is only fair to ask whether the great outcry against the excessive death rate in our own armies is wholly warranted.

Hints to Authors.—Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than anything else.—RUSKIN.

An Aid to Digestion.—Chomel knew what he was talking about when he said that a man digests as much with his legs as with his stomach, for we know that exercise facilitates nutrition, increases the elimination of waste products, promotes appetite, and under proper conditions is an aid to digestion.—*Journal of Medicine and Science.*

Professor Albert has changed the phraseology of the golden rule to read: "Castrate others as ye would that others should castrate you."

Gift of Baroness Hirsch.—Baroness Hirsch has placed Tudor House, Hampstead Heath, which she purchased at the cost of $80,000, in the hands of trustees, to be maintained as a convalescent home for Jewish consumptives.

Health Reports.—The following statistics concerning small-pox, yellow fever, and cholera have been received in the office of the supervising surgeon-general of the Marine Hospital service during the week ending November 19, 1898:

SMALL-POX—UNITED STATES.

		Cases.	Deaths.
Alabama, Mobile*	October 27th to November 5th	1	1
California, San Francisco†	November 7th	1	
Michigan, Ecorse Township	November 9th	Present.	
N. Carolina, Edgecombe‡	November 12th	10	
Ohio, Cleveland	November 14th	1	
Virginia, Norfolk§	October 8th	1	

* Disease imported from Dwight, Ala., where small-pox was reported on September 12th.
† Employee on s.s. *Mariposa.* ‡ Imported from Norfolk.
§ Seven cases now in city pesthouse.

SMALL-POX—FOREIGN.

Belgium, Antwerp	October 15th to 22d	5	3
Russia, Moscow	October 8th to 15th	9	2
Odessa	October 15th to 22d	2	1
Turkey, Constantinople	October 26th to November 17th	..	21

YELLOW FEVER—FOREIGN.

Colombia, Barranquilla	October 15th to 22d	2	2
Cuba, Havana	October 28th to November 3d	..	6
Mexico, Tampico	October 16th to 23d	..	2
Vera Cruz	October 28th to November 3d	..	11
Vera Cruz	November 3d to 10th	..	8

CHOLERA.

India, Madras*	October 1st to 7th	21

* On October 10th a Calcutta *Gazette* "extraordinary" was issued, giving official notice that Calcutta was free from cholera.

Swedish Physicians. — The doctors of Sweden never send bills to their patients. If you have occasion to call a physician you will find him not only skilful in his profession, but a highly educated and honorable gentleman. You will also have a proof of the honesty of the Swedes and their friendly confidence in each other. What you shall pay your physician is left entirely to your own choice. The rich may pay him liberally, whether they have need of his services or not, if he has once been retained by them. The poor may pay him a small sum, and the very poor pay him nothing. Yet he visits the poor as faithfully as he does the rich. A similar custom prevailed up to the middle of the present century in some of the most remote portions of the Highlands of Scotland. There the doctor collected his entire year's bills on a certain market day in summer, getting perhaps five or ten pounds from the larger farmers, but only as many shillings from the poorer crofters.—*Medical Age*, September.

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

TRANSACTIONS OF THE MICHIGAN STATE MEDICAL SOCIETY, 1898. Vol. XXII. 8vo, 452 pages. Illustrated.

THE HAND. By Dr. Edward Blake. 8vo, 53 pages. Illustrated. Henry J. Glaisher, London.

INDEX-CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, U. S. ARMY. Vol. III. Royal 8vo, 1,100 pages, Washington.

CLINICAL LECTURES. By W. A. Lane, M.S. 8vo, 278 pages. Illustrated. Medical Publishing Company, Ltd., London. Price, 5s.

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A PLEA FOR EARLIER RECOGNITION AND PROMPTER ACTION IN MALIGNANT DISEASE.[1]

BY JOSEPH D. BRYANT, M.D.,

NEW YORK.

THE selection of this somewhat well-worn topic for consideration this evening is largely owing to the fact that during the last few weeks far too many of those affected with the inevitable outcome of advanced malignant attack, dependent chiefly on lay and professional procrastination, have come under my immediate observation for relief. And when it is stated further that, in an instance of an operable case of cancer of the breast with axillary involvement, a highly reputable surgeon had deferred action for a month on the ground that "it would make no difference," it appears to the reader that much additional force is given to the need of urgent expression, directed to securing prompt and thorough action.

In another case in point, a patient with marked involvement of the lower jaw, due to malignant submaxillary gland extension, the sequel of epithelioma of the lip, was presented for relief, with the history of early submaxillary involvement and the admonition to the patient from the physician, "Call and see me" should further increase ensue. The patient, left to his own observation and tortured with fears of malignant involvement, accounting for evident increase by biassed lay reasons, finally presented himself four months later, in the condition already stated, and acknowledged that he would have come before had he not feared to be informed of the correctness of his worst anticipations. Surely this patient's chances could have been much enhanced and the patient rescued from the outcome of his own delusions, had wise professional vigilance and action been exercised.

The constant and active presence of a persistent and untiring enemy of human life and happiness justifies the consideration at any time of means best suited to lessen the evil effects and to defeat the fatal outcome of its presence.

This expression is not intended as an apology for the title or for what is to follow, but rather as a quasi admission that what may be said will savor of a somewhat later period than yesterday. The seekers after truth, like those in search of the baser things, can, not infrequently, gain much from that which was left behind, by working over again in a newer method the leavings of ineffective or careless effort.

It seems to me that the Practitioners' Society is just the place in which to consider the practical features of the title of this brief communication. Surely here, if anywhere, the consideration should have special significance, not only because of the active lines of the professional endeavor of its members, but also from the freshness of their experience in numerous individual instances.

That malignant disease is slowly and continuously increasing in the human family appears to admit of no denial; and that the increase seems to be one of the penalties of a membership in the ranks of advancing civilization can hardly be gainsaid. For the cruder the race, the freer it is from this infliction: the more refined it is, the greater appears to be the weight of the malignant burden.

In 1889 England lost 18,654 of her people from cancer, this number being 3.6 per cent. of the entire death rate for that year. In 1893 London alone lost 3,412 of her population from this cause, a percentage of 3.73 of the total death rate for the year. And during the ten years preceding 1895, the death rate from cancer increased 0.87 per cent.

In Berlin in 1892 "cancer and tumors" destroyed 1,138 of the population, a rate of 3.48 per cent. of the total deaths for that year. In the same city in 1877 the deaths from these causes are recorded at 2.10 per cent., showing an apparent increase of 1.38 per cent. in fifteen years.

In Vienna the deaths from cancer in 1890 were 4.96 per cent. of the total death rate for that time, and during the preceding eight years the death rate from the same cause had increased 0.84 per cent.

In Paris, in 1893, cancer caused 4.61 per cent. of the total death rate.

I will not trouble you longer with foreign evidences of a marked and increasing death rate from this infliction, but, instead, will recall similar testimony of the outcome in this regard in our more immediate presence. The average death rate from cancer in New York City during the ten years prior to 1895 was 2.17 per cent. of the total mortality of that period, showing an increase of 0.35 per cent. in the preceding ten years.

Permit me to add, in brief, in connection with other important cities of the United States, that in 1895 Philadelphia showed an increasing rate of 0.26 per cent.; Boston, 0.54 per cent.; Baltimore, 0.64 per cent.; New Orleans, 0.52 per cent.; and San Francisco, 0.84 per cent. during the preceding ten years.

It may not be uninteresting to note the fact that the deaths from cancer in fifty of the large cities of the United States is 16.34 greater per 100,000 living than in the remaining portion of the country. It is proper to say, however, that a part of this difference can be justly attributed to the comparatively greater completeness of the mortality records of city districts and to the presence in the city of those who seek the advantages it offers for relief.

It may not be unimportant at this time to note the fact that certain parts of the body exhibit a comparative increase in the frequency of malignant attacks, while others remain stationary and even suffer less than before in this respect. It appears that there has been a large increase of malignant manifestation in the upper organs of the digestive system of men—in the mouth, the tongue, the pharynx, and the fauces—while in women the contrary is observed. The generative and mammary organs of women—the commonest seat of malignant disease in the sex—show but a slight increase in this regard, while the intestines, rectum, liver, and bladder of the female exhibit a marked increase.

It is not impossible that much of the difference is

[1] Read before the Practitioners' Society of New York, November, 1898.

dependent on improved diagnosis in the latter instances. At all events, it now appears that those parts of the body possessed of especial physiological significance, and which are exposed to the evil effects of perverted appetite and mischievous habits, are foremost in the field of malignant development. In 1,000 deaths from cancer in New York City in 1893, the tongue was the seat of disease in 18, the œsophagus in 19, the stomach in 253, the intestines in 39, the rectum in 42, the uterus in 196, and the breast in 91 instances.

The remaining portion of this paper will be largely of an interrogatory character, and will be presented in logical sequence.

(1) Do surgical measures afford relief?

(2) Does thoroughness of operation favor subsequent immunity?

(3) Do early recognition and prompt action in malignant disease contribute to effective surgical effort?

(4) Will not earlier recognition and prompter action of all concerned in malignant disease increase the present rate of cure; and, if so, how can these desiderata be attained?

Inasmuch as the stomach, uterus, and female breast are the most frequent seats of malignancy, and since each is amenable to operative practice, they will be regarded at this time and without extended allusion as representative illustrations of the need of greater vigilance and action along the entire line of malignant advance.

Do surgical measures afford relief? As it seems to me, it is needless at the present day and age to address a question like this to an intelligent mind. For, in view of the certain outcome of unhindered development, as witnessed along the line of every medical effort, no other than an affirmative answer can follow, and, too, so promptly on the heels of the query as to constitute, without punctuation, a part of the leading expression.

However, according to Gross, Aldekop, Henry, and Winiwarter, with cancer in the breast the average duration of life without operation is 27.15 months; with operation along the older lines of action, thirty-nine months—making a difference in favor of operation of 11.85 months, or substantially one year, and with all of the advantages the respite implies.

This interrogatory can be regarded as rather euphonic than otherwise in this connection.

Does thoroughness of operation favor subsequent immunity? For the purposes of this paper, as wide removal of the seats of present and of prospective malignancy as possible may be regarded as constituting thoroughness of operation. In the edition of 1870 of his "Pathology," Sir James Paget uttered the following: "I am not aware of a single clear instance of recovery—of such recovery, that is, that the patient should live for more than ten years free from disease." Surely an expression of this sombre character and from such a source afforded but little encouragement to the afflicted and scarcely any support to operative adherents. It needs no words of mine to express the fact that this doleful declaration was prompted, no doubt, by the recognition of the sad outcome of the delayed and inadequate efforts that characterized the time of its utterance.

Gross, writing in 1880, dispelled much of the gloom caused by the experience of Paget; since he showed then that 9.05 per cent. of all cases of cancer of the breast were cured for ten years by improved operative technique. Later the same author reported 11.83 per cent. of cures, which list included cases up to 1885. Bull, in 1894, reported plus twenty-six per cent. of cures, based, the same as Gross' last report, on the three-year limit. Halsted reports by the same time measure a rate of cure of about fifty-two per cent.

There appears to be no doubt of the fact that to wide and thorough removal of the present and prospective seats of the disease much of this increased gain is due. It seems to the reader, so far as the breast is concerned, that progressive surgeons have now nearly reached the limit of expectancy in this regard, unless other precautionary and technical issues are raised and enforced that will increase materially the present record of cures.

Do early recognition and prompt action in malignant disease contribute to effective surgical effort? That malignant disease extends from a selected site chiefly by infiltration of contiguous tissues and by the lymph channels to lymph nodes, to fascia, etc., is conclusively proven by microscopical demonstration and clinical observation. The lymph nodes are the signal stations of the advancing enemy, and at varying intervals manifest by both gross and microscopical characters the arrival there of the subtle foe.

There can be hardly a well-founded doubt of the fact that the comparative functional activity of diseased parts regulates correspondingly through the various channels the dissemination of the infecting agents. Therefore, in view of these facts, the anticipation of malignant dissemination by means of operative practice demands not only early recognition of the danger, but prompt ablation of the source of infection and the destruction, so far as possible, of the lines of communication to the neighboring points of attack.

The tendency to implicate the contiguous tissues rapidly is too well recognized to require comment. The process appears to involve the skin sooner than it does the glands and deeper tissues. Of this, however, there can be no certainty in individual cases, as the glands are frequently invaded without appreciable physical manifestation of involvement on palpation. In fact, it is within the experience of many observers that the axillary glands have become involved in mammary cancer without appreciable increase in their size, as estimated even after removal.

According to Winiwarter and others, axillary-gland involvement takes place on the average in fifteen months. Gross expressed the fact that axillary infection happens within six months in one-fourth of the cases. The reader recalls a case of his own in which a mammary cancer, the size of a walnut, of two months' recognized presence, was attended by numerous infected axillary glands, not appreciable on palpation. In those instances in which the axillary glands were infected, the supraclavicular also were involved in 6.25 per cent., the infraclavicular in + 1 per cent., and the cervical in + 0.7 per cent. of the cases.

According to Gross, a greater or less fixity of a diseased mamma to the underlying tissues takes place in from six to eight months after involvement of the overlying fascia and skin, in the majority of instances. In these cases the pectoral muscles are involved in one of every fourteen, the intercostal muscles in one of every seventy-four, and the ribs in one of every thirty-six cases, approximately.

The importance of the foregoing facts, as bearing on the relation between promptness and completeness of surgical action and the final outcome in mammary malignancy, is self-evident. As relating to this question, permit me again to refer to Gross, who analyzed one hundred and thirty-six cases of amputation of the breast for carcinoma, in which recurrence took place; in forty-three of these cases the lymph nodes were not apparently affected at the time of operation; the average duration of life in these cases was 52.7 months from the recognized beginning of the disease. In the remaining ninety-three cases, in which the glands were involved at the time of operation, the average duration of life was only 39.3 months from the first appearance of the disease—an average difference of more than a year.

The results of operative effort in malignant disease of the uterus are advancing apace with that of the breast; and here as elsewhere, the beneficent results dependent on early diagnosis, prompt and effective treatment, supplemented by improved technique, are emphatically evident. It needs not further time or any figures to impress the facts that in the stomach, as in the preceding organs considered, as early a diagnosis as is possible and as prompt surgical effort as is practicable should always be had.

There is much more of convincing significance that can be said bearing on this phase of the question, but, since the fact seems to be proven already, it is as unwise as it is needless to add further words, and, too, with the risk of obscuring the leading proposition.

Let us now pass to the consideration of the fourth and final interrogatory.

Will not prompter and more effective action of all concerned along the lines of anticipation and established treatment increase the present comparatively high rate of cure; and, if so, how can these desiderata be acquired? All that has been said by the reader thus far is of a diminutive amount compared with that which can be uttered conclusive of the facts that the earlier the discovery of the presence of malignant disease, and the prompter the wide removal of its present and prospective points of attack is practised, the less is the danger of the effort and the greater will be the rate of subsequent immunity.

The desiderata can be acquired in the fullest degree only by the co-operation of all concerned; the patient should be impressed with the necessity of informing the physician of the presence of a tumor or other abnormality on the moment of its discovery. Personal indifference, unwise pride, and the fear of uncanny knowledge are the chief impediments to co-operation on the part of this factor in the attainment.

The physician ought promptly to ascertain the nature of the abnormal manifestation, and this, too, without undue reliance and hair-splitting differences regarding the history of development. Free incision in the instance of tumor for determinative purposes, followed at once by complete ablation, if practicable, and supplemented thereafter by periodical examination, should be the rule of action in malignant cases.

Deterring influences closely allied in their effects to ignorance, self-assumption, complaisance, and sickly sentiment on the part of all concerned—each too often robs the patient of the lasting benefits of prompt and intelligent surgical action.

RECENT ADVANCES IN THE NORMAL AND PATHOLOGICAL HISTOLOGY OF THE CENTRAL NERVOUS SYSTEM.[1]

By FREDERICK RANDOLPH BAILEY, M.D.,

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Should some neurological Rip Van Winkle awake today after his twenty years of oblivion, and should he find his way into one of our larger medical libraries, and have there placed before him any of the more recent works upon his favorite subject, he would stand no less amazed than did the real Rip when, after his long sleep, he found himself once more in his native village. He would look in vain for the faces of the once familiar words, and he would put his hands to his head in bewilderment at the new and unknown terms, in a few of which he might recognize some faint lines of resemblance to past friends. And if he is an astute observer he realizes that the science of neurology has made tremendous strides in those past twenty years, for each new name but indicates some new thought—the genesis of the term but succeeds the genesis of the idea.

The history of the advances which have marked the evolution of our knowledge in all those branches of medical science which necessitate the use of the microscope is the history of advances in operative technique. In histology, in pathology, in bacteriology, each new era of progress has been but the successor to some new method of investigation. *Par excellence* may this be said of the development of our knowledge of the normal and pathological histology of the nervous system. Each new discovery in neurological technique has opened up new paths of investigation, and has invariably led forward to important progress in knowledge. The climax of investigation along the lines of a given method is reached and research is on the wane, when some new "way" is announced and the whole neurological world is again in a bustle of activity to carry to exhaustion the possibilities of this new method of work.

Aside from those discoveries in general operative technique which mark epochs of advance in histology and its allied sciences—such discoveries as fixation

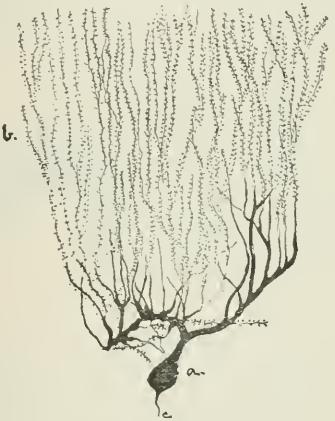

Fig. 1.

and hardening of tissues, staining, section cutting, etc. —three discoveries in method mark three distinct eras in the development of our knowledge of the architecture of the central nervous system.

(1) The method of Weigert. This may be called the "nerve-fibre method." It stains only the medullary sheath, and therefore differentiates the medullated nerve fibre only. Following the discovery of the method of Weigert, came a long line of valuable investigations upon the courses of the various fibre tracts of the brain and cord. As, however, the fibre leaves the cell in a non-medullated condition, this method gave no insight into the relations existing between the nerve fibre and the nerve cell, nor did it give any indication of the minute structure of the nerve cell.

(2) The method of Golgi. As the method of Weigert is the nerve-fibre method, so the method of Golgi is the "nerve-cell method." It stains homogeneously the nerve cell *in toto*—that is, the nerve cell and all its processes up to the point of acquisition of the medullary sheath, beyond which point it does not stain. This method gives us, as it were, a neuron "silhouette." It pictures the entire nervous system as made up of a great number of superimposed units. These units or nervous elements are seen to be anatomically independent of one another; each unit constituting a complete nervous mechanism, capable of

[1] Fellows Prize Essay for 1898 of the Medical Society of New Jersey.

receiving a nervous impulse, of acting upon it, and of transmitting it.

The technique of the method of Golgi is extremely simple. Briefly it consists in:

(1) Hardening in a solution of potassium bichromate.

(2) Transferring to a solution of silver nitrate.

(3) Embedding, section cutting, and mounting as usual.

Treated by this method, the nerve cell presents a striking picture (see Fig. 1).

The cell body (*a*) appears jet black by transmitted light, and shows no evidence of any internal structure. Passing off from the cell body proper are seen innumerable branches crossing and interlacing with one another, but never anastomosing. These (*b*) are known as the protoplasmic processes, are stained like the cell body, black, and are seen to be studded with little excrescences having knobbed ends and known as "gemmules" (Fig. 2). These protoplasmic processes divide and subdivide, becoming rapidly smaller as a result. From some part of the cell body or from one of the larger protoplasmic processes a process of a quite different nature is seen to pass off. This is rather straight, sends off but few branches, these few at right angles and not perceptibly diminishing the diameter of the process. This process is known as the axis-cylinder process (Fig. 1, *c*), and is destined to become the axis cylinder of a nerve fibre. By this

Fig. 2.

Fig. 3.

method are also stained the cells and fibres of the type of connective tissue peculiar to the nervous system, the neuroglia.

As a result of investigations upon the structure of the central nervous system by means of the method of Golgi, certain facts of extreme importance have been ascertained. These are:

(*a*) That the nerve cell and the nerve fibre are not, as we had so long believed, two separate elements in the structure of the nervous system; that no nerve fibre exists that is anything other than an outstretched arm, as it were, of a nerve cell; and, conversely, that there is no nerve cell but is continuous by one of its prolongations with a nerve fibre; that if, applying the same method, we look to embryology for light on the subject, it shows us that the nerve fibre is developed as an outgrowth of the protoplasm of the cell body; that the process of the nerve cell with which the nerve fibre is continuous is always the axis-cylinder process. This process is physiologically centrifugal in character; that is, it carries impulses only *from* the cell.

(*b*) That, in addition to the axis-cylinder process, the nerve cell possesses numerous other processes of a different nature, both as regards structure and function. These are known as protoplasmic processes, and are centripetal in character; that is, they transmit impulses *to* the cell body. They are what might be called the "sense organs" of the cell, and represent its receptive apparatus, bringing it in touch with the terminal arborizations of the processes of other cells (Fig. 3).

(*c*) That the nerve cell with all its processes—this "neuron," as it is called—is a distinct and separate nervous entity, a complete unit in itself, and unconnected by continuity with any other nervous element. It follows directly from this that the passage of a nervous impulse from one nerve cell to another must take place either through contact or, more likely, through mere contiguity of the nervous elements concerned.

(*d*) That the nervous system as an organ is made up upon the same general plan of architecture as are the other organs of the body. The neuron represents the parenchyma cell of the different parts of the nervous system considered as organs, and from both anatomical and functional standpoints. The neuron of the brain, for example, holds exactly the same relation to the brain as an organ, as does the parenchyma cell of the liver to the liver as an organ. In each case it is the anatomical, the functional unit—that by virtue of which brain is brain and liver is liver; and in each case the parenchyma cells are supported by a connective-tissue framework, modified, it is true, in the case of the nervous system, differentiated both morphologically and embryologically from that found in the other organs of the body, and yet a real supporting connective tissue.

(3) The value of such a method of technique, to which we owe such fundamental facts as those enumerated, cannot be overestimated. But valuable as were the methods of Weigert and Golgi, and far-reaching as were their effects upon our knowledge of the structure of the central nervous stysem, they gave us no insight into the minute structure of the ganglion cell. It was not until Nissl announced a method of differential staining of the contents of the cell body that any advance was made in our knowledge of neurological cytology. When we consider in what a rudimentary state our knowledge of the ultimate structure of the nervous system really is, and especially how little we know of the physiological significance of our anatomical data, how little more we actually comprehend when we speak of the origin and the transmission of a nervous "impulse" than did Rene Descartes three centuries ago, when he spoke of "animal spirits"—we appreciate the attractiveness of a method which reveals the ultimate structure of the cell body and offers some hope of solution of the vexed questions which constitute the "metaphysics," as it were, of neurology.

Briefly stated, the technique of the method of Nissl is as follows: (*a*) Tissue, fresh as possible, is placed in a quick fixative, such as absolute alcohol or such mixtures as those of Lang and Van Gehuchten; (*b*) hardened in absolute alcohol; (*c*) embedded and cut in the usual way; (*d*) sections stained in a solution of methylene blue; (*e*) sections decolorized in alcohol containing aniline oil; (*f*) cleared and mounted as usual.

Subjected to this method of technique, we observe that the cells of the central nervous system present two widely different types of reaction: First, certain cells stain only as to their nuclei, the cell body remaining perfectly clear. Such cells are those found in the olfactory lobe, the cerebellum, the retina, forming the so-called granule layers. To these cells Nissl has given the name caryochromes. As only the nucleus stains, it is evident that nothing will be learned by the application of the method of Nissl to these cells, except as to their nuclei. Second, the vast majority of nerve cells, however, react both as to their nuclei and as to their cell bodies to the methylene-blue stain. To these cells Nissl has given the name somatochromes. As the somatochromes alone react as to their cell bodies to the method of Nissl, it is these somatochrome cells which acquire an interest when studied by this method of technique.

If we take as an example of a cell of this type one of the large ganglion cells of the ventral horn of the spinal cord, and pass it through the technique of Nissl, we can diagram its structure as in Fig. 4:

(1) A nucleolus which stains an intense blue.

(2) An intranuclear network or nucleo-reticulum—usually retains a faint blue color, but is easily decolorized, and then restains readily with a basic dye like eosin.

(3) A clear ground substance or nucleoplasm—unstained.

(4) A nuclear membrane which stains like the reticulum.

(5) A cell network or cyto-reticulum, faintly colored and in specimens not specially prepared, obscured by the more deeply stained elements of the cell body. This reticulum is present throughout the cell, and extends as fine striations into the cell processes.

(6) Deep-blue-staining bodies of various shapes and sizes, scattered through the cyto-reticulum and known as chromophilic bodies.

(7) A basement substance which is achromatic.

It is this stainable substance, these so-called chromophilic bodies, which are of special interest when studied by the method of Nissl. They present various forms; are deposited in larger or smaller masses; are regular or irregular in shape; may be triangular or elongated rods; may be arranged in rows or without any apparent order; may be close together or somewhat separated. Sometimes we find a large mass of chromophilic substance, as the "capuchon nucléaire" or nuclear cap; or, again, as the "cone de bifurcation," or triangle of division, as is called the triangular-shaped body which often marks the early bifurcation of the protoplasmic process. One part of the cell is always free from chromatic substance. It is the area adjacent to the axis-cylinder process, and called the "axon hill."

The manner of disposition of the chromophilic bodies furnished to Nissl a basis of classification. Having separated off the cells staining only as to their nuclei as caryochromes, he subdivided his somatochromes as follows:

(1) Arkyochromes, or cells in which the chromatic substance arranges itself in rows or chains.

(2) Stichochromes, or cells in which there is a more or less regular distribution of the chromophilic bodies throughout the cell.

(3) Gryochromes, or cells in which the coloring matter appears as fine granules.

(4) Arkyo-stichochromes, or cells in which a combination of the preceding is present.

At the time this classification was announced by Nissl, it was with the expectation that each morphological type of cell would correspond to a physiological type. Subsequent observations, however, have failed to confirm this theory.

Such being the appearance of certain cells of the nervous system when treated by the method of Nissl, what significance are we warranted in attaching to the picture?

Cajal, Held, and Van Lenhossek, working upon the nature of the chromatin, came to the same conclusion—namely, that all chromophilic bodies, however homogeneous in appearance, were really granular in character. Held and Dogiel, following up the idea suggested, examined fresh specimens in a passive medium and discovered that chromophilic bodies as such do not exist in these fresh specimens, and therefore not in the living cell. The living cell possesses a slightly alkaline reaction. This reaction changes to acid within a very few minutes after death. This change in reaction undoubtedly has a very decided effect upon the albuminoid elements of the cell. That the discovery of the non-existence of chromophilic bodies in the living cell vitiates the discoveries of Nissl, however, is far from the truth. Undoubtedly there exist in the living cell no distinct bodies which when dead and stained give rise to the Nissl picture; but it is nevertheless a fact that there does exist in the living cell some substance, a part of the cell protoplasm, which when treated by certain fixatives and stained by certain dyes, gives rise to the appearance seen in the Nissl preparations. That this is of the nature of a precipitation is probably true. That cells from different parts of the nervous system, of different sizes, shapes, and functions, should react in different manners to the same method, far from being a strange phenomenon, is what chemistry would lead us to expect. What we see in a nerve cell treated by the method of Nissl is an artifact, and yet it is an artifact which is always the same for a given cell and which is a real measure of the condition of the living cell. My own investigations by the use of the method of Nissl upon the cells of the central nervous system in the rabbit and in the guinea-pig have only confirmed an opinion I had previously formed, that in the present state of our knowledge on the subject we can safely say this and no more:

That, given a definite and satisfactory technique, a given nerve cell will always present the same reaction when subjected to that technique; that in comparing one cell with another, and especially in comparing cells presumed to be pathological with cells presumed

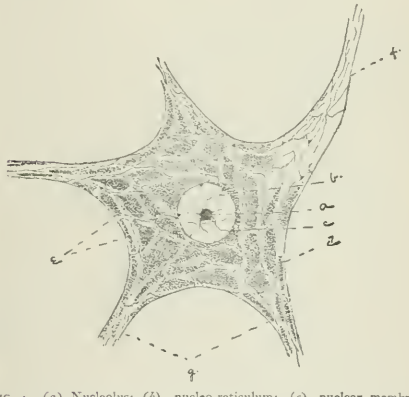

FIG. 4.—(*a*), Nucleolus; (*b*), nucleo-reticulum; (*c*), nuclear membrane; (*d*), cyto-reticulum; (*e*), chromophilic bodies; (*f*), axis-cylinder process; (*g*), protoplasmic processes.

to be normal, the two sets of cells must have passed through exactly the same technique.

Such being the appearance presented by a ganglion cell when subjected to the technique of Nissl, and such being the conditions of its application, what is the probable physiological interpretation of the picture?

(1) That the nucleus of a nerve cell differs in no essential from the nucleus of any other cell, either as to structure or as to function. It seems to preside over the constructive metabolism of the cell, to be the chief controlling agent in the transformation of the food products brought to the cell by the lymph into the food elements of the cell itself, and their further elaboration from food elements of the cell to form the nervous elements; in other words, the conversion of potential into kinetic energy.

(2) That the cyto-reticulum or cell network represents the working mechanism of the cell. It alone is concerned in the reception, transformation, and emission of nervous impulses, and its condition determines the capability of the neuron in its nervous capacity. Thus, let us imagine a nerve cell stained by the method of Golgi, and then the same cell stained by the method of Nissl and superimposed. The resulting picture may be diagrammed as in Fig. 5.

In this diagram it will be seen that the cyto-reticulum extends far out into the protoplasmic processes,

even into the gemmules themselves. It is believed to possess in this connection both conductive and contractile powers. Thus, while serving to place every remote part of the neuron in direct touch with every other part, and allowing the transmission to the centre of the neuron of any message received at any point in its periphery, it also serves as the retractive element for those same parts. Thus, for example, can a cell determine the extent of its contact with other cells; if in a condition of fatigue, it can retract its gemmules, thus throwing itself out of circuit, as it were, and allow itself time for recuperation. Just how far, upon this theory as a basis, we can explain such phenomena as sleep, as hypnotism, as coma; or, on the side of excitation, the phenomena of hysteria, of delirium, etc.—is as yet undetermined. If the passage of an impulse from one cell to another depends upon the contact or close approximation of its peripheral endings, we can very easily see how the separation of these endings can impede or even prohibit the passage of such impulse.

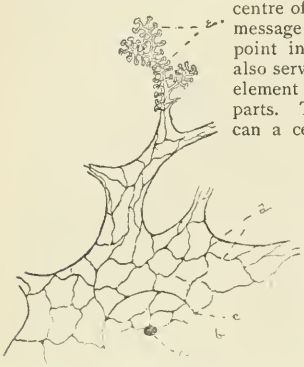

Fig. 5.

(3) That the cyto-lymph is the food element of the cell, bathing the cyto-reticulum on all sides, and acting as a reservoir of potential energy for its replenishing; the cytoplasm itself being constantly reinforced by an elaboration of the food elements brought to it by the blood through the lymph channels. That this cyto-lymph can be subdivided into two constituent elements—a coarser food product, which, when precipitated after death, is stainable as the chromophilic bodies; and a more refined food product, the direct food of the cyto-reticulum—is a theory that has recently been advanced. As lending support to this theory is the absence of the chromatic substance in the probable region of the most delicate functional activity, *i.e.*, that surrounding the exit of the axis cylinder. Such may be the case. In the light of our present knowledge, however, it would appear that such refinement in description is rather in advance of our knowledge of facts.

But if the new methods of technique have caused a revolution in our ideas of the structure of the normal nervous system, they have caused no less sweeping modifications in our views of the changes produced in that system as a result of disease processes. The method of Golgi, on acount of its unreliability and lack of uniformity of reaction, combined with the fact that this method shows only the neuron as a whole, and that lesions the most important are often evidenced only by changes within the cell, has had a very limited usefulness in neuro-pathology. The method of Nissl, on the other hand, giving as it does deep insight into the structure and condition of the cell protoplasm, is eminently fitted for the study of changes, even the most delicate, which are brought about as the result of disease.

At the time of the introduction of the method of Nissl, the nervous system had a distinct and fairly well-investigated normal and pathological histology of its own. It appeared to be, as it were, a region apart by itself, different from the rest of the body in structure and in reactions to disease processes. The differences in terms used sufficiently evidence this fact. The early results of research by means of the Nissl technique only added new terms and increased the confusion. Further research, however, by the use of the same method, has brought about a simplification not only of the results of previous work with the new technique, but also of the results of all the earlier work by means of older methods. A complete revision, marked by increased simplicity and unity, has taken place in the classic ideas as to the normal and pathological histology of the nervous system. That this is true as regards the normal histology of the nervous system has been shown in the description already given in this paper of the analogy of architecture of the brain and spinal cord to that of the other organs of the body.

Turning now to pathology, let us see in how far we can make the terms with which we are accustomed to describe lesions in other parts of the body serve the same purpose in describing lesions of the nervous system.

I. Parenchymatous Degeneration, or Acute Degeneration of the Nerve Cell.—If we examine the nerve cells of the cerebral cortex in a case of acute alcoholism—say in a case of death from delirium tremens—we notice certain changes in the appearance of the ganglion cells.

Fig. 6 represents cells from (*a*) a normal cortex; (*b*) a cortex from a case of acute alcoholism. It is immediately observed that some change has taken place in the cell, which has affected the nature of the precipitation of the cyto-lymph. It no longer comes down as well-defined granular masses, leaving the remainder of the cell perfectly clear, nor are the masses of staining substance as numerous as in the normal cell. The chromophilic bodies are seen to be broken up, to be smaller and less clearly defined, and to be fewer in number. The background against which these lie is not clear, as in the normal cell, but retains sufficient chromatin to enable it to take more or less of the blue stain.

Fig. 7 represents some Purkinje cells: (*c*) from a normal cerebellum; (*d*) from a cerebellum from a case of insolation.

Fig. 8 represents (*e*) a cell from the ventral horn of a normal cord, and (*f*) a cell from the same region of the cord in a case of rabies.

It will be observed that, in the three cases presented in Figs. 6, 7, 8, allowing for the inherent differences in cells from different localities, essentially the same condition is present in all the pathological cells. Not all the cells are in the same stage of degeneration. A careful study of the specimens from which the drawings are taken shows cells in all stages of chromatolysis, as the destructive change in the chromatic element of the cyto-lymph is called. Here and there are found cells to all appearances perfectly normal. From this all

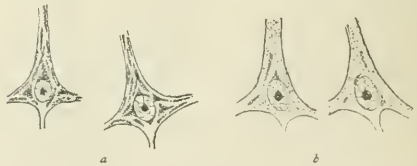

Fig. 6

grades of modification of the cytoplasm are observed up to complete destruction of the cell.

These degenerative changes in the nerve cell have been found, not only in the diseases mentioned in connection with Figs. 6, 7, 8, but in a large number of other diseases. These diseases fall into three general classes:

(1) Auto-intoxications; such, for example, as (*a*)

the various uræmic conditions, including eclampsia; (*b*) diabetes; (*c*) sunstroke.

(2) External poisons; such, for example, as (*a*) acute alcoholism.

(3) Infectious diseases; such, for example, as (*a*) typhoid; (*b*) pneumonia—in fact, the entire list of infectious diseases.

This lesion we have already characterized as parenchymatous degeneration. It is seen to occur in those

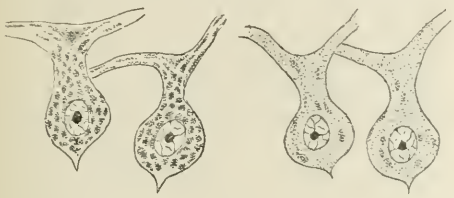

Fig. 7.

diseases in which we expect to find degenerative changes in the other organs of the body. It is, in all probability, in no way different from those degenerations. The essential nature is the same in all, its appearance modified only by the kind of cell in which it occurs.

Remembering now our physiological explanation of the normal appearance of the ganglion cell when treated by the method of Nissl, what insight can we get into the nature of this degeneration?

The nerve cell, like the other cells of the body, receives its nourishment from the blood through the lymph. Each nerve cell is surrounded by a lymph space. From this lymph the food elements which the cell requires are taken directly into the body of the cell. A further elaboration to fit them for use as food for the nervous mechanism of the cell results, as has already been said, in the so-called cyto-lymph, from the constituent elements of which the chromophilic bodies are precipitated. Any change, therefore, in the quantity or quality of the lymph would be evidenced by changes in the quantity or quality of the cyto-lymph, and such changes in the cyto-lymph would naturally be expected to show themselves in the resulting precipitate—namely, in the chromophilic bodies. The diseases in which we find these already described modifications in the precipitation of the cyto-lymph are such as would be expected to produce changes in the character of the blood and lymph. They are diseases in which we find degenerative changes in nearly all the other organs of the body. This, then, is the at

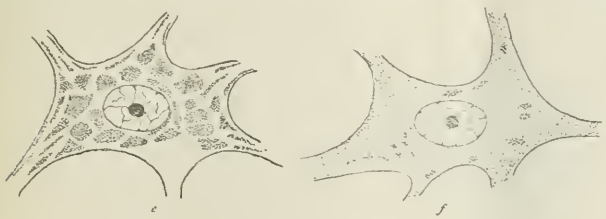

Fig. 8.

present accepted explanation of the changes in acute degeneration of the nerve cell, or, speaking of the different parts of the central nervous system as organs, in acute parenchymatous degeneration of those organs; a change in the character of the food elements of the cell, brought about by a change in the character of the cyto-lymph, caused by the action of the disease. That these changes in the food elements of the cell soon produce changes in the cyto-reticulum or true nervous elements of the cell is undoubtedly a fact. The nerve cell is the most highly differentiated cell in the body, and the higher in organization the cell the more immediately dependent is that cell upon its source of nourishment. Thus, the nerve cell depends, not hour by hour, but almost minute by minute, upon the surrounding lymph for its food supply. The cell has work to do; there is a dissipation of energy. There is, then, a very delicate equilibrium existing between food supply, on the one hand, and expenditure of energy, on the other; and any factor which tends to disturb this equilibrium immediately affects the functionating powers of the cell. The method of Nissl enables us to examine the condition of the cyto-lymph, but there is as yet no satisfactory method for minute examination of changes in the cyto-reticulum. There is undoubtedly some point in this degenerative process which, when reached, completely inhibits the activity of the cell. There is likewise a point beyond which, if a cell degenerates, the ability of the cell to return to normal is lost. The present state of our knowledge does not enable us to say just what appearance of the cell indicates that such point has been reached, almost complete chromatolysis seemingly being sometimes compatible with a very considerable degree of functional activity. Until some new method of examining the cyto-reticulum is discovered, these and similar questions appear destined to remain unsolved.

There is a form of parenchymatous degeneration which has been described as peculiar to lesions especially affecting the axis cylinder. This is well shown in Fig. 9, which represents a cell from the anterior horn of the spinal cord in a case of peripheral neuritis.

Fig. 9.

Its peculiar characteristics are as follows:

(*a*) A diffuse blue stain throughout the cell, with an absence of chromophilic bodies in its central area—central chromatolysis, as it is called.

(*b*) A peripheral arrangement of the remaining chromophilic bodies.

(*c*) Eccentricity of the nucleus; the nucleus, which in a normal cell lies, almost without exception, in the centre of the cell, having migrated so as to assume a position near or at the periphery. That migration of the nucleus is a phenomenon associated with starvation of the cell has been shown for the lower forms of animal and vegetable cells. Just what change in food supply determines this eccentricity of the nucleus has not yet been ascertained. That it is a special modification, and does not occur in all changes in cell nutrition, is proved by its occurrence in this form of degeneration of the nerve cell, while not occurring in the more common type previously described.

Viewed in this light, peripheral neuritis is primarily a disease affecting the food supply of the ganglion cell of the anterior horn of the spinal cord: and, this being the case, the parts of the neuron first affected are those parts most remote from the source of supply, *i.e.*, the peripheral nerves. Experimental section of the peripheral ends of neurons produces similar changes in the ganglion cell. This would mean that this type of degeneration follows loss of function of the axis cylinder—"axon degeneration," as it is called. The converse—that every cell presenting this type of degeneration is a cell the axis cylinder of which has ceased to functionate—is as yet not established.

II. Acute Exudative Inflammation.—If we examine the pons, the medulla oblongata, or the spinal cord, from a case of hydrophobia or from a case of rabies produced experimentally in one of the lower animals, we find certain lesions present. These lesions differ

Fig. 10.

in extent in different cases, and also in the type of lesion which predominates in a particular case. This depends, among other factors, upon the severity of the infection and upon the length of time the parts have been exposed to the poison before death ensues.

Fig. 10 represents the anterior horn of the spinal cord of a rabbit dead from experimental rabies.

The walls of the blood-vessels and the perivascular lymph spaces are seen to be crowded with escaped leucocytes. Accumulations of leucocytes are also seen, apparently at a distance from any blood-vessels, in among the ganglion cells, forming areas of exudation. Besides this emigration of white blood cells, there are also often present small collections of red blood cells in the tissues, constituting small hemorrhages. Apparently independent of the exudation and yet due to the same general cause, *i.e.*, the poison of rabies, is a more or less complete degeneration of the ganglion cells, an acute parenchymatous degeneration. This exudative inflammation follows the same laws as exudative inflammations in other parts of the body, modified only by the character of the tissues involved.

III. Acute Productive Inflammation.—In the case of rabies already referred to, there may be, besides the accumulation of leucocytes in the tissues, and especially in the walls of the blood-vessels and in the lymph spaces surrounding them, some new connective-tissue cells present in the vessel walls, resulting from the proliferation of the connective-tissue cells normally

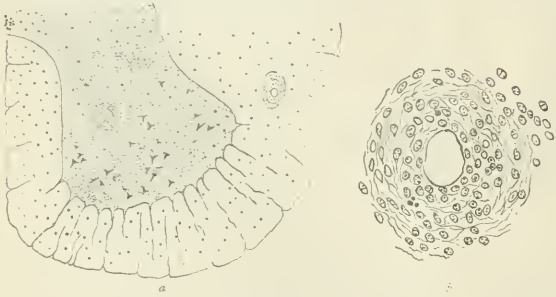

Fig. 11.—(*a*), General view; (*b*), blood-vessel enlarged.

found there. This lesion is, however, usually not well marked.

Fig. 11 represents a transverse section of the spinal cord in a case of Landry's paralysis. Only the anterior horn is drawn. In this case, besides the degeneration of the ganglion cells and the presence of some leucocytes in the vessel walls, there is a considerable production of new connective-tissue elements, this part of the lesion sufficiently predominating to warrant giving the picture the name of acute productive inflammation. Depending upon the stage of progress of the disease at the particular point from which the section is taken at the time of death, the associated exudative features may be more or less prominent, giving to the lesion the character of a simple productive inflammation or of a productive inflammation with exudation.

This lesion, again, differs in no way from the lesion of acute productive inflammation as found in the other tissues and organs of the body.

IV. Chronic Productive Inflammation.—Either following the long continuation of an acute productive inflammation or as a disease *sui generis*, there is found a chronic production of new connective tissue, as a result of proliferation of the connective-tissue elements of the nervous system. This type of inflammation in the nervous system is usually associated with the same general conditions and diseases as are similar lesions in other parts of the body; thus, chronic alcoholism, gout, rheumatism, syphilis, often act as predisposing causes.

Fig. 12 represents a section of the spinal cord in a case of multiple sclerosis. The stain is by the Weigert method, which, it will be remembered, stains only the medullary sheaths of nerve fibres. The areas of new connective tissue are, therefore, seen as light

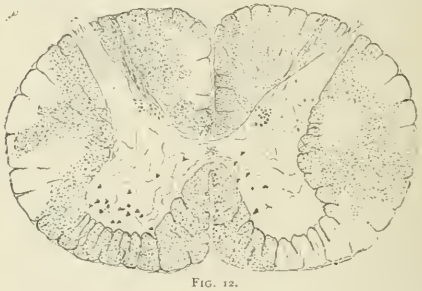

Fig. 12.

spots of about the same color as normal gray matter under the same stain. A point of considerable interest fails to show in this picture, owing to the stain. A specimen from the same case, stained by the picro-acid-fuchsin method of Van Gieson, shows it very distinctly. It is that in this form of inflammation the new tissue consists of not only the connective tissue formed as a result of the proliferation of cells in the walls of the blood-vessels and in the connective-tissue septa sent into the cord from the pia mater, but also of a proliferation of the neuroglia cells and fibres, *i.e.*, the connective tissue peculiar to the nervous system. This makes still more perfect the analogy to the chronic productive inflammations found in the other organs. The two kinds of connective tissue retain their identities, unless the process has gone on to such a stage that nothing but dense scar tissue is demonstrable.

It thus becomes evident that the same nomenclature with which we have been accustomed to describe pathological changes in other organs of the body is equally applicable to the description of lesions of the central nervous system. From the standpoint of the pathologist the exudative inflammations of the nervous system differ in no essential from the exudative inflammations occurring in other organs. The productive inflamma-

tions differ only in so much as they involve the type of connective tissue peculiar to the nervous system. The parenchymatous degenerations, while undoubtedly identical as regards their significance with the parenchymatous degenerations in other organs, are necessarily modified by the peculiar structure of the parenchyma cell itself.

To review, then, the conclusions to which the application of the more recent methods of technique to the nervous system has brought us:

In normal histology—

(1) The method of Golgi has given us a clear and definite conception of the general architecture of the central nervous system, and has demonstrated its analogy to that of the other organs of the body.

(2) The method of Nissl has allowed us to make great progress in our knowledge of the ultimate structure of the nerve cell.

In pathological histology—

(1) The method of Golgi has proved of comparatively little value.

(2) The method of Nissl has aided us in penetrating the mysteries of the pathological cytology of the central nervous system, and, in the light of the already described analogy in structure of the nervous system to that of the other organs, to bring the hitherto isolated pathology of the nervous system into harmony with the pathology of other organs of the human economy.

MONTAUK POINT AND THE GOVERNMENT HOSPITALS.[1]

By WICKES WASHBURN, M.D.,

NEW YORK.

GENTLEMEN: Montauk Point, Long Island, in the summer that is just passed (1898) became the subject of great interest to the general public, because so many of our soldiers were landed there on their return from Cuba and Tampa. Previous to this time Montauk Point had interested very few people besides the geologists. From a geological point of view Montauk Point, and indeed the whole of Long Island, is known to be in the line of a moraine which for many years marked the southern boundary of an immense glacier. This glacial boundary not only traversed the whole of Long Island, but Staten Island and that portion of northern New Jersey in the vicinity of Trenton, as is shown by the present geological formation, which is composed of its terminal moraine.

Now, if you will but remember that at the time these glacial deposits were made this whole portion of the continent was on a much higher level than it is at present, and that it has been submerged to such a degree that the Hudson River Valley has been shortened to the extent of from eighty to one hundred miles—that is, the present site of the city of New York was something more than eighty miles inland—then you will see that the submerging of this portion of the continent left the piled up glacial débris in the line of what is now Long Island unsubmerged, and Long Island Sound was formed by a portion of the lowland which lay back of it being submerged, but to a depth not sufficient to cover the old moraine, which thus became, and still remains, Long Island.

Remembering all these facts, one can easily believe that the water supply of Montauk Point comes across under the Sound (which is about twenty miles wide and one hundred feet deep on an average). Thus we have accounted for the numerous lakes on this narrow strip of land poking out into the ocean, and shown why the water supply should be the best possible. In one instance at least the dividing line between the Sound and the fresh water lake is something like two hundred feet only.

Montauk Point itself is ten miles long, varying from one-half to three miles in width. The soil is in its primeval condition over a very large portion of its extent. The ground is very uneven.

In no direction can one walk for any considerable distance without going up hill or down. Some of these elevations are as much as eighty-five feet in height, while the others are only forty feet. Indeed, the whole surface is very characteristic of glacial deposits and the intermediate kettle holes. After each rain of any amount the water will be found standing in these various kettle holes. A little attention to the condition of the soil will show why the water is so slow in disappearing, and also why it may not reappear for a long distance. The soil for some forty-five feet down is in alternate layers of sand and impervious clay; thus the water in the kettle holes is taken up only as fast as it can be absorbed by a few inches of the top layer of gravel, and cannot disappear below the level of this first layer of impervious clay until by some action of nature or of man an opening has been made through this layer of clay, which will allow water to percolate into the sand below; through this it will reach another layer of clay and may be carried to any distance. These alternate layers are for the most part only three or four inches of clay and from four to ten inches of sand.

It may be as well to recall that Montauk Point is the southerly of the two horns which form the extreme end of Long Island, and that it was reached previous to last spring only after some distance of staging, as the railroad, even with its one leg, didn't get out that far. The surgeon-general having selected this for the reception of returning soldiers, and as a point for their distribution, preparation began in the early part of August for the reception of the soldiers, both sick and well. On this whole territory, from Napeaque Bay to the lighthouse, there was not the semblance of a road, a tree, or a house, with the following exceptions: three old farmhouses that for several years have been known as hotels and designated respectively as "First," "Second," and "Third" house, each being from two and one-half to three miles distant from any other—the first two very near the south or ocean shore of Montauk, the third near the extreme easterly point of this southern horn of Long Island; the two life-saving stations, which are five miles apart and on the southerly or ocean shore. Besides these the Montauk Club on its reservation had built a clubhouse and a few cottages, not available for the general purposes of the army. Soldiers began to arrive by the transports and by train about the 12th of August. I myself arrived on the 16th of August. The depot was located near Fort Pond Bay, at which the troops landed. This depot is a crude affair, and all about was a surging crowd, ankle deep in sand. By great good luck I was able to report for duty at once to General Young, he being there at the station, as I afterward learned for that very purpose, *i.e.*, receiving and assigning new officials. I was given a pass through the lines to the general hospital. (I had learned previous to this time that my bicycle was to be of little use to me; fifty men were put to bed as the result of its use.) I started with it over the hills, passing near what afterward became General Shafter's headquarters, and finally reached the general hospital, the dimensions of which were but faintly outlined, and again was fortunate in finding the medical purveyor, Col. W. H. Forwood; he was not in charge of the general hospital as has been so many times stated, but was simply medical purveyor, as I have designated him, and who went from camp to camp, from hospital to hospital,

[1] Read before the New York County Medical Association, November 21, 1898.

once or oftener each day to see that their needs were supplied. Colonel Forwood's duties did not extend to the management or attention to any of the details regarding what was done at any of the camps or hospitals at Montauk. I dwell upon this because his position has been very much misunderstood and because he has been blamed for those things with which he had absolutely nothing to do. Personally, I believe that both Surgeon-General Sternberg, who selected the site of Montauk Point, and Colonel Forwood, who executed the former's plans, have built for themselves an enduring monument, which shall be an increasing credit to them as time goes on. I wish as much could be said for the general system which, of necessity, worked out those plans and administered the hospitals so excellently located and so admirably planned. The general hospital was located on one of the highest and one of the largest of those elevations which I have described. Each ward was composed of six tents, fourteen by fifteen feet, and two flies stretched over a framework in such a way that a flooring, one hundred and thirteen feet long by fifteen feet in width, was covered, the flies being placed after each second tent, thus securing proper ventilation. These flies were equal in size to the roof of a tent, and made, besides spaces for ventilation, a place for a ward kitchen under one and for a lavatory, arranged, in my wards at least, with commodes and bathtubs, protected by large drygoods boxes and screens. The spaces between the tents which constituted the wards was just a little more than equal to the tents themselves. There were nine of these wards situated on each side of a plank walk, which was fifteen feet wide and covered by the usual flies and separated from the entrance to the ward by about five feet more on each side. Beyond the end of this covered walk in one direction was the kitchen, standing immediately across the line of the walk itself. Extending eastward beyond the covered walk was a street of the same width as the space between the tents, situated on each side of which street were three tents similar to those used for wards: first, the dispensary and storeroom for drugs; second, the surgeon-in-chief's office and bureau of information; third, the storeroom for arms and ammunition and a place for guards. We also ate here from the table which the guards slept upon.

On the opposite side of this street was the surgical ward, over which Professor Senn so ably presided. This was the first tent from the end of the board walk on the north side of the hospital street; the second was a storehouse for government supplies; the third, the Red Cross headquarters, office, and storeroom. This formed the corner building, so to say, of the hospital street, and crossing this street at right angles, running nearly north and south, was what might be called the officers' street, for on it faced the tents of the officers, four rows deep, back of which, and in a direct line eastward from the covered walk on a still higher elevation, stood the tent and office for the surgeon in charge medically of the whole camp, who did not arrive until about September 10th. Very little of this had been arranged when I arrived on August 16th. Only a few of the eighteen wards were covered with canvas; still fewer were supplied with beds and bedding. The detention hospital was perhaps a little farther advanced as to construction at that particular time. Its location near the wharf at which the transports landed is only another evidence of the proper disposition of camps and hospitals by the medical purveyor. A few camps were situated here and there. The picture presented to the eye was indeed beautiful. A more salubrious climate could not be imagined. Gradually the general hospital grew, and all about us the white tents of the camps increased, until we had a city of twenty-five thousand people where only a short time before had been absolute desert waste. My first work after being assigned to the general hospital by Colonel Forwood was to get acquainted with the doctors, of whom there were only three, besides the surgeon in charge. I noted at once what it seemed strange should not have been thought of before: that there seemed to be no order at the hospital or in the camps, and no executive head anywhere. We should not wonder greatly that any set of men brought new to a business should fail in a large percentage of cases to achieve brilliant results, especially if those men have arrived at the age of forty-five or over. Now all of us must know when we come to think of the matter that none of the regular army surgeons could have had any experience in conducting a hospital. The executive work of a hospital is just as much a separate business from prescribing for the sick as is the management of a department store. What wonder, then, that since the ranking officers who, by virtue of their rank, must assume command at any army hospitals, whether they have shown any fitness or not, who certainly have had no experience, should make such dismal failures in the executive work of the hospitals as we read of wherever there have been army hospitals, and as I witnessed at the general hospital at Montauk. The hospital grew in numbers and importance. Surgeons came and went who never knew that there was such a man as surgeon-in-chief of the general hospital. Supplies came more or less intermittently, but certainly with no more delay than seems reasonably excusable, the distribution of these being left absolutely to chance. Many patients suffered for the lack of sheets in their ward, while sheets in plenty were piled away in a near-by ward. Patients were crowded into one ward and sleeping on the floor while there were vacant beds in the next. Physicians were transferred from one ward to another and from one duty to another, with absolute disregard of the idea of experience counting for anything. For a few days after my arrival there were no nurses except the hospital corps men, who in the first place were in large part wholly devoid of experience as nurses, and besides that were totally unfit in other respects to care for the sick. Besides these fatal disqualifications, it was impossible to keep one man in a ward long enough for him to learn the duties of that ward; indeed they were transferred, many of them, from day to day. All this made confusion worse confounded. It was no wonder that typhoid patients beginning to recover should wander about and go to the kitchen, dipping their typhoid hands into the general receptacles for milk. It was small wonder under these conditions that dysentery and diarrhœa patients should break open crates of peaches, tomatoes, and other vegetables, soiling those they did not eat, and eating greatly to their own detriment sometimes of decayed and unripe fruit. There being no provision for the typhoid-soiled sheets, shirts, and blankets, the spaces between the wards became littered with them and piled higher and higher, until a two weeks' accumulation was sufficient to load twenty-five wagons, drawn by four mules each. These loads were piled up like loads of hay. It is small wonder, too, that these hospital corps men, unused to disposing of typhoid dejecta, often, especially at night, threw the contents of the commodes between the tents. There was no possibility of disciplining these men, for generally each day there was a new set of men to perform those very necessary duties. The lavatories were poorly cared for and the odor from them was most offensive. Many of these things were corrected upon the arrival of the trained female nurses and the very efficient superintendent of nurses who came with them. The regular routine—that is, the constant change among the helpers in the ward—went on more or less as long as I remained at the general hospital, and I am informed

continued as long as the general hospital itself remained. I went to the surgeon in charge, as I believed it my duty to do, and reported to him these specific things that I have mentioned, and was assured by him that he would attend to them. Practically nothing, however, was done, and I went to the general in charge and spoke to him of these matters, some of which were afterward corrected. The extent to which this lack of system and lack of administrative experience went in some directions was serious and in other cases laughable. The wards were intended to hold thirty patients each originally, but were afterward crowded to hold fifty, by placing between the beds mattresses upon the floor. One night that I have specially in mind, my two wards, one of them admittedly having the sickest patients in the hospital, contained one hundred and three patients, while the two adjoining wards, I learned the following morning, contained but seventeen each. One of the laughable incidents caused by this lack of management was the placing of a very sick man in the tent and bed of the surgeon in charge, and one of the sad incidents was that of a man who died and whose body remained for several hours within a ward before it was removed. And still another which affected immediately the comfort of the patients was the allowing of two men to remain on the board walk for several hours, without any attention. More than once it happened that a physician was transferred from his ward and no one assigned to his place for several hours; patients admitted meanwhile to that ward received no medical attention; and this, too, when there was plenty of physicians assigned to the hospital. There was no system for leave of absence and substitution during such absence of one physician for another. The reader of this paper, however, always arranged for a substitute during his short absences, which were to go occasionally to the hotel for meals, and obtained permission from his immediately superior officer.

As the supply of the trained female nurses increased, things took on a more cheerful and better form. The physician or a substitute was hunted, as need required. About this time an addition to the general hospital, known as the annex, was constructed. The dimensions and general plans of the latter were not unlike those of the main hospital itself. In the one the trained female nurses heretofore referred to did their very efficient work, while in the annext he sisters of charity, many of them excellent trained nurses and all of them admirable women, also did good and faithful work; but for these women and their tireless energy, with long hours and laborious duties, the general hospital at Camp Wikoff would have been in a sad condition indeed. Few can realize the desperate condition of the men as they were received from the transports, and the arduous duties that devolved upon physicans and nurses in the early days of the hospital.

I recall one incident, which I believe occurred on the 18th or 20th of August, when only a few of the nurses had arrived and our staff of doctors was very small, probably not more than five or six. In the afternoon of that day there arrived at the general hospital a group of ambulances containing about seventy-five men, only a few of whom probably had a pulse at the wrist; many were unconscious. They had endured on the transport, for three days without food, to the limit of their physical strength, and with the long hard ride up from the dock, seated facing each other as in a stage, had simply, as they became exhausted one by one, fallen over and were tangled in among each other in a most woeful condition. By great good fortune we were apprised of their approach by an army surgeon, who happened to be coming in that direction and urged the ambulances forward himself, coming on at a gallop to let us know the desperate condition of the men. We abandoned all else, the doctors and nurses administering small doses of whiskey to each man before he was taken out of the ambulance, unloading them as rapidly as possible, and placing them in the shade of the tents upon mattresses on the floor. Before this was quite complete I went to the kitchen and brought ten or twelve quarts of hot milk, and the nurses under my supervision and that of another doctor fed these men, many of them too weak to raise their heads, a few ounces of milk every fifteen or twenty minutes for two hours or more. I am glad to be able to state that only one of these seventy-five men died.

It is not my intention, within the scope of this paper, to say very much of medical treatment and results; at a later time I may perhaps do so, but this proportion of deaths, small as it was, was quite as large as the general average. Although this was a period of much excitement with the country at large and with all those connected with the hurry and work at Montauk Point, there seems hardly excuse for such extravagant statements as have been published regarding the deaths at the general hospital. I believe, however, by this time the public has come to know that there was only in reality about one per cent. of the sick soldiers who died. My own experience of three weeks at the general hospital, I having had under my charge five hundred and seventy-three patients with only five deaths, if we leave out two that came *in extremis* and died within two hours, seems to have been about the general average. One of the incidents of Secretary Alger's visit will illustrate how differently army officials think of army hospitals and patients therein than is thought of the needs of patients in private practice, for Secretary Alger said to me when in one of my wards: "Now, doctor, what do you need? Everything looks very nice and clean and comfortable." To this I replied, "Why, general, I want many things; but most of all, more nurses." And he replied: "Why you have nurses here." And I said: "Yes, I have two for a ward of fifty patients in the daytime and one for two such wards at night, whereas in private practice I am accustomed to have two for each delirious patient; and here about you see fourteen delirious patients—here, and here, and here." To the credit of the secretary of war be it said that he then and there gave orders for as many nurses as the ward physicians might require, asking at the same time how many I desired; and I told him six for the day and two for the night for each such ward as we were then in. While we never quite reached this figure on the official roll, I did for this ward, through the kindness and liberality of some friends in New York, who became responsible for the pay of a special nurse to be assigned by me to any case that might require constant attention. The first patient to whom this nurse was assigned was the clerk of the regiment of Rough Riders, who elected to pay her themselves for the short time the poor fellow lived. The second was a patient like the seventy-five to which I have referred, who because of his starved condition required feeding every few moments for two days, after which he had sufficiently recovered to be attended by the regular nurses in the ward. The third case was similar to the last mentioned, but these cases were now comparatively rare since the experience of the 20th of August. Agents of the Red Cross and other societies had met the soldiers as they disembarked from the transports and had given them milk and stimulants as each man landed; consequently such cases of collapse had not been duplicated. The third patient who was under the care of this special nurse was, however, a long time in making anything like a complete recovery. There were now plenty of nurses. She accompanied him to his home and there remained for two weeks, his friends paying her the regular salary of a trained

nurse and making her a handsome present besides. I mentioned the incident of this special nurse to show how much good may be done with a little money properly applied, and how appreciative the friends of soldiers were. My sixth nurse in that particular ward was acquired by obtaining permission to have the wife of one of my typhoid patients, whom I had sent for, remain with him and nurse him. This she did faithfully and well, besides helping us with other patients in the ward. Another way in which I helped myself and some of the other ward physicians was through my position as dispensary physician. This work made it necessary for me to be up and at work at six o'clock every morning. From these dispensary patients who came from the regiments I was often able to select men who needed to be in the hospital for the treatment of local troubles that could not be treated in the regiment, but who were not too sick to take the places of helpers in the wards, thus enabling me to have more permanent men for helpers in the wards in place of the worse than useless hospital-corps men. My duties were growing thick and fast. In the third week of my residence at the general hospital, the executive officer having been appointed to look after the general sanitary conditions of Camp Wikoff, he assigned to me the duty of looking after the sanitary conditions of the general hospital. It was just at this time that the twenty-five loads of fæcal-soiled clothing and bedding were removed from between the wards. It fell to me to secure proper receptacles in which to place these articles as they came from the wards thereafter, and I was fortunate enough to be able to obtain with reasonable promptness a sufficient number of large galvanized-iron ash cans; but as these were without covers I secured through a carpenter sufficient board covering for them, and through efficient management of the engineers' corps after a very short time they were removed with reasonable regularity and returned promptly to the ward whose letter they bore. I also provided large drygoods boxes for the laundry linen, and barrels or ash cans for the garbage, where required. Besides all this work, I was from time to time assigned to the duty of receiving the patients for two or three hours a day. This latter duty I was never able to perform to my satisfaction, since the service was not continuous and the much-needed census of the wards was often incomplete, unreliable, or not at hand. I was able to do these outside duties and only because of the very efficient nurses in my wards, because of the system which I was enabled with their assistance there to establish. I had early classified my patients, putting the sickest ones in one ward, and the typhoid-fever patients in one end of that ward, and having one of my wards as a receiving ward and the other as a convalescent ward. Those recommended for furloughs were always instructed to be at one end of the convalescent ward at a given hour, and there the recommendations for furlough and the needed orders for clothing were ready for signature. I cannot pass from this subject without referring more specifically to the faithfulness and untiring energy of the nurses in my wards. I have never seen such devotion to duty and such intelligent interest in the work at hand. The nurses in my sickest ward, although not expected to go on duty until seven in the morning, often went on at six, and, their hours being over at seven, they frequently remained until half past ten. The accommodations for feeding and the food itself for these faithful servants of the government was often very inadequate. For myself, I often went until eight o'clock at night with nothing to eat except a cup of coffee and some boiled milk; for, from what I have said about the vegetables and the typhoid-fever patients going to the milk cans, you can readily guess I did not feel safe to eat from either of those, and as the meat was for a long time brought up loose in ambulances in which the sick patients had ridden, I did not care to eat that; and this brings me to the question of other departments than the medical. It seems to have been true in the quartermaster and commissary departments that men of rank rather than experience were intrusted with the transportation and care of all things needed at the hospitals and camps. Our own hospital quartermaster was a very obliging and energetic man, and I am sure that nothing within the scope of his power and experience was left undone, and it was not his fault that he had not had previous experience. Patients discharged from the hospital in a weak condition, but able to travel under favorable circumstances, were often kept a whole day in the hot sun about the station, waiting for transportation and commutation of rations, whereas it would seem an easy thing to have had the quartermasters' and commissaries' representatives call at the hospital each day and arrange these matters for the furloughed men, so that they could have gone to the depot and taken the train like any other passenger. Here, again, the Red Cross and the National Relief Association came to the aid of the soldiers by supplying them food and shelter near the station until these matters could be arranged, which sometimes took twenty-four hours. I myself through a friend in this city arranged with the Grand Army to have representatives of that body at the Long Island station in Long Island City, to meet the soldiers going on furlough and see such as required their aid aboard the trains, which were to take them in some instances to their far-away homes. Later a hospital car was put upon the Long Island Railroad, in which to care for any sick soldiers who might be aboard the train.

In the early part of September my official duties were performed at another hospital, the cavalry division hospital. At this time the various division hospitals were being established to look after the sick soldiers of those divisions, to relieve the general hospital of its overcrowded condition and as many of the soldiers as possible of the unsanitary condition which then obtained at the general hospital. Of these there were three, and the one to which I was transferred was under the supervision of a regular army surgeon, ranking as major. He was man enough to know that his being in charge of the hospital was because of his rank and not because of his previous experience in managing hospitals; and having been informed that I had had large experience in hospital management, while he could not give the charge to me, he gave me the direction of such matters as he could under army regulations, and advised with me freely about the manner of transacting the business of the hospital. At his request I selected the nurses, who through the kindness of the superintendent of nurses at the general hospital were sent to us. I selected the superintendent of nurses at this hospital from among that number. Regular requisitions were made from the wards through this superintendent of nurses to me at the storeroom, where I was in charge. Nurses were notified that when a given number of sheets were sent to the laundry from a certain ward an equal number of sheets would be returned, and a like custom would obtain with all the articles in use in the wards. There was, therefore, no suffering because of extra articles piled away, as in the general hospital. The lavatories were also under my immediate care. I had obtained through the major a concession from the brigade general to have a suitable detail of permanent men to look after each set of duties assigned to them. Two men were ordered to look after the lavatories, and were instructed to put a given quantity of chloride of calcium and of quicklime into the pits three times a day—at half past eight, half past twelve, and five o'clock. Each time after

these substances had been placed in the pits the entire surface of the pits was covered with two inches of soil, and when a pit was filled to within eighteen inches of the top it was covered over and the building removed to a fresh pit. This same plan was used with the kitchen sinks, into which all vegetable matter and slops were thrown and covered daily, new ones being prepared as required. In this way we avoided all camp odors. Matters went on systematically in these respects. One officer was detailed to receive the patients and to supervise the records of those admitted and discharged, thus avoiding all confusion in that direction. What was done at the cavalry division hospital could as easily have obtained at the general hospital, for the conditions were not materially different, and a part of the time the cavalry hospital was nearly as large in numbers as the general hospital. One of the physicians who had been on duty at both places told me that, with the system that obtained at the cavalry division hospital, a physician could with greater ease and more satisfaction take care of double the number of patients. It is not to be expected that the average man will so freely admit or so readily see that his inexperience needs the aid of another, and, lest I be considered as claiming for myself too much, let me say that I believe there were others besides myself who could have done at the general hospital what I did at the cavalry division hospital. It cannot be expected either that a man in the line of advancement will make requests of his superior officers that may be considered a criticism of what they are doing, and a little incident which took place at the general hospital well illustrates this fact. The road, or what was considered the road, passed to the windward of the general hospital. The road was often from two to four inches deep with dust. Six or eight times each day a group of one thousand horses would pass and repass, covering the unfortunate patients and others at the general hospital with a cloud of dust. None of the regular army officials seemed to notice this fact. Certainly the matter was not corrected till I myself called it to the attention of the general in charge of Camp Wikoff, who immediately had it rectified. While I do not believe he considered it a criticism of what had been done, still the regular army surgeon could not be expected to request him to make that change, thereby giving the patients that much additional comfort. One word more and I shall close. It is this very independence of rank and of favors yet to come that makes the contract surgeon the more likely to be an efficient hospital official. It is the lack of experience and the impossibility of anybody but the ranking official assuming general charge which make it certain that, unless by special act of congress the surgeon-general shall be empowered to employ physicians with experience in managing hospitals, we are sure to have a repetition of all our unsanitary camps and poorly managed hospitals and generally unsatisfactory conditions. I know it will be charged that the contract physicians have done many and various unwise and improper things. My own experience with them has been that they are a faithful set of workers, temperate in their habits, proper in their conduct, and very much more efficient in their work than the average run of men. I did not see any drinking at all among the contract surgeons. I wish I could say the same regarding the regular physicians in the army. One of the agents of the Red Cross said to me: "If these army officials would only do business in a business way, as you and I do, things would go better; but their first impulse seems to be, when anything is not quite understood, to go and take a drink." Had it not been for the patriotic citizens, as represented in the Red Cross, the National Relief Association, and other bodies, matters would have been far worse than they were, and the death rate would have been in all probability not seven to one shot in battle but fifteen, or even twenty to one.

In closing, let me say that I have attempted to deal with this question on general principles and wholly without personalities, save and except so far as was necessary in recounting my own personal experiences to indicate what was and what might have been done. My relations with all the officials were most cordial, and whatever was done was accepted by me as an official act done under the customs and regulations of the army, and if at times duties were unpleasant and results not satisfactory I believed them in the main to be the results of these customs rather than to be due to individuals.

SOME THOUGHTS ON RETARDING THE CHANGES OF OLD AGE.

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In the study of living forms, from the protozoa to the mammals, and from the protophytes to the seed plants, we find certain changes and conditions characteristic of old age. In the human subject the principal changes which we note are atrophic and degenerative in their nature. The muscles and glands are the parts more especially involved in senile atrophy, although other soft parts are affected to some extent. There is a diminution in size of the cellular elements, though without involving any essential change in their structure. The muscular fibres become small and are said to take on more uniformity of size, while the spleen and lymphatic glands undergo a remarkable diminution in weight and size, which increases as age advances. There is also some shrinking in volume of the glandular structures of the digestive tract. Wherever fat has accumulated it gradually wastes away. It is said that atrophy begins to take place before degeneration commences. Pigmentary and fatty infiltrations of the elements are common, as are also calcareous incrustations. As an instance of the location of this fatty degeneration, muscular fibres, both voluntary and involuntary, might be mentioned. It is also found in blood-vessels, especially the terminal arteries of the brain, and to some extent in the nerve cells and in the parenchyma of glandular organs. Pigmentary infiltration, it is claimed, is not so frequently met with as is fatty infiltration. In the pineal gland, in ligaments, cartilages, tendons, and the walls of arteries, calcareous deposits are common. In the brain and spinal cord the neuroglia increases until it frequently predominates over the nervous element, and there is a tendency to the deposition of amylaceous bodies in these parts. The fatty elements of the brain are diminished, while the water and phosphorus are increased in quantity. The height and weight of the body on account of these changes are diminished, the body as a whole being shorter and lighter, while its individual parts are also lessened in size, with the exception of the heart and kidneys. The heart as a rule is hypertrophied, while the kidneys are at least the size they were in middle life. Changes take place in the skin, rendering it dry and wrinkled, the hair becomes thin and white, the teeth drop out, the body bends. These changes induce a general decrease in vigor; the power of the muscles is lessened; the combustion going on in the body is diminished, as is shown by a decrease in the amount of carbonic-acid gas exhaled. The vital capacity of the lungs is decreased, although there is a quickening of the respiratory rhythm. The pulse rate rises, the secretions are diminished, and the quantity of urine is less. Such, briefly stated, are some of the characteristics of old age. This period of life is more

liable to certain diseases, as those due to arterio-sclerosis, to certain forms of rheumatism and gout, and so on.

What produces these changes in the body which drag us down to the grave? Is there no way to retard or prevent them? If we could obviate them even in a measure, how great would be the benefit, and with what rejoicing would the earth's inhabitants hail the discovery, especially those among them who have begun to enter the shadows which gather about life's evening. In the cycle through which a portion of the material world revolves, from the organic to the inorganic, from the living to the dead and back again to the living, it would appear that, as old age approaches, the material of the animal body takes on more and more the nature of the inorganic and becomes more and more akin to the mineral world. When an individual starts in life, he appears to be endowed with a certain power or ability to maintain his status in the highly organized animal world, and to resist largely the tendency of his tissues to become in their chemical nature more nearly akin to the mineral kingdom. What this power consists in I do not know; but it seems to be greatly impaired by age. Now, if by introducing into the body certain agents which might render the excess of accumulating mineral matter more soluble, so that it could be more easily eliminated from the body, we might get rid of one element that contributes largely to the deterioration and degeneration that come with old age. Again, all animal and vegetable tissues when young possess in a large measure this resistance toward the changes that take place in senility. Then, why would it not be a feasible and rational idea for those who are approaching the period of life when senile changes begin to make their appearance to take as nourishment only the tissues of young animals and vegetables, and thereby supplement their waning power of resistance with that of those organisms which contain it in abundance? And, also, as we now have a process of treating certain diseased conditions of different organs of the body with the products of the corresponding organs of animal bodies (and I believe with some success), why could benefit not be derived by administering the quintessence of the organs of young and healthy animals to those whose bodies are beginning to show the effects of age, and in that way furnish them artificially with the power to resist the encroachments of time? Two or three times a year, for instance, we might administer this treatment for a week or two at a time; and who can say that we might not retard in this way the capture of life's citadel by the king of the glass and scythe?

Asthma in Infants.—In an article on "L'Asma Infantile" (*Gazz. Med. di Torino*, No. 23, 1897), Dr. A. Muggia distinguishes what he terms "asthma ganglionare"—which depends upon congestion, inflammation, or tuberculosis of the bronchial glands—from reflex asthma and essential asthma resulting from disease of the bronchial mucous membrane. All three forms are of frequent occurrence in childhood. The first is associated with peculiar pertussis-like attacks of coughing, with laryngeal phenomena, dysphagia, vomiting, and engorged cervical and thoracic veins. The second and third forms always begin, even in the absence of any nasal affection, with pruritus or with a mucous or muco-purulent secretion of the nasal mucous membrane. Typical asthmatic attacks are rare in children; febrile symptoms are common, especially in delicate infants under four years of age, in whom Brissaud has directed especial attention to a so-called torpid form, with mucous nasal catarrh, considerable dyspnœa, infrequent cough, and slight bronchitis.

Progress of Medical Science.

Bile.—One of the most remarkable facts concerning the bile is its apparently small importance in the digestion of food. It is doubtless to a large extent excretory, but it is probable that it may in the future be found that bile is a more valuable digestant than is at present supposed.—Halliburton.

Bile is mainly a digestive fluid; *i.e.*, it is a secretion to be further utilized in the body, not merely an excretion to be forthwith expelled.—Waller.

The bile is to be looked upon as a comparatively insignificant byproduct, resulting from the extremely complex and diverse chemical operations which have their seat in the liver, the largest and perhaps most important of all the glands of the body.—Gamgee.

Bile is almost entirely the residual matter that is passed out of the liver—is really an excretion of the liver.—Lauder Brunton.

Bile will be considered in this article as an excretion, in accordance with the opinions of the majority of surgeons who have paid particular attention to this department of surgery. Physicians as a rule consider it a secretion.—Dr. Murphy in "Twentieth Century Practice."

A New Method of Disinfection of Dwellings.—Before the Berliner medicinische Gesellschaft, meeting of March 9, 1898, Dr. Schlossmann described in detail his method of house disinfection. He uses formaldehyde in his apparatus, formaldehyde being the antiseptic most frequently employed during the last decade in the new experiments on this subject. In the apparatus is placed a mixture of water, glycerin, and formaldehyde, which mixture is then boiled; in this wise not only the vapor of formaldehyde but also water gas are generated in the room, and there is reason to believe that the glycerin enters into chemical combination with the formaldehyde, thus enhancing the effect of the latter. By this method and with this apparatus, it has been possible to sterilize in three hours six or eight layers of gauze thoroughly soaked in pus; similar experiments with other infected material have been made, always with good results. It is not necessary to seal either windows or doors. The atomization causes a heavy, dense smell. Guinea-pigs left in the vapor die of pneumonia; this effect can be prevented by leaving some liquid ammonia in the room.

The Intestinal Bacteria of Nurslings.—As is well known, the intestinal canal of the newborn is free from bacteria. Very soon after birth—generally after ten or twenty hours, the earliest after four hours—Dr. K. Szegö has found bacteria in the meconium (*Archiv für Kinderheilkunde*, xxii., S. 25). The bacillus most frequently found was the bacillus coli, which, because of difference of growth of two forms, the writer designated as bacillus coli A and B. The next most frequent was the streptococcus pyogenes; the next, micrococcus liquefaciens albus. Further, the writer found the intestinal microbes described by Escherich. The source of the bacterium is as yet uncertain. It has been ascribed to the bath of the newborn children; also to the first nourishment received. Against these views are the observations of Szegö, who has several times found bacteria even before the bathing or the giving of nourishment. The first bacterium to make its appearance in the meconium was always the bacillus coli A. Neither the bacterium coli nor the other above-mentioned bacteria, nor their spores, were found in the bath water, milk, dust, or air of the room. Hence the manner of infection is not as yet clear. The normal intestinal bacteria found in

the older nurslings show no noteworthy difference from those found in the meconium; in the dyspeptic conditions of children the result of bacterial investigations is the same.

On Fibro-Myomata of the Uterus. — Dr. Oskar Kattmann has investigated four hundred cases of fibromyomata (*Archiv für Gynäkologie*, Bd. 54, Heft 2), and arrives at the following conclusions: Fibromyomata are most frequent among married women; then in unmarried women and those who have not given birth to children. This is contrary to the old idea that sexual life lessens the predisposition to this disease. Pregnancy and childbirth affect but little the frequency of fibroma uteri; on the other hand, in women who have this tumor, conception is less frequent than in the healthy. The following observations are particularly noteworthy, as contrary to generally accepted ideas. In almost one-fourth of the cases, neither the menopause nor the climacteric had any hindering effect upon the growth of the tumor. At these times the growth was in many cases more rapid, and the symptoms were more pronounced; this rapid growth and the more marked symptoms did not depend upon malignant degeneration of the tumor. Fibromyomatous growth may even begin at the menopause or climacteric.

Lumbar Puncture.—In a paper giving especial attention to the dangers which lumbar puncture may present in organic affections of the nervous centres, Dr. Etienne Martin gives, in the *Lyon Médicale*, October 9th, the following as the conclusions at which he has arrived: (1) Lumbar puncture may be contraindicated as dangerous in organic affections of the spinal marrow and of the brain. (2) It remains none the less demonstrated that in the majority of instances (meningitis, grave chlorosis, etc.) it may be practised without inconvenience as a method of diagnosis. (3) As a therapeutic measure, even if its efficacy is still much contested, it may be said that in permitting subarachnoid injections it opens up to therapeusis a still unexplored territory.

Observations in Diphtheria.—Dr. H. D. Jerowitz (*Journal of the American Medical Association*, October 29th) gives his conclusions resulting from an extensive experience in a town of one hundred and fifty thousand inhabitants, having no children's hospital or any other opportunity for studying these cases, except as they occur in private practice. They are as follows: (1) The majority of cases are mild, and affect only the tonsils and pharynx. (2) The exudation lasts from one to two weeks. There are exceptions to this. (3) Removal of the membrane is useless, as by denudation of the surface septic infection is promoted, and, besides, the membrane soon reappears and remains longer than if it had not been meddled with. (4) The involvement of the larynx is always sudden, and comes as a new attack, and not by extension of the diphtheritic process. (5) The larynx becomes involved in about four per cent. of the cases. (6) Every case complicated with uræmia had post-diphtheritic paralysis. (7) Laryngeal involvement is to be most dreaded between the ages of three and five. (8) Intubation and tracheotomy will become less and less necessary as the value of antitoxin is recognized. As regards treatment he states: "(1) The first thing noticed after using antitoxin is a reaction, an immediate effect, showing that antitoxin is a powerful agent. (2) In every case in which I administered antitoxin in the proper dose, the membrane disappeared inside of three days. Without its use, while I have seen patients get well in the same length of time, yet the majority of cases lasted from ten to fourteen days. (3) In all cases in which I employed antitoxin in the beginning, the larynx did not become involved and uræmia did not occur, while in cases treated without antitoxin the larynx became involved frequently and uræmia also followed. (4) In cases in which the membrane involved the larynx, trachea, and even the bronchial tubes, recovery followed when treated with antitoxin, while the same class of cases before the use of antitoxin always resulted fatally. (5) Neglected cases, complicated with septicæmia and laryngeal involvement, do not recover with any treatment. (6) In severe cases of dyspnœa, with occasional cyanosis, the use of antitoxin and emetics has obviated the necessity for tracheotomy. (7) Measles as a complication is no bar to the use of antitoxin. (8) In laryngeal cases complicated with uræmia or nephritis, antitoxin was followed by favorable results, thus proving that uræmia and nephritis are not necessarily contraindications to the use of antitoxin. (9) As paralysis was seen to follow only the cases of long duration, those in which antitoxin was administered early were not followed by paralysis. Of those in which it was given on the second or third day, it occurred in about eight per cent. From this it follows that antitoxin does not prevent paralysis, except indirectly by cutting short the disease. (10) Place of injection, behind the scapula. No abscess or other bad result followed."

Schenck's Theory: The Determination of Sex.— First of all, some would say that in certain regions and among certain peoples, where meat forms the principal diet, only male or principally male offspring would be anticipated. The nutrition of the mother certainly plays a very important part in the condition of the ovum within her body. The different experiments which breeders have made, and the observations which have repeatedly shown in the case of the invertebrata (V. Berlepsch, "Die Biene und ihre Zucht," second edition; Landois, "Physiologie") a connection between food and the development of sex, leave no doubt that, in the case of the human subject also, a certain diet of the mother would not be without influence on the ovum developing within her. Here, however, in the case of the ripening of the ovum, according to my opinion, the result does not depend on the diet alone, but rather on the process of metabolism in the mother. How the physiological combustion goes on in the organism, and what changes take place in it in consequence of the altered diet until the sugar entirely disappears, is, in the case of human beings, of the highest importance and furnishes an index of the consequences. In individual cases the diet is directed in accordance with the results that show how the food has been assimilated, and does not depend upon these alone. In other words, whether the mother eats much meat is a secondary consideration. Whether, and how, the food taken is completely made use of in the process of combustion, that is a matter of importance for the purpose we have in view. Any one, who keeps before him the fundamental principles of this theory, will see plainly that it is possible under certain circumstances to procure male progeny by means of the influence we have indicated. The wish to have female progeny is a desire for the gratification of which it is not at present possible to give any directions.—Dr. Leopold Schenck, "The Determination of Sex," page 16.

Another Theory of Sex Control.—Dr. S. R. Shepherd (*The Medical Brief*, page 881) writes: "My theory is based upon the postulates in general, that the universe is composed of electricity and matter; that life is electricity, or the product of the organic union of electricity with matter (it being a law of science and logic to attribute effects to the nearest adequate familiar force or cause, rather than to something remote and hypothetical); that each individual beginning is

a tiny spark emitted and separated from the infinite life-generating fountain of potential energy, static or etheric electricity. That electricity is male and female; that the male animal, being positive, is necessarily the sex to throw off or generate the spark of life; that everything in the universe, from atom to planet, obeys the law of electro-magnetism; that every motion, effect, or phenomenon in the universe is the result of electric causation; that sex is essentially electrical —life polarized; that there is no life without sex. That male and female germs are of opposite polarity; that the male germ, being positive and more energetic and hardy, is most likely (at least) to evolve out of negative conditions and to persist, develop, and attain vigor in those conditions—such conditions to be superinduced by subsistance for a time, possibly a month, more or less, upon a light, low, non-heat-producing, unstimulating diet, with habits tending to deplete. The struggle for existence begins the instant of the inception of a germ, and environment is everything. With medium conditions the sexes have equal chances. Let germs in large and equal numbers as to sex be deposited at one time in cold, negative, sterile, maternal soil, made so by this régime; the male germs will develop and persist, while the female germs will chill, droop, and perish in a few hours. Reverse the régime and produce vital repletion, *i.e.*, extreme warmth, high tone, luxuriant, tropical, positive conditions, for which the female germs, with opposite polarity, have an affinity, and they respond quickly, develop rapidly, get the start of, and crowd out the male germs (the conditions not calling out their latent forces), which perish, leaving the female germs to struggle among themselves, the fittest surviving."

A Case of Leukæmia following Trauma.—In the spring of 1896 the patient happened to be at a very large gathering, where he was severely crushed; the left side of the abdomen and chest walls were especially subjected to a great amount of pressure. The leukæmia dates back to this accident. As the patient, through the exertion of great strength, wrenched himself from this human vice and reached a free space, he sank senseless to the ground and remained in this condition for several hours. When he reached home he was obliged to go to bed, as he suffered from severe pain in the sides and chest. He had to remain in bed fourteen days, during which time the cervical glands became very much enlarged. The patient, now feeling fairly well, returned to work. The glands still increased in size, but without causing any discomfort. In May, 1897, the patient, whose former strength had not yet returned, began to suffer from asthma, palpitation, and pain in the left hypochondrium. For a short time he was able to do light work, but soon found himself unable to do any work at all, and was again confined to bed. Present condition: The pale, emaciated patient complains of debility and pain in the splenic and sigmoid regions; insufficient chest movement, since every deep inspiration causes pain in the left hypochondrium; dyspnœa on the slightest exertion. Cardiac dulness extends about one centimetre to the left of the mammillary line. Auscultation reveals a dull note all over. The apex beat is diffuse. Palpitation on even slight exertion. All palpable lymph glands are markedly enlarged, although painless. The blood examination reveals hæmoglobin, 45 per cent.; red cells, 1,800,000; white cells, 600,000; specific gravity, 1.040. Abdomen slightly distended, no ascites. The lower border of the liver extends slightly beyond the free border of the thorax. The spleen is markedly enlarged; its upper border reaches the seventh rib, the lower extends down to the level of the umbilicus. The upper surface of the spleen is smooth and very painful. Treatment consisted in the internal administration of Blaud's pills and the subcutaneous injection of arseniate of sodium. The patient remained in the hospital for forty days, and then left, much improved in the subjective symptoms. The objective symptoms, however, *i.e.*, the lymph glands, spleen, liver, and blood, remained unchanged.—Dr. Koschin, *Meditsinskoye Obosrenye*, Bd. 50, H. 3.

On the Complications of Pregnancy, Parturition, and the Puerperium in Chronic Heart Disease.—Most of the cases of chronic heart disease in which compensation is complete pass through the periods of gestation, labor, and puerperium without any manifest untoward symptoms, or with only slight symptoms, unless some complication, such as nephritis, bronchitis, or recent endocarditis, develops. On the other hand, in non-compensated heart lesions, the chances of passing through these three stages without incident are slight. The character of the lesion plays an important rôle, and, according to Dr. O. Feis (Volkmann's "Klinische Vorträge," 213), mitral stenosis is the most fatal. The frequent abortions and miscarriages in cases of heart disease should be looked upon as fortunate terminations. The greatest danger threatens during the period of labor, in consequence of the marked fluctuation in blood pressure, the psychical excitement, etc. The rupture of the membranes with escape of the water may be sufficient to call forth fatal collapse. Many of the deaths occur during the puerperium, and are usually the result of pulmonary emboli. As regards treatment, urgent symptoms are to be treated upon general principles; upon the appearance of threatening manifestations, abortion is indicated; it is not safe to postpone interference until the time of viability, since artificial miscarriage is attended with much greater danger than is abortion in these cases. Delivery should be performed as rapidly and carefully as possible (dilatation of the os uteri by colpeurysis). Chloroform may be cautiously administered. The mother is to be carefully watched after the birth of the child, for collapse frequently occurs just at this time. In beginning œdema of the lungs venesection is indicated. Milk diet and small doses of strophanthus may be given in the after-treament, the patient to be kept in bed three or four weeks.

The Menopause and the Kidney.—Dr. Le Gendre (*Gazette des Hôpitaux*, No. 146, 1897), as a result of many observations, concludes that the kidney is often affected by the menopause. In some women the menopause, or the diminution or retardation of the menstrual flow, is capable of producing a renal congestion of varying intensity, which manifests itself in different ways—sometimes by a diminished secretion of urine; at other times by slight albuminuria, or hæmaturia, lumbar pain, nausea, vomiting, and severe headache. Such symptoms can be relieved by diuretic treatment. If a chronic nephritis pre-exists, the menopause may cause the appearance of severe symptoms.

Uterine Hemorrhages as Affected by the Climate of Altitudes.—Dr. Septimus Sunderland (*Lancet*, October 15th) draws the following conclusions: (1) That a high, dry climate is beneficial in certain cases of chronic uterine hemorrhage that do not respond to ordinary treatment. If practicable, a residence at a high altitude should be tried for as long a period as possible in cases in which operation is not absolutely necessary, or is inadvisable from various reasons, or would prove unusually dangerous. (2) That a high altitude will probably be found useful in certain hemorrhages and congestions other than pulmonary or uterine. (3) That, in addition to other causes that diminish uterine bleeding at a high altitude, the lessened air pressure is an important aid.

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THE WORK OF THE MEDICAL DEPARTMENT DURING THE SPANISH WAR.

THE report of the surgeon-general of the United States army to the secretary of war is published quite opportunely, while the war-investigation committee is in the midst of its labors and when much public interest is being directed toward alleged matters of neglect in the care of the sick and wounded soldiers, in which his department is most intimately and painfully concerned. In view of the facts stated in this document, much light is thrown in an explanatory way upon many points of responsibility for wrongdoing, which heretofore have not been very clearly presented—or at least have not been so directly admitted.

While the shortcomings charged against the medical department of the army are still fresh in the minds of the nation, it is becoming and proper to view the statements set forth in that spirit of justice and impartiality which seeks only the truth and the lessons which it may be capable of teaching. Although the general impression created by the calm analysis of the situation is one scarcely favorable to the present organization of the medical corps as to its capacity or resources, there is a general conviction that the best was done for the sick and wounded that was possible under the circumstances of conflicting authority, inadequate preparation, and the culpable want of forethought of the line officers.

The report opens with the significant statement that the number of medical officers allowed the army (one hundred and ninety-two) is inadequate even in times of peace, and in consequence of this it was necessary during the last war to employ a staff of six hundred and fifty contract surgeons, mostly, as it is implied, by the forced selection of a hurried call for their services. These were raw medical recruits, who were assigned to responsible positions and were afterward charged with incapacity. This may have been inevitable in the fate of sequences, but was none the less deplorable that it should be so.

The question of competent male nurses was also a very difficult one to settle, as not only the demand far exceeded the supply from the trained hospital-corps men, but it was almost impossible to get suitable assignments from regiments or obtain properly trained assistants from outside sources.

It would appear by the facts presented that there was an abundance of medical supplies for the field and home camps, but it was often impossible to obtain adequate or timely transportation. It is directly and explicitly charged that the lack of sufficient medical supplies at San Juan and El Caney was due to the fact that when the command embarked, the ambulance trains of all the divisions, with a large part of the outfit of each, was left behind. Of the property and supplies carried to Cuba, a portion was not available for service when most needed, as no opportunity was afforded for landing them. This certainly shifts the responsibility of results from the medical department to that of some other authority, presumably the commanding general; but further than this army etiquette, in official documents, saith not.

The prevalence of so much sickness in the various camps is frankly charged to imperfect sanitation and want of experience of medical officers in charge, rather than to badly chosen sites. It is certainly a shameful condition of affairs when, as claimed by the surgeon-general, its prevention was, by him at least, an impossibility. It is quite humiliating also to be compelled to state that the majority of the officers one is forced to assign to duty are incapable of intelligent service.

Another point in this connection which was a leading factor of diseased conditions was the reduction of the age limit from twenty-one to eighteen years. The penalty for such misjudgment of the actual physical strength of the would-be soldier was the inevitable breakdown from ordinary fatigue and that consequent lowering of vital resistance, which in their turn were ready invitations to general diseased conditions. Then, again, the bad policy of establishing camps in proximity to large cities was manifested in the prevalence of drunkenness and other forms of dissipation, from the influences of which we would fain believe some of the medical officers themselves were becomingly exempt.

It seems somewhat strange, when the deplorable conditions should have been known, even if not reasonably anticipated, that no determined effort to right matters on the part of the medical department was made, until typhoid fever became so rife in all the camps that it was only then necessary to have formal inspections of the sites with the view of applying the requisite but too long delayed remedy. Every true citizen must regret the necessity of such measures, and must blush for any army organization that makes such a course possible.

Our experience in the late war, dearly bought as it has been in much preventable sickness, suffering, and death, has offered us many striking object lessons in army organization which will doubtless be of great service to us in the future. There has been demonstrated a pressing need of centralized power in the consistent distribution of those responsibilities which may make the army and all its different departments a grand and perfect machine. In every branch of the service there are too much antagonism of interest and too much shifting of blame from one to the other to make any break or starting-point in the convenient and bewildering

round-robin system of common protection. So long as the present plan exists, no change for the better need be expected. In regard to the transportation of food and medical supplies, the quartermaster's department, in its supreme and wide-reaching executive capacity, decides absolutely all questions of emergency as to precedence and detail. Unfortunately the medical department is generally least of all considered, and is made to wait its turn at the foot of the list. Ancient experiences in this line repeated themselves in the war with Spain with such disastrous results that an official investigation was made imperative. What the real outcome of the inquiry may be cannot be conjectured, but it is hoped that the great mass of testimony taken may ultimately eventuate in some formal recommendation for the reorganization of our army supply system, whereby the dreadful mistakes so familiar to all may be effectually prevented in the future.

ASPHYXIA NEONATORUM.

New methods of sustaining life in those about to perish have always appealed strongly to medical men, and the more youthful the subject and the greater his life expectancy, the more gratifying oftentimes appear the results, to say nothing of the reproach cast upon the officiating obstetrician when the expected heir will not inspire. It is therefore with hopeful anticipation that one turns to an article by Dr. Stringer, in a recent issue of the *Virginia Medical Semi-Monthly*, "A Rational Method of Relieving Asphyxia in the Newly Born Infant." We can do full justice to the writer and his method in no better way than to quote his own words.

"A few years ago I was called to a multipara in labor, and was told she was only in her fourth or fifth month of pregnancy. In a few hours she was delivered of a fœtus, which I took to be about the age indicated. The fœtus, membranes, and placenta were all delivered by the same effort. Nothing unusual having occurred, the fœtus and envelopes were laid aside until my departure, when I had it placed in some cloths and rolled up to carry with me for the purpose of saving it as a specimen; but, it being late in the night, I deposited it until morning, when I proceeded to examine it, and, to my astonishment, found the fœtal circulation still going on, with the pulse at the wrist very perceptible. This was several hours after birth. Here was a case of fœtal circulation, to my mind, carried on by the aeration of the blood through the medium of the placenta exposed to the atmospheric air."

Fortunately an opportunity soon presented itself for a practical application of the discovery, and here again the writer speaks for himself:

"The child could not be induced, by the usual method of cold application and rolling, to make any effort at respiration. The circulation was still going on in the funis with some vigor, but the deepening of the dark hue of the surface plainly indicated that, unless oxygenation of the blood could take place, death would soon follow. Already the pulsation in the cord had become feeble, and was becoming more so rapidly, when I delivered the placenta, rapidly cleansed it of clots, and exposed the maternal surface to the atmospheric air. In a very short time the pulsation was perceptibly increasing in force; the livid and death-like hue was being displaced by one of life and health, and it required but a few moments for the restoration of sensibility, when the process of respiration commenced."

The above and several subsequent cases lead the originator of the method to look upon it as the only simple and rational one available. Unfortunately, however, it not infrequently happens, when the placenta is expelled with or shortly after the child in premature birth or precipitate labor, that death of the newborn ensues as a direct result of hemorrhage from the placenta. We are not prepared, therefore, to give that hearty indorsement to the plan of procedure which we otherwise might, and the query arises whether cutting the cord and thus insuring a slight amount of direct hemorrhage would not answer every purpose. Though having no direct bearing upon the efficacy of the treatment advanced, the unique feature of "perceptible pulse at the wrist" in a five-months' fœtus several hours after delivery is sufficiently interesting to excite comment.

HAWKING PHYSICIANS.

There may have been a time when the physician to some royal court found time and was permitted to engage in the sport of hunting with a hawk upon the wrist. Our present remarks do not apply to this kind of gaming, but to a less ennobling pursuit of crying one's wares upon the street or peddling them out for the highest price obtainable. Several of our contemporaries have had much to say of late upon the subject of commissions paid by specialists to general practitioners for cases referred to them. That there exists any very considerable amount of such reprehensible practice we are not inclined to believe, but that reference cases are at times paid for on the one side and the dividend freely accepted on the other is undoubtedly true. More's the pity.

What has been called "bargain-counter" surgery, especially in the realms of abdominal and pelvic pathology, must have some existence in fact, or one would not hear of it from so many different sources. The blame has been placed almost exclusively at the door of the specialist, but one correspondent touches the keynote, it would seem, when he says that "country doctors frequently go about from surgeon to surgeon, seeking the highest bidder." It would not be surprising if equal blame were to be attached to him who has the case to sell and to the one who is willing to buy. It was some years ago that many reputable surgeons in this city were shocked in their finer susceptibilities by a down East doctor who landed in town with six laparotomy cases, which he proceeded to farm out on terms most advantageous to himself. Many of the surgeons approached had not before heard of such shrewd businesslike methods being applied

to human existence, and very properly showed the visitor the door. Undoubtedly these surgeons would pursue the same course to-day. It is at least to be hoped they would. Whether or not this hawkster succeeded in finding an operator sufficiently devoid of ethical honesty to offer the proper "divy" is not divulged. He may have taken the subjects to one of our neighboring cities, where so great a cry has gone up against the giving and accepting of commissions as to lead one to infer that the practice is much more prevalent than with us. Or he may have gone with his half-dozen protruding females back to his quiet New England village, and by operating upon them himself secured the whole of a smaller fee. Whatever may have been the outcome of the pilgrimage, the lesson must have been learned that because one man "sells" another does not always feel inclined to "be sold."

Among the worst medical sins are to be reckoned those of commission. Physicians who indulge in such practices must sooner or later come to grief, and it would be better that both sides take warning before the patients discover for themselves that their welfare is being bartered and that they are likely to fall into the hands of incompetents willing to overcharge in order to pay exorbitant dividends.

News of the Week.

Professor Nothnagel, of Vienna, was recently reported to be dead, and several French and Portuguese journals have treated their readers to full and eulogistic obituary notices of the celebrated clinician.

A Pathological Diagnosis Society.—An association with this title was founded a few years ago in Liverpool under the auspices of University College in that city. The object of the society is to examine morbid specimens and report upon their nature. After the examination has been made a report of the findings is furnished to the physician or surgeon sending the specimen. A special room in the new Thompson-Yates laboratory building has been set aside for the sole use of the society.

Medical Temperance Work among Students.—A few weeks ago a meeting of the British Medical Temperance Association for the benefit of students was held in London. About seventy medical students from the various hospitals were present. Dr. Sims Woodhead, the president of the association, delivered an address in which he spoke of the important influence his hearers would be able to exert in their future practice if they were total abstainers. Many years ago it was the fashion to bleed and salivate, and when this was found to be injurious some of the older men said it was due to a change in the type of disease. He had no doubt that hereafter the same excuse would be made to account for the disuse of alcohol.

Dr. Theodor Gsell-Fels, of Munich, who died recently at the age of eighty, was a doctor in three faculties—medicine, philosophy, and theology. He was the author of numerous works on climatology and health resorts, including those of Switzerland, the Riviera, the South of France, Corsica, Algiers, and Tunis.

Filthy Streets.—The recent snowstorm has served to open the eyes of the people of New York to the fact, patent long ago to bicyclers and others who have occasion to note the conditions of the thoroughfares, that the brief era of real street-cleaning, inaugurated by the late Colonel Waring, is of the past. Anything more dirty than the present state of the New York city streets is difficult to imagine.

A Medical Legislator.—Dr. Nelson J. Henry, of this city, has been elected an assemblyman in the next State legislature.

A Journal Consolidation.—The *Canadian Medical Review* and the *Canadian Practitioner* have been consolidated, the resultant periodical retaining both names and calling itself the *Canadian Practitioner and Medical Review.*

The Spitting Nuisance in a Medical College.—A rule has been made that there shall be no smoking by the students of the College of Physicians and Surgeons within the college building, and spitting in the corridors or classrooms is also forbidden.

To Report on Antistreptococcus Serum.—At the last meeting of the American Gynecological Society a committee, composed of Drs. Williams, Baltimore; Norris, Philadelphia; Fry, Washington; Reynolds, Boston; and Pryor, New York, was appointed to report next May upon antistreptococcus serum. The use of the serum prepared by the New York Board of Health is recommended. Sterile culture tubes can be secured from Dr. Torrens, 435 Pleasant Avenue, and from Dr. Jeffries, 212 East Thirty-fourth Street. Samples of discharges should be sent to Dr. Jeffries, who will at the earliest moment notify by telephone or telegram the physician attending the case under observation, whether or not streptococci are found. In return for this physicians are requested to furnish notes of their cases showing when and in what amounts the serum was used, what general treatment was employed, what local treatment was applied, and the results. It is desired by the commission to make the report as exhaustive and thorough as possible, and to accomplish the object sought the co-operation of the profession of the city is necessary. Notes of cases in which the serum has not been used are also desired. While it is manifestly desirable that one kind of serum be employed in all cases, the committee will be gratified to receive the results obtained with any which may please the fancy of any particular observer.

Experiments with Sanarelli's Yellow-Fever Serum.—In the current number of the "Public Health Reports," issued by the Marine Hospital service, is a report by Dr. Wasdin upon the employment of Sanarelli's antiamaryllic serum in New Orleans during the past summer. Opportunity to use the serum presented itself in but three cases, two mild ones and a third in which the patient was apparently moribund when brought under observation. This patient died twelve

hours after the serum was injected without having shown any favorable symptoms. In the other two cases there was a marked reaction—fever and great vasomotor disturbance; but Dr. Wasdin says that the patients would have done just as well without the serum, and indeed its only effect, to judge from the report, was to increase the sufferers' distress. In the same number, Dr. Havelburg, inspector of the Marine Hospital service at Rio de Janeiro, reports a number of experiments made with the same serum, in which the results were far from satisfactory, and indeed would indicate that the serum is worthless. They also throw suspicion on the bacillus itself, and it would appear doubtful whether the micro-organism discovered by Sanarelli has any pathogenic relation to yellow fever. Dr. Havelburg also speaks in far from uncertain tones of the unscientific and unsatisfactory evidence offered in favor of Freire's bacillus xanthogenicus and his prophylactic serum.

The Guild of St. Luke.—Dr. Angus Campbell writes to *The Lancet* in protest against the state service annually organized by the Guild of St. Luke in St. Paul's Cathedral, London. He says that this service possesses many highly objectionable features and tends decidedly to lower the profession in the eyes of the intelligent. "To prove this latter contention the general tone of the notices of the function in the lay journals is sufficient, and if the members of the guild were not so very thick-skinned these notices would themselves be sufficient to deter them from repeating their annual display. Unlike some other professions," he continues, "that of medicine has never been given to show. A public muster of members in gorgeous attire is in itself an innovation requiring some justification, but the matter becomes much more serious when we remember that this display is preceded by preliminary puffs in nearly all the lay papers, evidently inspired, wherein certain names are given, and that notices of the function are inserted in most lay and religious papers, names being again introduced. What is this but advertisement? Yes—advertisement of a most insidious and reprehensible character, for not only do those whose names appear advertise their persons and occupations, but they also contrive to establish in the minds of the weaker sort a reputation for piety."

The Etiology of Malaria.—The Rome correspondent of *The Lancet* writes that the Italians have long been working steadily and silently on the subject of the etiology of malaria and have obtained results only now becoming known. Profiting by the experience of Laveran, if not by that of Manson and Ross, Dr. Amico Bignami, *privat-docent* in pathological anatomy at the university, had in 1896 by observation and experiment convinced himself that malaria was a "disease of inoculation." The same year, working in concert with Dr. Dionisi, also of the Roman school, he experimented on the possibility of engendering malarial fever by means of the punctures of mosquitoes. Their experiments yielded no positive result, but were repeated in August and the first half of September (still in 1896), once more with a negative response. Dr. Bignami and Dr. Dionisi had failed to satisfy themselves, among the numerous tribes of mosquitoes, as to that one which had relations, mediate or immediate, with malaria. However, Dr. G. B. Grassi succeeded last summer in completing a series of observations by which he ascertained and determined the mosquito tribes which had power to convey the disease. Italian medicine, already distinguished in the malarial field by the studies of Tommasi-Crudeli, Baccelli, Golgi, Celli, Marchiafava, and others, chiefly of the Roman school, expects to establish a claim to having made out the special tribes of malaria-conducting mosquitoes—tribes three in number and found exclusively in the fever-infected localities. Dr. Dionisi has discovered in bats a malaria-infection due to parasites closely resembling those found in the blood of malarious man.

A Dublin Disinfecting-House.—A mortuary for the bodies of persons dead of infectious diseases has been built in Dublin in connection with a disinfecting-house. If for any reason the body of one dead of an infectious disease cannot be buried immediately, permission will be given to keep it in this mortuary for a period not to exceed twenty-four hours.

The Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about $180, will be made on July 14, 1899, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the secretary of the college on or before May 1, 1899. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award. The prize for 1898 has been awarded to Dr. S. A. Knopf, of New York City, for his essay entitled: "Modern Prophylaxis of Pulmonary Tuberculosis and its Treatment in Special Institutions and at Home."

A Long Wait.—They tell of a Chicago physician who, opening the door of his consultation room, asked: "Who has been waiting the longest?" A tailor who had called to present his bill rose and said: "I have, doctor; I delivered your clothes to you three years ago."—*Chicago Clinic.*

Sir William MacCormac on the Prince of Wales' Injury.—Sir W. MacCormac, speaking a short time ago at Swansea and referring to the progress of surgery, said he remembered the time when operations were looked upon as very different matters from what they are now—when they were thought to some extent rightly a confession of failure on the surgeon's part.

Surgeons then did not receive the consideration they now received at the hands of all, and he believed the reason for thinking their operations the unmitigated evils they used to be thought was because their means of dealing with wounds were not what they were now. Through the advance which surgery had made, operations were now practised which formerly were not thought possible or justifiable. The progress of surgery, indeed, had been so remarkable and had obtained such a hold on the public mind that the surgeons of the country were considered a sort of high-priest to whom nothing was impossible. As an instance, he mentioned the case of a very exalted personage who not long ago received a serious injury. This exalted personage was the subject of advice not only from his own country men and women, but from people in all parts of the world. But one thing that particularly impressed itself upon him was a suggestion made publicly that at all events his broken kneecap could be sutured. In such an operation, as some said, there were no difficulty and absolutely no risks; but though he did not go so far as that, nevertheless he was happy to be able to say that, in spite of what some of their foreign critics had been pleased to say in regard to the treatment, the recovery of that exalted personage had been everything his best friends desired.—*London Times.*

The New Vaccination Law in England.—It becomes increasingly clear that the vaccination act was devised by some ironic imp, whose joy is to make dignitaries ridiculous. Having achieved instant success in the house of commons with Mr. Chaplin and Mr. Balfour, it has now passed to the magistrates' bench, where it gives promise of having a long and delightful run. In London, so far, Mr. Curtis Bennett, Mr. Mead, and Mr. Plowden have been the chief exponents of its mirth, in a rôle which combines omniscience with extensive lecturing. They have not yet, it is true, devised a sure method of dividing the sheep from the goats—the mere objector from the conscientious objector; but that is simply because they have not applied the Roentgen rays with sufficient persistency and discretion. Meanwhile, the public is anxious to know when, where, and how Mr. Curtis Bennett was vaccinated four times, and also if he is prepared publicly to bare his arms to the shoulder, like De Rougemont. If he will undertake this latter test, we promise him a large and amused audience any morning at Marylebone. Further, if it is shown that he has had the courage to be vaccinated four times, we can assure Mr. Bennett that he will have scored the highest honors in this farcical comedy.—*Saturday Review.*

London School of Medicine for Women.—This school has received a grant of 100 guineas (about $500) from the Skinners' Company, and 50 guineas (about $250) from the Mercers' Company toward the building-fund.

Vaccination.—The New York City board of health has issued the following circular in reference to vaccine and the method of vaccination: "The part of the body to be preferred for the vaccination is at the insertion of the deltoid of either arm. When the leg is vaccinated (possibly on account of the greater difficulty of keeping it quiet and clean), inflammatory complications are more frequently present and are apt to be more severe. The skin at the place chosen should be made clean. It is doubtful if attempts at more than simple cleanliness are of value; reports of series of cases in which one arm has been vaccinated with only ordinary attention to cleanliness and the other arm vaccinated after most rigid antiseptic measures had been carried out, indicate that no greater freedom from inflammatory complications resulted in the antiseptic arm than in the other. The scarification should be made with a sterile instrument. The department of health recommends the use of an ordinary cambric needle, because a new one may be used for each case and there is thus no possibility of the transference of an infection from one person to another. When, however, the necessary precautions can be taken to render the instrument aseptic, any other sharp instrument serves as well. It is of great importance that the scarified area should be not more than one-eighth of an inch square, because the larger the area the greater the tendency to subsequent infection and to inflammatory complications. Moreover, with the more concentrated virus at present issued by the department of health, a small scarification is ample for invariable success. It should be noted that a vaccine vesicle enlarges peripherally, and the resulting crust always covers a considerably greater area than that originally scarified. The virus should be rubbed in thoroughly and allowed to dry for at least ten minutes. It is a convenience to blow the virus from the capillary tube in which it is contained on to the accompanying piece of wood and then rub the wood on the scarified area, instead of blowing the virus directly upon that area."

Restricting the Doctors.—An English journal says: "The British Medical Association and the General Medical Council are preparing still further to tie the hands of medical men. A few months ago the unqualified assistant was tabooed. Now medical men who cover unregistered dentists are to be punished wherever possible. The dental acts forbid unqualified and unregistered dentists to administer anæsthetics, but the acts have been evaded by procuring a qualified doctor to undertake this forbidden work, while the so-called dentists perform the rest of the work. Medical men are now to be prohibited from assisting this device, and those who disobey will be liable to be relieved themselves of the right to practise."

Effects of the Lee-Metford Rifle.—"A recent number of the *African Review* contains," says the *British Medical Journal*, "a report—which from 'information received' (as the police say) we have reason to believe accurate—of an extraordinary occurrence that not long ago caused considerable excitement at Maritzburg. While a number of colored worshippers were gathered together in the church of that town, their devotions were interrupted by the smashing of a window, followed by the fall of a man on the opposite side of the church.

It was found that he had been shot, the bullet having penetrated the left side of the chest and lodged in the heart. Dr. Charles Ward, the district surgeon, made a post-mortem examination, and found the bullet—a Lee-Metford one—impacted in the aorta at its point of passage through the diaphragm. The bullet had travelled from some hills outside the city, a distance of between three and four miles, as estimated by an officer of the garrison, and was so nearly spent that, after passing through the window of the church, a waistcoat, shirt, rib, and pericardium, it penetrated the descending arch of the aorta. It had not momentum, however, to go right through the vessel, but dropped down inside it. The case strikingly illustrates the long range at which the Lee-Metford rifle is effective."

The Neglect of Sanitary Precautions in the Nile Campaign.—It is generally thought that the last Soudan campaign was so well managed in every particular that it would be difficult to find a fault with any of the arrangements. It, however, appears from the following article in the *Sanitary Record* that there were mistakes made. The *Sanitary Record* says: "It is a grave reflection on the administration of the Nile campaign, in almost every respect perfect, that men who, by the systematic observance of everything that could conduce to physical and moral health and strength, had attained a pitch of training and hardening such that, though undergoing the greatest exertion in the hottest season in one of the most torrid regions of the globe, they were rendered almost insusceptible to fatigue and enjoyed a greater freedom from illness than is usual under the most favorable circumstances, should, at the very moment of triumph and the attainment of the end of the war, be attacked with typhoid to an extent apparently as great as in the former Soudan expedition, when the methods and precautions that have on this occasion marked their progress up the Nile valley were unknown. The etiology of enteric fever in Egypt presents a problem of considerable interest, and in some respects a difficult one. Whatever may have been the case in ancient days, there is no doubt as to the fact that the use of the unfiltered Nile water is almost constantly followed by typhoid among Europeans and probably among the natives to an unsuspected extent. In Lower Egypt this need not cause any surprise, considering the grossly polluted state of the river and canals; but in Upper Egypt the sewage contamination cannot be great, and while the well-known turbidity is caused by mud brought down from the mountains around the Victoria Nyanza, from which the river itself is fed and which from its enormous volume cannot be appreciably fouled by the excreta of the sparse population of the highlands and forests of Uganda. We are thus driven to the conclusion that in these regions, under special climatic conditions, the bacillus of typhoid is indigenous, thriving in the soil and water independently of human intervention; while the turbidity and temperature of the water enable it to maintain its vitality longer than it does in European rivers, in which it usually perishes after having run a course of many miles, except where the water is turbid to a degree sufficient to intercept the light. Be that as it may, we have a right to ask what measures were taken for the filtration of the water served out to the troops. The old regulation army filters were notoriously ineffective, and Megnin's "filtres rapides," used in Lord Wolseley's expedition, were found scarcely better; but Pasteur's are perfectly impervious to germs of any kind, and M. Defries has produced combinations of Pasteur's tubes, capable of filtering and, in fact, of sterilizing water in any quantities, whether as portable filters like water carts for army purposes or installations for the supply of towns of almost any size. Was the army provided with a sufficient number of these, and, if not, why was so obvious a means of preventing a fatal disease neglected? But for this one omission, the campaign under the sirdar would have been distinguished as the first in the history of war in which the sanitary administration was absolutely perfect."

Tight Waists.—We look upon it as a barbarous custom for Chinese women to constrict their feet. Li Hung Chang thinks it more barbarous for Americans to constrict their necks and waists; and the old man is right, for there are no vital organs in the feet.—*Annals of Hygiene.*

An Error in Diagnosis.—Dr. Blondel (*Ann. de Gyn.*, August, 1898), during the curettage of a uterus for menorrhagia and purulent discharge, thought the instrument had penetrated the uterine wall. Five months later the same thing occurred. Upon dilation of the organ it was found to be bipartite, and that the curette had only passed from one cavity into the other. Both cavities were then curetted and complete cure was established.

A Small Entrance.—Dr. Albespy (*La Gynécologie*, August 15, 1898) was called by a midwife to see a case in which the uterus was supposed to be prolapsed and the cervix presenting at the vulva. The supposed cervix uteri was found to be the dilated orifice of the urethra and the vulva was entirely closed by a persistent hymen. Careful examination revealed a small aperture in the upper half of the hymen, through which opening liquor amnii was escaping. The patient stated that she had had only one imperfect form of coitus with her lover on but one occasion.

Massage Treatment in China.—The *Scientific American* says that an article appeared recently in the *Deutsche medicinische Wochenschrift*, in which reference was made to a book lately published by T'an Wei, governor of Hufeh. The author, a great authority on massage, was consulted by the late empress of China. The Chinese legends contain many references to various systems of physical exercises, and these are associated in a curious way with metaphysical thought. Life, according to the Chinese traditions, is entirely dependent on "air current"—it is proof against disease. The object of physical exercise is to circulate the "air current." The Chinese system is divided into three periods, each period occupying one hundred days. The first period should commence at the time of the new moon. The patient must rise at 4 A.M., and walk outside his house, and take seven deep in-

spirations. Immediately after this two youths, who have been specially trained, commence a gentle friction all over the body, starting from the cardiac area. At the time of full moon a further set of inspiratory exercises must be taken. Later on and in the second period the various parts of the body are rubbed with wooden planks until the muscles are hardened. It is not until the hardening of the muscles takes place that the real physical exercises commence. Between the fifth and sixth month is the period of greatest activity; the European dumbbell is replaced by large sacks filled with stones. In the third period back muscles are chiefly exercised. Great benefit is said to result from this system of treatment.

Dangerous Trades in Great Britain.—The third interim report of the departmental committee appointed to inquire into and report upon certain miscellaneous dangerous trades has just been issued. Directions were given by the home secretary that the committee should inquire as to the conditions of work as they affect the health of the operatives in twenty-two different industries and processes; eight of these were dealt with in the first and second interim reports, and the committee now give particulars relating to file cutting, galvanized iron works, sole stitching by American machinery, glass polishing, the use of converters in metal works, the manufacture and use of grindstones, testing of bottles by compressed air, and "ending and mending" in velvet works.—*London Times.*

Operation Not Responsible.—A gentleman recently sued a well-known Lyons surgeon for damages laid at $2,000, for the death of his wife, who had been operated on. The decision was to the following effect: "The patient appears to have died from septic troubles connected with metritis determining pulmonary congestion following the operation. But the operation cannot be held responsible for complications which cannot be foreseen and which rarely occur. If such responsibilities were admitted, the practice of medicine in many cases would be rendered impossible."—*British Medical Journal.*

A New Decoration.—"The Red Cross medal" has been founded by the German Emperor, at the suggestion of the Empress Victoria Augusta, lady patroness of the German Red Cross societies. The medal, of which there are to be three classes—bronze, silver, and gold—is to be bestowed on persons of both sexes, without distinction in rank or position in life, for special services rendered to the Red Cross cause.—*British Medical Journal.*

Lead Poisoning in the Pottery District of Great Britain.—Some startling statements have, says an English weekly journal, been recently published in North Staffordshire, on the authority of a nurse whom the Women's Trades Union League sent into the district, to make inquiries respecting the number and nature of existing cases of lead poisoning. She told an interviewer that she was astounded at the extent of the suffering of people of both sexes employed in the pottery industry. She had seen within two months as many as one hundred and fifty patients whose symptoms were those of lead poisoning. Locally, the matter is regarded as most serious.

"Weylerism": a New Disease.—The Havana correspondent of *The Sun* says that there is in that city an infectious fever of a new type, unknown until to-day to the medical profession, which is called "weylerism," because it was first noticed among the reconcentrados, victims of Weyler. It does not yield to quinine or to any other treatment. Healthy people who come in contact with the reconcentrados catch the fever and die of it in a few hours.

A Red Cross Hospital Ship on the Nile.—The Red Cross Society's steamer *Mayflower*, which was chartered by the National Society for Aid to Sick and Wounded in War (the British Red Cross Society) to convey sick and wounded soldiers from the Soudan between Assouan and Cairo, is a stern-paddle steamer, one hundred and forty feet long. She carried two medical officers and eight men of the royal army medical corps, lent by the government, and two nurses sent out by the society. Reconstructed from a pleasure vessel into a hospital ship to hold fifty-two sick and wounded, and on an emergency seventy-two patients, she was fitted out with the most modern medical and surgical appliances and medical stores of every description. The sick and wounded thus enjoyed the luxury of being conveyed by river, and were saved the heat, choking dust, and severe discomforts of the railway journey of about six hundred miles between Assouan and Cairo, which a high authority has described as the worst part of the transit from Khartoum.—*The Hospital.*

The Crusade against Consumption.—There are said to be in existence at the present time about one hundred sanatoria for consumptives, forty-three of which are in Germany and twenty in America. The German sickness insurance companies have appropriated nearly four million marks for the erection or subvention of sanatoria.

"The Chicago Medical Recorder" is an interesting journal which publishes the papers read before the Chicago Medical Society. The MEDICAL RECORD is the source whence many and certainly the most interesting of the news items of the *Recorder* are derived. The members of the Chicago Medical Society should suggest to their editor the propriety of giving credit for matter taken verbatim from other journals.

A German Gynæcological Clinic.—Dr. Ernest B. Sangree thus describes, in the *Times and Register*, what he saw in Winckel's clinic at Munich: "Four large sofas and soon three half-dressed women shuffling in, each of whom was conducted to a sofa, on which she reclined. The fourth sofa was pushed aside to make way for a bed wheeled in, on which was a sallow, thin, very sick-looking woman, too ill to walk. To each of these women a student was assigned, with instructions to make a diagnosis. Along with the patients the "exhibits" were brought in. In plain view and near the women was a small table with several pans, two

of which held underdone babies, one much macerated and the other apparently born dead and before its time. A tumorous uterus with its appendages, the results of an autopsy, and a large multiple fibroid from one of the women, completed the side lights. All these were quite uncovered, and I saw each woman take a nervous glance and try to look another way, while the very sick one trembled like a leaf as her eyes fell on them, and ever and anon returned as if fascinated by the ghastly objects."

The Anatomico-Biological Institute of Berlin.—The second Anatomical Institute of the Berlin University, of which Prof. O. Hertwig is the chief, has been reorganized, and is in future to be called "Anatomico-Biological Institute." The institute will be devoted to work on the borderland of anatomy and physiology. It has three departments—one for histological research, one for embryological work, and one for comparative anatomy.

Dr. Carl Beck has resigned his professorship at the New York School of Clinical Medicine.

Craig Colony Prize for Original Research in Epilepsy.—The president of the board of managers of Craig Colony offers a prize of $100 for the best contribution to the pathology and treatment of epilepsy, originality being the main condition. The prize is open to universal competition, but all manuscripts must be submitted in English. All papers will be passed upon by a committee, to consist of three members of the New York Neurological Society, and the award will be made at the annual meeting of the board of managers of Craig Colony, October 10, 1899. Each essay must be accompanied by a sealed envelope containing the name and address of the author, and bearing on the outside the motto or device which is inscribed upon the essay. The successful essay becomes the property of the Craig Colony, for publication in its annual medical report. Manuscripts should be sent to Dr. Frederick Peterson, 4 West Fiftieth Street, New York City, on or before September 1, 1899.

Bequests to Hospitals.—Mrs. Lucretia A. Wilder, whose will was recently filed in the Suffolk probate office, left about $16,000 to the Winchester Home for Aged Women in Charlestown, the Massachusetts General Hospital, and the Boston Homœopathic Hospital, in equal shares.

An Anti after Revenge and Cash.—The editor of the *Verulam Review*, a rabid antivivisectionist, having been sharply taken to task by the *British Medical Journal* for intemperate statements as to the acts of certain investigators, has lost his temper and announces his intention to sue the editor of the latter journal for libel.

Contract Surgeons in England.—The surgeons of the collieries and the lodge doctors in Durham have inaugurated a movement to obtain better pay for their services. The present fee of the colliery surgeon is a shilling a month from each collier, and for this sum he is expected to treat the entire family and to furnish all needed medicine.

Medical Mayors.—Among the mayors elected in the principal cities and towns of England and Wales, the second Wednesday of November there were no less than nineteen medical men.

A Bullet Embedded in the Heart for Thirty-Seven Years.—A correspondent of the *Baltimore Sun*, writing from Morgantown, W. Va., asserts that a man named William B. Smallridge, who died a few days ago at Glenville, in Gilmer County, carried a bullet in his heart for thirty-seven years. He was a member of company E, first West Virginia infantry, in the civil war, and in September, 1861, while marching through Gilmer County, was shot by some one in ambush, the bullet entering Smallridge's chest at the lower point of the scapula, on the left side, passing thence directly through the left lung into the left ventricle of the heart. The force of the bullet was so broken that it did not penetrate the inner wall, but the regimental surgeon pronounced the wound fatal and left Smallridge to die. He did not die, however, but was sent back up the Little Kanawha River in a skiff to his home, in Glenville, where he recovered and has since lived. A few weeks ago, while on his death bed, he asked Dr. G. O. Brown to make an examination of the wound after his death. This Dr. Brown and Dr. O. B. Beer did and found the bullet embedded in the heart. The man had never suffered from any disturbance of the heart. His death was due to cancer. This report is confirmed by Dr. Beer in a letter in the Cincinnati *Lancet-Clinic* of November 19, 1898.

A Monument to a Plague Victim.—It is proposed to erect a monument to the memory of Dr. Franz Hermann Müller, who died a short time ago of the plague in Vienna. A committee has been formed for the purpose, under the chairmanship of the dean of the medical faculty, Professor Puschmann.

A Dog Quarantine.—The Pennsylvania State board of health has established a three months' quarantine against all the dogs in a village in the northern part of the State, in which there had been almost an epidemic of hydrophobia among the cattle, hogs, and dogs.

The Indian Territory Medical Association will hold its semiannual meeting at Wagoner on December 6 and 7, 1898, under the presidency of Dr. G. R. Rucker, of Eufaula. Dr. LeRoy Long, of Caddo, is the secretary of the association. The programme contains twenty-one titles of papers promised by the members in the sections of medicine, obstetrics and gynæcology, and surgery.

Another Medical College Burned.—The building of the Indiana Medical College, the medical department of the University of Indiana, at Indianapolis, was burned early on the morning of November 25th. Dr. Norman Shobe, who was in the building and attemped to escape by means of the stairway, was caught between the second and third floors and was very severely burned. He was rescued later.

Typhoid Fever is prevailing to an unusual extent in London this autumn.

Reviews and Notices.

Atlas of Syphilis and the Venereal Diseases: Including a Brief Treatise on the Pathology and Treatment. By Prof. Dr. Franz Mracek, of Vienna. Edited by L. Bolton Bangs, M.D. Philadelphia: W. B. Saunders. 1898.

It is especially the colored plates which make this work attractive and useful. The descriptions are certainly much more readily grasped by the student and practitioner of limited clinical experience in syphilis and allied affections by the presentation of cases in this way. It is not a complete treatise, but one to be studied in conjunction with more extensive works. The illustrations are for the most part quite good. The chapter on gonorrhœa is short, but the treatment outlined for this as well as for its sequelæ and complications is sufficient to meet the average needs.

Manual of Chemistry. A Guide to Lectures and Laboratory Work for Beginners in Chemistry. A Text-Book Specially Adapted for Students of Pharmacy and Medicine. By W. Simon, Ph.D., M.D., Professor of Chemistry and Toxicology, College of Physicians and Surgeons, Baltimore; Professor of Chemistry in the Maryland College of Pharmacy. New (Sixth) Edition. In one 8vo volume of 532 pages, with 46 engravings and 8 colored plates, illustrating 64 of the most important chemical tests. Philadelphia and New York: Lea Brothers & Co.

In putting forth a new edition of this carefully prepared work there have been additions and subtractions, both resulting in a betterment of the whole. There are seven subdivisions of the subject, appropriately led off with the fundamental properties of matter and the results of attractions between masses, surfaces, and molecules. In the second chapter are given the theoretical views on the atomic constitution of matter. This subject, surrounded as it is with difficulties, has been elaborated in such a way as to appear clear to one whose knowledge of chemistry is limited. A feature of the work which will interest the pharmacist and student of pharmacy is the fact that all chemicals mentioned in our "Pharmacopœia" are included. Laboratory work will be facilitated by the chapter (v.) devoted chiefly to analytical chemistry. After treating of organic chemistry the author finishes the work with a chapter prepared especially in the interest of students of physiological chemistry. Throughout the newer methods have been incorporated, and attention has been paid to those relating to clinical examinations in the detection of disease.

Preliminary Report of an Investigation of Rivers and Deep Ground Waters of Ohio as Sources of Public Water Supplies. By the State Board of Health. 1898.

The splendid work of the Massachusetts State board of health on the water supplies of that State has stimulated other commonwealths to examine their own potable waters, and reports have been issued from various State boards with more or less regularity ever since. Many of these reports have more enthusiasm in them than intrinsic merit, and still others show the cloven hoof of the political job printer, while still others have accurate and worthy information to convey. It is somewhat difficult to say to which class this present report belongs. On the whole it gives some very useful local information, of interest to the health of the property owners of Ohio, but of no scientific value to the outside hygienist. The elaborate plottings of the chemical constituents seem to indicate that the chemist was doing his work; but what do they tell us? So with the numbers of bacteria to the cubic centimetre, contributed by the bacteriologist; what bacteria were they? From some points of view the publication is to be commended; from others, and those which we consider the more lasting, it is worthless.

Clinical Lectures on Mental Diseases. By Thomas S. Clouston, M.D., Lecturer on Mental Diseases in the University of Edinburgh. New (Fifth) edition. Crown 8vo, 750 pages, with 19 full-page colored plates. Philadelphia and New York: Lea Brothers & Co.

The rapid succession of editions of Dr. Clouston's book disarms the reviewer at the outset; and, indeed, the "Clinical Lectures" have been so recently mentioned in these columns that brief notice only is necessary now. The present edition is mostly a reprint from the last, although several new plates illustrating degenerative processes in the neurons have been added. It is essentially as a clinical treatise that the book has gained its great popularity. Its delineations of clinical types are of the first rank. But there is too little consideration, even for a clinical treatise, of the lights now being thrown on psychiatry by the bordering sciences of biology, of chemistry, and of normal psychology, to entitle this work to the foremost place in its class.

Student's Histology. A Course of Normal Histology for Students and Practitioners. By Maurice N. Miller, M.D., etc. Revised by H. U. Williams, M.D., etc. Third Edition. Illustrated. New York: William Wood and Company. 1898.

This work, a third edition of which is now offered, is, according to its title, a manual for the use of the student. As such it serves its purpose well and we are glad to recommend it. The illustrations have the diagrammatic quality which is of value in a drawing intended to teach something, especially to the mind considering a subject for the first time. Clearness of presentation and accuracy are of more value in a work of this kind than is originality, and in this respect the book is a success. The previous editions of the book have settled its high place, and this later one has increased its value. A student's manual upon histology is essentially a laboratory guide.

Notes on Disinfectants and Disinfection. By A. G. Young, M.D., Secretary of the State Board of Health of Maine. From the Tenth Annual Report. 1898.

This is more than an ordinary compilation from text-books concerning what is known of the subject of disinfection. It is a timely contribution to the subject and is well done.

The Book of Leviticus. A New English Translation, Printed in Colors Exhibiting the Composite Structure of the Book, with Explanatory Notes and Pictorial Illustrations. By the Rev. S. R. Driver, D.D., Regius Professor of Hebrew, and Canon of Christ Church, Oxford; Assisted by the Rev. H. A. White, M.A., Fellow of New College, Oxford. New York: Dodd, Mead and Company. London: James Clarke and Company. Stuttgart: Deutsche Verlags-Anstalt. 1898.

The Bible, or any part of it, is not the kind of literature that is in an ordinary way sent to a medical journal for review. When, however, it is understood that the portion under discussion is the book of Leviticus, and furthermore that the aim in this latest revision has been to render the sense as faithfully as possible rather than to sacrifice that sense in order to give a literal translation, and that the translation is made directly from the original Hebrew, there will not be so much cause for surprise. Leviticus, as is well known, is that book of Moses containing the regulations as to the mode of killing animals for sacrificial purposes and the hygienic ordinances of the Jewish people; thus there occur many points appertaining to medical matters. The laws of the Jews in regard to what they should eat were sufficiently clear and comprehensive, and were calculated to promote good health. The knowledge of leprosy in its different features possessed by the Jews was, for the times in which they lived, curiously accurate, although of course the fact that the disease was and is still very prevalent in and about Palestine must be taken into consideration. They seem to have recognized three varieties: the common white leprosy, tubercular elephantiasis, and anæsthetic elephantiasis. When the priest delivered judgment that a person was suffering from either of the latter forms, strict segregation was ordered. It should be observed, however, that contagion due to human leprosy is nowhere suggested, and also that there would appear to have been a belief that the disease was curable. The chapter dealing with the laws of purification is very interesting, and tends to show that the Jews in those far-off days were not unacquainted with venereal disease. The book of Leviticus in its new form proves more clearly than ever that the Jews, or rather the Israelites, had an intelligent conception of the laws relating to personal hygiene. In the present translation of Leviticus the main sources have been separated from one another and the laws distinguished by means of colors arranged according to their date of origin. The volume is beautifully printed and gotten up, and is embellished by some good illustrations. There can be no doubt that the series of which Leviticus is one will be received with great interest by students of the Bible.

Therapeutic Hints.

Scarlatinal Nephritis.—The chief aim should be to prevent the retention of these products by the organism, in two ways: (1) By combating the nephritis itself; (2) by heightening the excretory functions of the skin and the intestines, or supplementing them by suitable means. To fulfil the first indication—*i.e.*, to lessen the formation and spread of the toxins—the most efficacious means are: more or less absolute milk diet, according to the gravity of the case, combined with hydrocarbons; proscribing absolutely meat and eggs; rest in bed for three weeks at least; alkaline waters, Vichy particularly; pure air, constantly changed. The second indication is met by giving diaphoretics and purgatives and using other means to heighten the activity of skin and bowels for the elimination of the toxins, thus relieving the kidneys. As soon as albuminuria disappears, cutaneous perspiration also increases; to aid in this increase have recourse to warm baths and hot compresses—the air of the room should be uniformly warm; 95° F. for fifteen or twenty minutes at a time; purgatives, enemata of warm water, and infusion of senna. Calomel is to be avoided.—KONTREBINSKY.

Treatment of the Various Forms of Albuminuria in Diabetes Mellitus.—Dr. Carl Grube, of Neuenahr, Germany (*British Medical Journal*, July 23d), says: "As regards the treatment of the functional albuminuria, the chief object we have to attain is the reduction of the irritation of the kidneys. This we accomplish by diminishing the glycosuria, which, as every one who has had any experience of the disease knows, can be done satisfactorily only by dieting. In cases of real chronic nephritis it is often difficult to treat both affections satisfactorily, and one has to try not to do harm in one way by doing good in the other. If, as sometimes occurs, the glycosuria ceases altogether, or at least becomes quite inconsiderable, as the nephritis develops, the treatment is somewhat easier, as the dieting gives less trouble. On the whole, the prognosis in these cases is very grave. The cessation of the glycosuria seems to show that the tissue of the kidneys is more changed than in those cases in which there is still some excretion of sugar. If milk is well tolerated I prescribe it freely. Mineral waters can be beneficial, especially those of Neuenahr, after the use of which I have sometimes seen decided improvement. If the patient has sufficient strength warm baths may be made use of with advantage. They relieve the kidneys by increasing the action of the skin. That it is essential to keep these patients quiet, or even in bed for some time, and to avoid everything that could increase the irritation of the kidneys, need scarcely be pointed out."

Recurrent Epistaxis.—

℞ Antipyrin 0.5
Tannin 1
Powdered sugar 10
M. S. Use locally.

—RENDU.

Influenza with Nervous Symptoms.—

℞ Quininæ salicyl 20
Phenacetini 15
Camphoræ 0.2
M. div. in dos. æq. No. x. S. Two to six powders daily.

—BACCELLI.

Pertussis.—

℞ Antipyrin ..... gr. ss.–ij.
Ammonium bromide ..... gr. i.–ij.
Ammonium muriate ..... gr. v.
Syrup ..... q.s. ad ʒ i.
M.

Iron Diuretic.—

℞ Tinct. ferri chloridi ..... ʒ iv.
Potass. acetatis ..... ʒ iv.
Syrupi simp. ..... ʒ ij.
Aquæ ..... ʒ ij.
M. Two or three teaspoonfuls four times a day.

This is pleasant to take and effective. It forms the acetate of iron, the same as in Basham's mixture.—J. D. ALBRIGHT.

Diuretic in Chronic Interstitial Nephritis.—

℞ Ferri citratis ..... ʒ ij. ℈ij.
Potassii citratis ..... ʒ v. ℈i.
Syrupi limonis ..... ʒ ij.
Aquæ ..... q.s. ad ʒ viij.
S. Take a dessertspoonful before each meal, well diluted.

—DR. I. N. DANFORTH.

Acute Colic.—

℞ Chloroformi ..... ʒ iss.
Tinct. opii deodorat ..... ʒ i.
Camphoræ ..... gr. iv.
Ol. cajuputi ..... ʒ i.
Aquæ ..... ʒ ij.
M. S. One teaspoonful every hour or two.

Post-Partum Hemorrhage.—

℞ Ergotin ..... ʒ ij.
Chloral ..... ʒ ss.
Distilled water ..... q.s. ad ʒ i.
M. S. Ten or twenty minims injected deeply into the muscles of the buttock.

—SIR JAMES YOUNG SIMPSON.

Diuretic Pill.—

℞ Scillæ pulv.,
Digitalis pulv.,
Caffeinæ citratis ..... āā ʒ ss.
Hydrarg. chlor. mitis ..... gr. v.
M. ft. pil. No. xxx. S. One pill three times daily after meals.

—*Practitioner.*

Vomiting.—In obstinate cases of vomiting after surgical operations, try the popular prescription:

℞ Spiritus chloroformi ..... ♏ viij.
Aceti opii ..... ♏ iij.
Mucilag. acaciæ,
Aquæ ..... q.s. ad ʒ i.
Repeat every hour.

Or:

℞ Hydrarg. chlor. mit. ..... gr. $\frac{1}{10}$
Cerii oxalatis ..... gr. ij.
Codeinæ sulphatis ..... gr. $\frac{1}{8}$
Ft. chart. Give at intervals of half an hour until four or five powders have been administered.

—DR. THOMAS L. RHOADS.

Acute Diarrhœa.—

℞ Sodium bicarbonate ..... ʒ i.
Aromatic spirit of ammonia ..... ʒ iij.
Comp. tinct. of cardamom ..... ʒ vi.
Cinnamon water ..... ʒ vi.
Dose, two tablespoonfuls every two or three hours.

—DR. BURNEY YEO.

Coccygodynia.—

℞ Ext. belladonnæ ..... gr. $\frac{1}{4}$
Ext. hyoscyami ..... gr. $\frac{1}{4}$
Iodoformi ..... gr. $\frac{1}{4}$
Ol. theobromæ ..... gr. xx.
M. et fiat suppos. No. i. S. Use at bedtime.

—WHITLA.

Fissure of the Tongue.—

℞ Acidi carbolici ..... 1.5 parts.
Tinct. iodi ..... 5 "
Glycerini ..... 15 "
M. S. For local application with a camel's-hair brush.

—*Monatssch. f. Dermatol.*

Irritable Bladder.—

℞ Salol ..... ʒ ij.
Tincture of hyoscyamus ..... ʒ ij.
Infusion of buchu ..... q.s. ad ʒ vi.
M. One tablespoonful three times daily.

Ulcers of the Leg.—

℞ Carbolic acid ..... gr. xxx.
Boric acid ..... ʒ iiss.
Powdered camphor ..... ʒ ij.
Ichthyol ..... ʒ v.
Oil of sweet almonds ..... ʒ iiss.
Zinc ointment ..... ʒ iij.
M. S. Apply topically.

—Elden.

Treatment of Lupus Erythematosus.—Dr. P. G. Unna, in a discussion on the nature and treatment of lupus erythematosus in the *British Medical Journal*, September 10th, draws up a short scheme of treatment for the practical physician. A cautious treatment may begin with bandages of lead water at night or the application of a powder bag, and during the day with a dusting powder or a zinc-sulphur paste, with ichthyol or resorcin eventually to be rubbed in, or a gelanthum with ichthyol or soft soap, or with both, may be prescribed for the night. Under this treatment the inflammation subsides, and it will be possible to distinguish the indolent from the irritable patches. If the latter show signs of fixed œdema, collodion with soap or ichthyol may be applied, while in cases of darker redness it may be advisable to use the micro-cautery. In addition to these dressings an external application may be used at night, consisting of lead water, ichthyol, or very weak caustic potash (1 in 10,000) solution. On the other hand, the indolent patches require more vigorous management, as by the soap treatment, which may be easily modified in strength and quality by use of the lather of soft soap, salve soap, or mercurial soft soap. These patches are best covered immediately after such a treatment by a wet bandage, and zinc-oxide mull or mercury-plaster mull. Strongly hyperkeratotic patches require before the soap treatment a peeling off process by means of salicylic soap-plaster mull. The patches on the scalp should be treated thoroughly with soft soap and then covered with ointment. In cases of anæmia, flushings of the face, or when digestion is disturbed, an appropriate plan is to give ichthyol internally during the whole course of treatment. Such a treatment, it is true, does not always work *cito*, but it does work *tuto*, and also comparatively *jucunde*.

Pultaceous Sore Throat in Children.—

℞ Calcium permanganate ..... 0.10–0.20 cgm.
Distilled water ..... 20 gm.
M. For external use

The throat is washed out with a very warm boric lotion every three hours during the day, and once or twice during the night. After each washing, the affected parts are painted with the above solution, care being taken to detach the false membranes, but without undue force.—Monmarson.

Hoarseness in Singers.—Singers' nodules are the result of faulty methods of singing, especially of that part which has to do with the tone placing. What is especially interesting to us is that on correction of this fault, and systematic exercise which has for its purpose the placing of the tone well forward, will cause the disappearance of the nodules without the necessity of removal by caustics or crushing forceps, as recommended in most works on laryngology.—F. A. Bottome.

In Acute Gouty Cystitis.—Rest in bed, with a slop diet and diluent drinks, is most necessary for an amelioration of the condition. It is surprising how rapidly patients improve under full doses of colchicum without any local treatment. By local treatment I mean hot baths, for unless the urine should become foul and necessitate attention it is the worst thing for the patient to attempt to wash out his bladder—first, because it is unnecessary, and, secondly, because the irritation of the catheter and lotions intensify the inflammation. Among other drugs to be taken internally besides hyoscyamus, colchicum, potash, uva ursi, and buchu, are the more modern preparations, such as piperazin or urecidin. My experience with lithia is that while it undoubtedly does good in chronic cases its administration in acute cases is apt to intensify the condition. —Mr. Campbell Williams, *The Clinical Journal*, September 28th.

Malaria.—In a clinical lecture, published in the *Tri-State Medical Journal and Practitioner*, Dr. Francis Delafield, of New York, says: "An arrangement which works here in New York is a combination with the quinine of acetanilid and arsenious acid:

℞ Quininæ sulphatis ..... gr. iij.
Acidi arseniosi ..... gr. $\frac{1}{60}$
Acetanilid ..... gr. ij.
M. et ft. capsula No. i. S. Take four in the twenty-four hours.

Now, why this combination is better than quinine alone, or when arsenic is added, or why adding two grains of acetanilid makes it more efficacious than one-thirtieth of a grain of arsenious acid and three grains of quinine, is a question I cannot answer. I have found that it is so by personal experience; I found that the adding of the acetanilid gave me such results that I could not get along without it. I do not give large doses of quinine alone. I have been treating malarial fever in New York for twenty years, and I find that just such a combination of drugs answers very well in my hands; it is even better than Warburg's tincture."

Snake Bites.—

℞ Hydrarg. chlor. mitis,
Pulv. rhei ..... āā 2 gm.
M. S. Take at once.

Follow this with six decigrams of calomel, to be taken every six hours until five doses are taken. The infected spot should first be disinfected.—*Tribune Medica*, Rio de Janeiro.

Dentition.—

℞ Cocainæ hydrochlorat ..... gr. iiss.
Chloroformi ..... ♏ xvi.
Glycerini ..... ʒ vss.
Ess. rosæ ..... gtt. vi.
M. S. Apply, with friction, to the tender gums.

—Champret.

Rhus Poisoning.—

℞ Ammonii muriat ..... ʒ i.
Aquæ ..... ♁ ij.
M. S. Keep the parts wet with absorbent cotton soaked in this solution.

—A. V. Hudson.

Croup.—

℞ Eucalypti ..... 50 gm.
S. Use as a vapor, obtained by means of pulverizers placed near the bed of the child.

—Bonamy, of Nantes.

Diabetes.—My experience leads me to dissent entirely from the proposition implying that danger of producing diabetic coma is in a general way to be apprehended in severe cases by the sudden adoption of the diabetic dietary. I believe the notion is founded upon pure conjecture, and consider that the cases in which it would be inadvisable to commence at once with the fully altered diet are so rare that they may practically be regarded as constituting a negligible quantity.—F. W. Pavy.

Delirium Tremens has been successfully treated by means of hypodermic injections of sulphate of atropine. In almost all cases a dose of one-sixtieth of a grain produced deep sleep.—Tonvime.

Society Reports.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

One Hundred and Forty-Second Regular Meeting, Friday, November 4, 1898.

DR. W. GILMAN THOMPSON, PRESIDENT, IN THE CHAIR.

A Case of Pneumo-Hydrothorax was presented by DR. ALEXANDER A. SMITH. The patient was a man, forty years old, who, in January, 1898, after exposure, had an attack of illness which his physician pronounced grippe; his symptoms were those of a severe cold, and it took him about three months to recover his usual health. In July, after again exposing himself, he was seized with a chill, and soon developed a severe pain in the side. A pleurisy on the left side was made out, and during the course of his illness he was tapped three times, from fifteen to eighteen ounces of fluid being withdrawn from the pleural cavity at each tapping. The patient claimed that from the onset of this attack he could hear a peculiar sound in his chest. In October, 1898, he came under Dr. Smith's care in Bellevue Hospital, with the evidences of a pneumo-hydrothorax well marked. The speaker said that at the present time the heart was displaced to the right, and there was complete dulness over the left lower chest. When the man shook himself, a splashing sound was produced, which could be heard for a considerable distance. He complained of some cough, and tubercle bacilli had recently been found, for the first time, in his sputum. The patient had stated that he had never experienced any severe pain, as was usual in these cases. He had a slight evening rise in temperature, and his weight fell from one hundred and ninety to one hundred and thirty-three pounds, this latter in August. Since then he had regained some of the lost weight. He now weighed one hundred and forty-eight pounds, having gained three pounds since he came to the hospital two weeks ago. It seemed remarkable that the man could remain so comparatively comfortable, and even improve so much, with the evidence present of a pulmonary tuberculosis and pneumo-hydrothorax.

DR. E. G. JANEWAY said he had observed only two cases of this kind which had ended in recovery. He thought it well to allow the fluid to remain in the pleural cavity, as it was really a conservative process, compressing the lung and retarding the progress of the tuberculosis. As an illustration of how well a person can get along with the use of only one lung, Dr. Janeway mentioned the case of a man, now under his observation, whose left lung, as the result of some growth or condition — probably congenital—was practically solid. At various periods in this patient's life he had been told by physicians in this country and abroad—among the latter, Erb—that he had pleurisy with effusion. Dr. Janeway said he also had held that opinion until he had introduced a needle into the man's pleural cavity in five different places, and had failed to withdraw any fluid. The heart was displaced three inches to the right. This patient's right lung was in fairly good condition, and he suffered no inconvenience; he enjoyed mountain climbing and had ascended Pike's Peak and a number of the higher mountains in Switzerland.

A Plea for Earlier Recognition and Prompter Action in Malignant Disease.—This paper was presented by DR. JOSEPH D. BRYANT (see page 793).

DR. ROBERT ABBE said that the proposition contained in Dr. Bryant's paper appealed to surgeons more strongly every day, they being brought to face neglected cases which might have been regarded with increasing hope if seen earlier. The earlier a malignant growth was attacked, the more thoroughly and easily could it be removed, with less likelihood of a recurrence. The speaker said he wished to refer to a point not strictly apropos of the purpose of the paper, but bearing on the subject. During the past two years he had seen a number of cases in which a cancer of the breast had recurred in the form of minute nodules in the lymphatics of the skin—not in the subcutaneous tissue—and he was inclined to attribute such recurrences to infection of the skin at the time of operating; previous to such an operation the assistant usually gave the skin a vigorous scrubbing with a coarse brush, rubbing away from the seat of the trouble. Recently, Dr. Abbe said, he had done away with this vigorous method of cleansing the field of operation, relying merely on simple sterilization by local applications. By so doing he hoped to avoid one possible source of spreading the infection.

DR. CHARLES MCBURNEY said that few surgeons would disagree with the conclusions of Dr. Bryant. Perhaps the most important point which had been raised was that in regard to the early recognition of malignant disease. The speaker said that, while he had no statistics to bear out his statement, he was of the opinion that just as many cases of cancer too far advanced for radical operative interference were presented to the surgeon to-day as was the case fifteen or twenty years ago. In spite of the wider dissemination of knowledge in regard to this disease among the laity and general practitioners, and the greater faith in surgeons, the proportion of suitable cases presented for operation remained apparently unchanged. Very few cases of cancer of the breast, for example, were brought to the surgeon during the best period for operation, namely, when only a small tumor had developed, without dissemination. Not uncommonly the general practitioner kept such a case under his observation for six months or a year, and then brought it to the surgeon with the statement that he "had kept it until it was ready for operation." In one instance coming under the speaker's observation, in which a tumor of the breast was as large as a man's closed fist and a number of glands in the axilla were as big as horse chestnuts, the physician who brought the patient had stated that he had kept her under his own care "until just the right time." The delay in asking for operation might be due to the ignorance of the patient or to her aversion to having anything done, or it might be due to the desire of the attending physician to treat the case himself by simple and pleasing methods. Some of these obstacles to early operation would continue in the future as they had in the past.

Dr. McBurney said that he had the highest faith and confidence in surgical measures as applied to malignant disease in many parts of the body, when undertaken early and applied with a free hand along intelligent lines. The speaker said it had never occurred to him that a recurrence of the disease in the lymphatics of the skin after amputation of the breast was attributable, as suggested by Dr. Abbe, to infection of the skin by too vigorous cleansing methods employed previous to the operation, nor did he regard that as a very likely cause of recurrence. Tendency toward the formation of secondary carcinomatous nodules in the skin usually showed itself at the first examination, and was as common among those who totally neglected cleanliness as among the better class of patients who gave daily attention to cleansing the skin.

DR. JANEWAY said that while the statement was self-evident that the sooner an accessible malignant growth was removed the better, the patient frequently objected to operative interference. The objection usually raised by such patients was that they had a friend or relative

or knew of a similar case in which such an operation was done without avail. The speaker said that he himself had been struck by the large percentage of recurrences after operation for malignant disease. The number of recurrences would no doubt decrease with improved technique and an earlier recognition of the nature of the disease. In regard to cancer of the breast, such a tumor was not infrequently overlooked by the patient until it had attained quite a large size. An objection that had been raised against early operation in this class of cases was that a number of instances were reported in which the breast was removed for conditions which proved to be non-malignant. So far as cancer of the stomach was concerned, it would probably be a long time before early operations would be resorted to for the relief of this condition, on account of the difficulties of early diagnosis. Besides, a gastro-enterostomy, with a permanent fistula and its accompanying discomforts, for the purpose of prolonging the patient's life for a brief period, was not very attractive.

Dr. Andrew H. Smith said he knew of a number of cases in which a tumor which was situated on the under side of a pendent breast had escaped attention for some time. When the tumor was located on the upper portion of the gland, it was more apt to be observed early. The speaker said that not all general practitioners were guilty of the sin of negligence of which they were so frequently accused by the surgeon. In a case which came under his observation last summer, the attending physician was apprehensive he had to deal with a case of cancer of the breast and inclined to advise its immediate removal. The case proved to be one of abscess of only ten days' standing, and rapid recovery took place when the pus was evacuated.

Dr. George F. Shrady said that too much stress could not be laid on the great importance of the early recognition and surgical treatment of malignant disease. The speaker said he could hardly accept the theory of Dr. Abbe, that after an operation for cancer of the breast a recurrence in the shape of nodules in the lymphatics of the skin was attributable to roughly handling or rubbing the skin previous to the operation. It was more probable that the skin had already become infected by that time, and Dr. Shrady said he was inclined to the opinion that such recurrences were more apt to occur in cases in which adhesions of the skin to the tumor existed. In such cases, in order to avoid a recurrence, he left an unusually wide area instead of trying to save the skin for flaps, as the surgeon was tempted to do. In operating in these cases, he made large curved sliding flaps at right angles to the long axis of the wound-incision, which permits one to cut away a large strip of skin and still close the gap. This method was described in the Medical Record, December 2, 1893. The speaker said that in those cases in which he had resorted to this incision, no recurrent nodules had appeared. We should strive to educate both the profession and the laity to appreciate the importance of the fact that a tumor of the breast in a woman past forty should not be neglected.

Dr. Beverley Robinson said he was inclined to agree with the statements made by Dr. Janeway. He could recall a number of cases of cancer which were operated on as early as one could reasonably expect, in which the operation did not prove very beneficial to the patient. In one case now under his observation, that of an old woman who was twice operated on for cancer of the breast, there was now an infiltrated condition of the arm and forearm, which was very painful and for which practically nothing could be done. Dr. Robinson said he did not agree with the statement made by one of the speakers, that a tumor of the breast was not infrequently overlooked by the patient until it had attained considerable size. Women were apt to detect any abnormal condition of the breast very soon, and any well-informed general practitioner who saw such a case was always ready and willing to call in the surgeon.

Dr. Bryant, in closing, said that his chief purpose in presenting the paper was again to call attention to the great importance of the early recognition of malignant disease, and its prompt and thorough surgical treatment. When the condition in which many of these patients were brought to the surgeon to-day was taken into consideration, the results of operative treatment were as good as could be expected. In a recent article in the *Annals of Surgery*, Dr. Halsted had reported that fifty-two per cent. of his cases of cancer of the breast had passed the three-year limit. The extensive excision practised by that surgeon was well known. In his article he stated that in his cases a recurrence was more common in a distant part than in the adjacent tissues; a recurrence in the latter locality, he argued, was due to incomplete removal or to infection at the time of operation, perhaps as suggested by Dr. Abbe. In any case in which a tumor of the breast existed and which was regarded as innocent, the latter fact should be proven by an exploratory incision, if necessary. No such growth should be left if there was any doubt as to its true nature. The fact that many of these operations gave only temporary relief, as suggested by Dr. Janeway, was well known; but this only emphasized the importance of earlier operative interference. By operating early we reduced the mortality and offered the patient greater chances for permanent relief. It was true that sometimes these tumors existed for some time without the knowledge of the patient; in other cases they had a knowledge of such a growth, but kept it to themselves; while there were still others who consulted a physician or surgeon regarding it, and begged that if it was anything serious the fact should be kept from them. It was unwise for the medical attendant to request a patient to call and see him if the tumor increased in size or if another followed operation. The patient should be examined by a physician as often at least as once a month or so, until the time limit of return was long passed.

A Hairpin Extracted from the Female Bladder.—Dr. Robert F. Weir showed a hairpin which he had extracted from the bladder of a young woman. The patient explained that about three months previous to the operation she had used the pin for the purpose of wiping away a bit of discharge from the meatus urinarius, when a sudden knock at the door so startled her that she let go of the pin and it slipped into the bladder. A searcher was introduced into the woman's bladder, but the foreign body could not be recognized by its touch; in a certain portion of the bladder, however, the beak of the instrument turned downward caught on something. The bladder was so irritable that the patient was etherized, and the urethra dilated until the finger could be introduced into the bladder, which recognized the pin; but repeated efforts with forceps and lithotrites failed to detect or catch the foreign body. Finally, with one finger in the bladder and a finger of the other hand introduced into the vagina, after considerable manipulation the rounded end of the hairpin was coaxed into the urethra and then withdrawn with a forceps. Although the hairpin had been in the bladder about three months, it was entirely free from phosphates, but was covered by a tenacious mucus.

Dr. Weir mentioned a similar case which had come under his observation some years ago. In that case the young woman said she had accidentally sat down on the hairpin, and it entered her bladder, where it remained eight months. It was thickly incrusted with phosphates, except at its free ends.

Dr. W. T. Bull said it was rather exceptional that

so resisting a foreign body as a hairpin should escape the ordinary methods of detecting its presence in the bladder. In a similar case which came under his observation some years ago, it was perfectly easy by bimanual palpation to make out the position of the pin and to extract it by means of a bent probe. In cases in which this was not feasible, an *x*-ray picture might prove of value, and would be preferable to such extreme dilatation of the urethra as that practised in Dr. Weir's case.

Dr. Weir said that there had been no incontinence of urine following the dilatation.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, November 21, 1898.

George Tucker Harrison, M.D., President.

Stricture of Œsophagus after Typhoid Fever; Gastrostomy.—Dr. Frederic S. Dennis presented a case of stenosis or stricture of the œsophagus following typhoid fever. The patient was a man who had enjoyed perfect health up to the attack of typhoid fever, about one year ago. Following this illness the œsophagus became obstructed and, after six months, entirely occluded. For months he was unable to swallow anything, and was nourished by rectal enemata and occasionally by a little milk which could be passed through the œsophagus. When first seen he was greatly emaciated and cyanotic in appearance, and his temperature was subnormal—in other words, he was starving. Gastrostomy was done last March in such a way as to leave a fistulous opening without any peritoneum in contact with it, and consequently it had remained patent. Although this man had not taken anything by mouth since the operation, he had gained seventy-eight pounds, his weight now being one hundred and sixty-eight instead of ninety pounds, as it was at the time of the operation. This was good proof of the excellent nutrition that had been maintained notwithstanding the gastric fistula. This case was one of the two to which Dr. Keen had referred in his paper last spring on "Surgery of the Stomach." The stricture of the œsophagus was produced during the healing of a typhoid ulcer.

Tuberculous Joint Disease.—Dr. Dennis also presented two cases illustrating tuberculous joint disease. In the first case, that of a young man, about six inches of the humerus had been taken away eleven years ago, and the patient was presented in order to show the extent of motion that could be preserved after such an extensive resection. The second case, also in a young man, was one of tuberculosis of the joint, in which the soft structures of the joint alone were affected. The disease developed after an injury to the joint. When he first came under observation, there was a sinus discharging pus. The sinus was laid open, and all of the soft structures were removed. As the bones were found to be denuded of periosteum but free from necrosis, they were left undisturbed—in other words, the operation consisted in a resection of the elbow-joint for tuberculous joint disease without removal of any of the bones. Since the operation the joint had been stuffed with iodoform gauze and injected thoroughly with an emulsion of iodoform and glycerin. The result was an exceedingly satisfactory one, and the motion in the joint was increasing daily.

Lupus Erythematosus with Probable Malignant Degeneration; Long Duration.—Dr. Robert Abrahams presented a woman, eighty-one years of age, who, forty-two years ago, noticed a small pimple on the middle of the left cheek. After a while several similar papules appeared on the same side of the face, and then she observed that at times some of these papules became depressed, and that there was a decided tendency to extend at the periphery. Although the patient had visited the most celebrated medical centres of the world, she had obtained no benefit from medical treatment. At the present time the whole left side of the face—cheeks, eyes, eyebrows, and ear—was the seat of a typical lupus erythematosus. There was a small elevated mass on the cheek, which seemed to him to merit special attention. For many months he had noticed a gelatinous mass in one of the atrophic areas on the cheek, and a few weeks ago this began to ulcerate. It now bled freely. His provisional diagnosis of this lesion was flat epithelioma. The case was presented not only on account of its very typical appearance and the great extent of the lesion, but because of the remarkable duration of the disease—forty-two years. Fifteen or twenty years usually constituted the limit. Another interesting feature was the possibility of malignant disease supervening upon lupus erythematosus.

Osteomyelitis of Tibia.—Dr. Thomas H. Manley presented a young man who had come under his observation about two years ago. About one year previously the right knee had been wrenched during a game of football, and subsequently synovitis had developed. Notwithstanding prolonged treatment in hospital he was not benefited. Examination showed osteomyelitis of the head of the tibia; consequently he had made an opening with a drill, and had evacuated the pus. Improvement had been very marked after this, and the man had recovered so perfectly that the government had accepted his services in the late war in Cuba.

Crushing Injuries.—Dr. Manley also presented a little girl, in order to call attention to what he considered to be the proper line of procedure in dealing with certain violent injuries which heretofore had called for primary amputation. The patient had sustained a severe crushing injury of the limb in the evening. He had first controlled the hemorrhage, and then, after thoroughly cleansing the parts, had "embalmed" the limb, as it was called, until reaction had set in and a line of demarcation had formed so that one could tell exactly where to separate the living from the dead tissues. For forty-eight hours this little girl's limb had been allowed to remain in the embalming dressing, and then it had seemed wise to complete the severance of the limb. The child was twelve years old at the time. She is now fourteen years old, and presents a somewhat tender and conical stump.

Homologous Ligation of Arteries.—Dr. Manley next presented a young man, who, five years ago, had had his left leg caught in a moving bridge. It had occurred to him some years ago that it would be desirable whenever possible to use the tissues themselves for the control of hemorrhage, instead of introducing foreign ligature material. Following out this idea in the case presented, he had performed homologous ligation of arteries, by turning them upon themselves, thus producing hæmostasis. When the patient entered the hospital the limb hung only by a few shreds. The limb was embalmed until a line of demarcation had formed, and then the tissues were dissected up sufficiently to get a flap which would properly cover over the stump. In his experience the utility of a stump could not be measured by the amount of skin over it. Some of the most useful stumps that he had seen were those which had simply a cicatricial investment.

Multilocular Dermoid Cyst of the Scrotum.—Dr. Manley next presented a photograph of an unusual tumor—one of multilocular dermoid cyst of the scrotum, complicated by a hernia on the right side. The patient was a man of sixty years, and the mass

weighed fourteen and three-quarters pounds. It had been necessary to support the mass by a sling from the shoulder. On hypodermic puncture and the removal of some of the contained fluid he had found cholesterin, fat, and other substances, such as one would expect to find in a dermoid cyst. The cyst was drained, and with good result.

Dr. Manley also exhibited two small tumors, one from the cervix uteri and the other from the scalp.

Resection of the Head of the Humerus after Severe Injury.—Dr. J. F. Erdmann presented the head of a humerus removed from a German, fifty-two years of age. The man was a sailor, and had been injured on board ship six weeks before coming under observation. The diagnosis was supraclavicular displacement of the head of the humerus, but it was found impossible to reduce the dislocation, and an incision was made between the deltoid and pectoralis major. This disclosed the fact that three inches of the humerus was absolutely bare of periosteum, and that the capsular and muscular attachments had been torn off. After removal of the head of the bone, it was ascertained that the capsule had united at the point at which it had been originally torn. At the end of the second week passive motions were being made, and at the end of the third week the man had 40° of motion from the body. From the condition found at the operation it was evident that an enormous force must have been exerted in order to rip the muscles and periosteum from the bone in this manner.

Dr. Manley said, with reference to the first case of tuberculous joint disease presented by Dr. Dennis, that the youth of the patient at the time of the operation should be borne in mind, as showing what could be done in these subjects. If the deltoid was divided, it was highly probable that the function of the shoulder would be impaired. To the fact that this muscle had been spared by Dr. Dennis in his operation, the speaker attributed much of the good functional result secured.

Wood-Fibre Splints; A Safe and Quick Method of Joint and Bone Fixation.—Dr. Edward A. Tracy, of Boston, read a paper on this subject. He said that the fixative material which he used was wood-fibre, reinforced by gauze. It was made in large sheets of wood pulp suitably pressed and shaped. The fixation was obtained by moulding a properly shaped piece of the splint material on the limb, and bandaging it snugly. When adjusted properly, this usually produced immediate fixation. A paper pattern should first be made. The wood-fibre splint was more easily manipulated than leather, and was porous. It was applied directly in contact with the skin, and without padding. The speaker then described how the material might be conveniently used in various locations, and exhibited a number of splints by way of illustration. One of the best examples was a splint made in two lateral pieces, which had been moulded to the lower limb and worn for eight months in a case of tuberculous joint disease. This demonstrated the durability of the splint material, and how easily the splint could be tightened as the swelling subsided. The speaker claimed that plaster of Paris as ordinarily applied over padding did not give such good fixation as the wood fibre, because of the application of the latter directly to the limb. Moreover, the wood-fibre splint, being removable, was less dangerous than those of plaster of Paris. He was of the opinion that it was very common to see deformity of the leg after fracture of the leg bones, because of the use of plaster of Paris and the consequent imperfect immobilization.

Dr. Manley thought this splint material would prove an ideal one in the management of rachitic deformities. The material was cheap and porous, and was easily made plastic. In fractures of the extremities, however, he believed better results were to be obtained without splints, simply by taking advantage of position and relaxation of the muscles. He did not believe plaster of Paris should ever be used in cases of fracture when the surgeon had a choice of materials. The principle of fixation seemed to be a wrong one, for union appeared to be favored by occasional removal of the dressings and movement of the fragments.

Montauk Point and the Government Hospitals.—Dr. Wickes Washburn presented a paper on this subject, and illustrated it by maps and drawings (see page 801).

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent).

CONGENITAL STENOSIS OF PYLORUS—PYLORIC OBSTRUCTION—ANEURISM OF CAROTID—POLYURIA—COLEY'S FLUID IN SARCOMA, REPORTED SUCCESS—SOME BOOKS—COLLEGE OF SURGEONS—HARBEN LECTURE—TYPHUS—TROPICAL DISEASE—DEATHS OF TWO OCTOGENARIANS.

London, November 18, 1898

Congenital hypertrophic stenosis of the pylorus has this year attracted attention on both sides of the Atlantic. Altogether some twenty cases have now been collected, besides a number of others which may be considered doubtful.

Two cases were reported in a paper by Dr. E. Cantley, at the last meeting of the Medico-Chirurgical Society. One patient was a boy who died in his fifteenth week from vomiting and marasmus. The other, also male, died in his eighth week "in a fit." In both, vomiting was the prominent symptom and the wasting was rapid. Such is, in fact, generally the course, and there is generally constipation without signs of intestinal obstruction or gastritis. Sometimes a tumor may be detected. The specimens exhibited at the meeting show the pathological changes. In both the pylorus was about an inch long, forming a thick elongated tumor, well defined at either end. The thickening was evidently due to hypertrophy of the unstriped circular fibres of the middle coat of the pylorus. Other changes secondary to this may be found in the pylorus, stomach, or œsophagus. Thus the mucous membrane in these specimens was thrown into longitudinal folds and appeared thickened, but microscopic examination showed that there was no actual thickening of this layer. But though due to the contraction, the folds increased the stenosis by blocking the lumen. The diagnosis must usually be made from the characteristic course, but sometimes a tumor has been felt during life, giving certainty, in which case it was thought surgery must intervene. Other treatment could only be palliative.

Dr. Norman Moore suggested, in connection with the sharp limitation of the hypertrophy to the pylorus, the same condition being found in specimens of epithelioma, that perhaps it arose from the junction of two processes of development.

Dr. Rolleston seemed inclined to admit the theory of Dr. John Thomson, of Edinburgh, that the condition was due to spasm, perhaps arising from absorption of amniotic fluid, which acted as an irritant. The change is certainly confined to the muscular coat, but Metzler maintains that there is no proof that spasm of the pylorus can set up hypertrophy.

The Medical Society had a "clinical evening" on Monday. Mr. Owen (president) showed a man on whom he had operated for pyloric obstruction, which proved to be from malignant growth. The stomach

was made to communicate with the jejunum, and the patient said he was in good health and had gained twenty pounds in weight since the operation.

Dr. Taylor showed a case of aneurism of the right carotid. The patient had previously been operated on for popliteal aneurism on both sides.

A woman with polyuria—passing more than two hundred and eighty ounces daily—was shown by Dr. Hadley. There was no sugar, but a trace of albumin was found. The urea was in excess. The appearance of the woman gave rise to a suggestion of myxœdema. Another view was that the affection might be granular disease commencing in an unusual manner.

Mr. Battle showed the man he exhibited last year, when there were several tumors over the scapula and enlarged axillary glands. Specimens of the growths had been declared by pathologists to be spindle-celled sarcoma. A three months' course of injections with Coley's fluid ended last May. There is now no trace of the tumors.

There was a marked difference of opinion expressed as to this case. Mr. Moullin congratulated the operator on the first successful case of undoubted sarcoma cured in England. In his own cases he had not been able to prove that they were sarcomatous, though they were assuredly neither inflammatory nor gummatous, and they disappeared under the treatment.

Mr. Owen (president) could not credit that this case had been sarcomatous, and it ought not to appear in the "Transactions" as a cure of sarcoma. He mentioned a case treated for malignant disease of the end of the femur, which on operation had been proved to be tuberculous joint disease.

Mr. Waterhouse was just as sceptical after trying the fluid in five cases. In three of these there were rigors and in the other two the patients died of hyperpyrexia. He related a case, pronounced by two eminent pathologists to be sarcoma, but the patient refused operation, and three months later there was suppuration and a piece of necrosed bone came away.

In reply, Mr. Battle said his own impression at first had been that his case might be syphilitic, and he therefore gave a full course of iodide in large doses, without the least effect. After two months of this sections were submitted to Dr. Jenner and Mr. Shattock, who both pronounced the disease to be spindle-celled sarcoma. He believed that it was so, and the members could now see for themselves that the man was healthy and without a trace of the tumors he had when they saw him a year ago.

The Society of Anæsthetists has issued its first volume of "Transactions"—a less ambitious work than many of similar name, but one of considerable interest. The price is only 5*s*.

Sir William Flower's "Essays on Museums and Other Subjects Connected with Natural History" will interest many medical men. Some of the "essays" are severely scientific; others are biographical sketches of some of the author's eminent friends, and remarks on their works.

The life of Dr. Southwood Smith, the eminent sanitarian, has appeared from the pen of his granddaughter, Mrs. C. L. Lewes, who is a sister of Miss Octavia Hill, and connected by marriage with Mr. G. H. Lewes.

"Lectures on Giddiness and on Hysteria in the Male," by Sir T. Grainger Stewart, is a notable little book, of which the second edition is ready. Price, 2*s* 6*d*.

Dr. Lionel Beale's "Vitality: An Appeal, an Apology, and a Challenge" is a reprint of the articles under that title which appeared in *The Lancet* a few months ago. The subject is intensely interesting, and Dr. Beale is a master whose challenge is not to be easily taken up. He insists on the microscopic view of the matter, and in this his researches and experience give him the highest place. The reprint is issued at 6*d*.

Morris' Hunterian lectures on "Renal Surgery" have appeared in book form.

Dr. Luff's new book on "Gout" embodies his Lumleian lectures on that disease.

Poland's "Traumatic Separation of the Epiphyses," with its numerous plates and engravings, is a fine illustration of the value of *x*-rays, which is also shown in the same author's "Skiagraphic Atlas" of the development of the bones of the wrist and hand.

"Windyhaugh," by Graham Travers, is a story embracing a psychological study of a girl's life from childhood to womanhood. It ought to be a picture, for Graham Travers is a woman and a doctor, her real name being Margaret Todd. A former novel by Miss Todd, issued some six years ago, was "Mona Maclean," in which Mona was rejected at the final examination, but came out with a medal on a second attempt. It is said the novelist did the same.

The annual meeting of fellows and members of the College of Surgeons was held yesterday. There was a dense fog, but nearly one hundred persons turned up. Several resolutions in favor of reforms were again passed *nem. con.*, for the members of the council present did not care to vote—knowing, I suppose, that nothing would be done. But it was announced that a proposal to adopt a gown for members as well as fellows had been referred to a committee. The college has no doubt the same right to authorize such decoration as have the ancient orders of Druids or Foresters, or even the Freemasons.

Sir R. Thorne delivered his concluding Harben lecture on phthisis on Wednesday. He does not support notification of the disease, and explained the provisions in this direction in New York, where, he said, the application of it was limited.

A nurse put one-half ounce instead of one-half drachm of laudanum into an enema. At the inquest the matron admitted that it was her own duty to measure the medicine. The question arises whether the matron ought to be trusted to measure poisons. Too much is left to nurses and the nursing department in many hospitals.

Some scattered cases of typhus have been notified in London. This disease is so seldom seen here that errors or difficulties of diagnosis are likely to occur.

The colonial office has sent a circular to the medical schools, respecting the provision recently made for instruction on tropical diseases.

Two octogenarians died last week. One was Surgeon-General Maclean, late professor in the Army Medical School, which he joined when it was founded. He had previously had a most distinguished career. His "Memories of a Long Life" is a most interesting book. His text-book of tropical diseases and other professional writings are well known. He was eighty-seven at his death on the 10th inst. Dr. McDermot, who was in his eighty-third year, died on the 9th inst. He had enjoyed an enviable position as senior practitioner in the pleasant city of Bath, where he settled some forty-four or forty-five years ago.

Le Grand Lac Salé.—According to the *Journal de Médecine de Bordeaux* of October 2d, a French traveller in his tour of the world discovered, at some twenty kilometres from Salt Lake City, a lake whose borders were marked by an abundant crystallization during the winter. The translucent irregular crystals were found to be composed almost exclusively of the sulphate with traces of chloride and carbonate of sodium. Here is a sufficient quantity of saturated Glauber-salt water, the *Journal* remarks, to purge the whole of Europe.

"HAWAII FROM A HEALTH POINT OF VIEW."

To the Editor of the Medical Record.

Sir: In the Medical Record of October 15, 1898, you have an editorial on "Hawaii from a Health Point of View," that can hardly be allowed to pass unchallenged, as it gives a very erroneous impression of the conditions as they exist in Hawaii to-day. You say:

"For many years the Sandwich Islands have been hotbeds of disease, and until drastic measures have been put into force are likely to remain so. In the Medical Record of April, 1889, Dr. Prince A. Morrow, who probably is better acquainted with the subject than any one else, contributed some notes of observation on matters medical in the Sandwich Islands, which although some few years have elapsed since they were written, will to all intents and purposes apply with equal force to the present situation there. . . . Dr. Morrow says: 'The demographic effects of introduced diseases in a virgin soil can nowhere better be studied, and they exhibit facts of the most remarkable interest. The natives have proven strangely susceptible to the diseases of civilized life, and trifling ailments—such as measles, whooping-cough, etc.—acquire by their transplantation into this soil all the virulence of a fatal pestilence. Measles and whooping-cough, introduced in 1849, almost decimated the population; the mortality was excessive, almost every case terminating fatally. The ravages of smallpox, introduced in 1853, were none the less frightful. In the island of Oahu over fifteen thousand died, and the marshal of the islands informed me that he superintended the burial of ten thousand victims of this disease in Honolulu alone — more than one-half of its entire population.'* With regard to leprosy Dr. Morrow says, in 1889: 'Nowhere else in the world can be found a parallel to the extraordinary development and rapid spread of this disease, which in the short space of little more than one generation has attained such alarming proportions and proved such a terrible menace to the public health.'

"That matters have not changed much for the better in this respect, an article by Dr. Burnside Foster, in the *North American Review* of September last, would seem to demonstrate. Dr. Foster says: 'Leprosy up to 1849 was unknown in the Sandwich Islands, at which date it was introduced by two Chinese sailors, and the disease has spread so rapidly that at the present time nearly ten per cent. of the Hawaiian natives are lepers.' These being the facts of the case," etc.

Now, Mr. Editor, these are emphatically not the facts, and if Dr. Prince A. Morrow is the best informed person on the subject, then I am sorry to say that he knows very little about the conditions as they exist here to-day. He describes them as they were during the first half of the present century, and we are led to infer that the same conditions prevail at the present time. Nothing could be more contrary to the actual facts. It is true that in the early part of this century contagious diseases wrought sad ravages among the native population. It is true that measles and whooping-cough had a terrible mortality in 1849, because the natives in their ignorance persisted in bathing in the sea and the cool mountain streams to allay the accompanying fever. It is true that smallpox slew thousands in 1853 for similar reasons and because they had not the protection of vaccination. But since those early days even the natives have learned how to care for their sick, not so well as one could wish perhaps, but sufficiently to avoid such mortalities. During a residence of twelve years in Honolulu I have seen epidemics of measles, whooping-cough, the grippe, dysentery, cholera, and enteric fever sweep over the place, and can truthfully say that the mortality has been no greater, if anything less, than it is from the same diseases elsewhere. During the past five months quite a general epidemic of measles has prevailed, brought here by United States troops. Only two persons have died of the disease, one in August and one in October—not a very high mortality; and yet Dr. Morrow says: "The mortality was excessive, almost every case terminating fatally."

There has been no general epidemic of small-pox in Honolulu since 1881, when there were 780 cases and 282 deaths. Yet scarcely a year has passed since then that one or more cases of the disease have not been brought to our doors from abroad; but, owing to the efficient system of quarantine that has been established, it has never been able to pass this barrier. Compulsory vaccination has been enforced many years, and the inhabitants now have the benefit of this protection, which they did not possess in earlier days. The board of health imports fresh vaccine lymph from New Zealand every month to meet any emergency that may arise from this disease, and we now have no more to fear from it than have the great cities of the United States. In 1895 cholera gained a foothold in Honolulu, but after a fierce struggle of a month's duration it was stamped out. In this epidemic eighty-eight cases and sixty-five deaths were reported, occurring in twenty-five different localities extending over a distance of three and one-half miles. A large fresh-water mountain stream emptying into Honolulu harbor, about forty acres of rice and taro land (covered with water) became infected. But in spite of this start the board of health organized the entire community into a corps of assistants and stamped the disease out.

We are now passing through a fatal epidemic of typhoid fever, but it is confined to the United States troops at Camps McKinley and Otis, and is due to the almost criminal negligence of the commanding officers in not adopting proper measures for disposing of the camp refuse and fæcal filth.

In regard to leprosy, your quotations are equally misleading. The idea that ten per cent. of the native population is afflicted with leprosy is simply preposterous. The last census, taken in 1896, gives the native and part-native population as 39,504. If your statement is true, then there must be 3,950 lepers among the Hawaiians. Such a statement would be ridiculed by every medical man on the islands. There were, on October 31, 1898, 1,076 lepers of all nationalities at the settlement on the island of Molokai, 1,015 being Hawaiians or part Hawaiians. Deduct this number from 3,950 and there would be left 2,935 Hawaiian lepers at large in the islands. I seriously doubt if there are much over one-tenth that number of lepers at large in the whole group. Segregation has been thoroughly enforced during the past six years (ever since the overthrow of the monarchy), with the result that the number of cases sent annually to Molokai is becoming less and less.

From the board-of-health statistics we find that there were sent to Molokai in 1893, 211 lepers; 1894, 138; 1895, 106; 1896, 143; 1897, 123; and during the first ten months of 1898, 75.

This decrease of over fifty per cent. in six years is very significant, for the law of segregation was never so rigidly enforced as during this period, and it leads us to hope that in a few years more no lepers will be at large. Another hopeful sign leading the health authorities to believe that they are getting toward the end of the arduous task of apprehending lepers is the mild character of the cases that now come before the board for examination. In 1893 and 1894 fully thirty per cent. of the cases examined were advanced, being of many years' duration, and the disease had al-

ready wrought sad ravages in the unfortunate patients. During the past two years not more than five per cent. can be put in this class, the remainder being composed of mild and recent cases.

Segregation was the means that rid Europe of the leprosy centuries ago. It is the method by which Norway is freeing herself of the disease to-day. Hawaii is following her example with gratifying results. Not only is this practical plan being pursued with a thoroughness which hardly needs any assistance from the United States, but other work is being prosecuted without interruption; namely, scientific investigations as to the nature of the bacillus of leprosy and experimental work in therapeutics.

One would infer from the tone of your editorial that nothing is being done here to check the spread of the disease, and yet upon investigation you will find that as much attention is being paid to it as anywhere in the world.

The entire population of the Hawaiian Islands is only 110,000, including about 50,000 Asiatic contract laborers, but this small community expends $125,000 annually for the segregation and care of the lepers. This is done as thoroughly and as humanely as possible. One might travel from one end of the group to the other and not meet a leper. Therefore Dr. Foster's fears in regard to the dangers of infection are not well founded.

It might be well for Dr. Foster to instruct the New York board of health in its duties to the public in this matter, for, by a singular coincidence, the very journal that announced the conclusions reached by the Congress of Leprologists in Berlin in October, 1897, namely, that leprosy was contagious, also gave as an item of news that the New York board of health had winked at the escape of the lepers from North Brother's Island.

F. R. Day, M.D.,
Member of the Hawaiian Board of Health.

Honolulu, November 9, 1898.

THE SURGICAL NURSES FROM THE ACADEMY OF MEDICINE.

To the Editor of the Medical Record.

Sir: On page 784 of your issue of November 26th, there is "A Word upon the 'Surgical Nurses' Sent out by the Academy of Medicine." For the information of your correspondent, who could have obtained it, however, without occupying one and one-half of your columns, I request you kindly to publish this brief reply to some of his statements.

"The red lines drawn through the names of all the medical men, members of the committee on nursing," mean that these medical men ceased to be members of the committee four years ago. The executive committee of the New York Academy of Medicine has been in charge of the nurses' bureau since, and has utilized the old blanks, which had been printed in large numbers. It reports to the council every month. Miss R. MacHaffie, "whose name does not appear upon the surgical register of this city" (I admit I do not know what the surgical register is), is the clerk of the bureau.

The "inference" that the charge of this department is now "relegated to other than medical hands" is not based on facts. The gentleman does not expect a member of the executive committee to do the clerical work?

"If this be so, perhaps a word of gentle advice may not be amiss." But it *is* not so. Still the gentleman's advice, as long as it is given "in no carping spirit," is always welcome. Some of it is, however, superfluous. The nurses *are* divided as he advises into groups—surgical, medical, gynæcological, obstetrical; also children, nervous, insanity, chronic, trained and untrained. But they are not asked about their religion, as the gentleman appears to suggest, nor does the bureau care for their "medical training." The bureau wants nurses, not medical men or women. Least of all, does the committee select them "as exponents of surgery—and of asepsis." That is what the most enlightened "surgical specialists" are for, guided by bacteriologists, not nurses.

"Some physician familiar with the names of prominent surgical specialists should be in charge of the bureau, as has been the case until of late. But as matters now stand, we have no real guarantee." The executive committee of the academy in charge of the bureau consists of physicians; they have been elected by the academy, and grew up in New York. They know the prominent surgical specialists and those not "prominent"; in fact, they are well acquainted with the profession at large. One of them, usually the chairman, examines every application of a nurse, and recommends or rejects. If mistakes are made, "it is obvious that some of the doctors who recommend the nurses registered there should be more careful in signing credentials." I fully agree with your correspondent. The committee of the nurses' bureau cannot go behind the returns. We have to accept a nurse that comes to us with the most excellent recommendations. When he or she turns out badly, the only thing we can do is to dismiss the nurse from our list, as we promptly did when your correspondent entered a complaint.

In connection with this case, Mr. Editor, I wish to remind your correspondent that it occurred in the good old times he eulogizes, before MacHaffie's clerkship, viz., four years ago. The complaint is dated March 30, 1894. As to the third case of your correspondent, on account of which he complained over the telephone, the same nurse was retained six weeks in preference to one we sent as a substitute. He will also remember that the nurse's application was sent him and that he was requested to enter his complaint on the same, which he did April 7, 1897. The service of the nurse began March 27, 1897. So it appears your correspondent has nurtured his grievance a long time before expressing it. Meanwhile, he seems never to have inquired into the working of the bureau.

The "home-rule policy" suggested by your correspondent may not please most men. But if any physician specifies the city or the school from which the nurse should come, he will be accommodated if it be possible. As a rule, and in justice to the nurses, they are sent—according to their specialties—in regular order.

Now, Mr. Editor, if your correspondent—himself a fellow of the academy, which he sometimes visits—had made inquiries in the office of the bureau, where the clerk is always present, or of the superintendent and librarian, or of the undersigned, he would not have been obliged to "infer" things that have no existence or to advise rules which have been in effect for years.

A. Jacobi,
Chairman of Executive Committee, New York Academy of Medicine.

Novel by Rider Haggard Treating of the Vaccination Question.—A new novel entitled "Doctor Theme," by Rider Haggard, will be published by Messrs. Longman & Co. in November. The story, which is told by the principal actor, Dr. Theme, after the final catastrophe, deals with the result of the conscientious-objector clause, under which the safety of many thousand children and through them of the community is practically left in the hands of the antivaccinationist party.—*British Medical Journal.*

New Instruments.

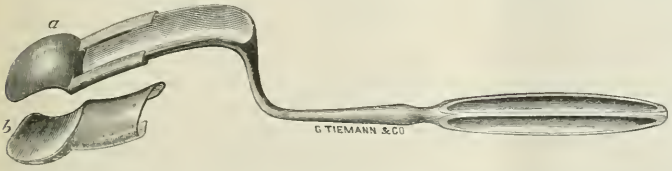
A CERVIX-ELEVATING ATTACHMENT TO THE VAGINAL SPECULUM, FOR EXPOSING THE POSTERIOR FORNIX.

By WALKER M. BRICKNER, M.D.,
HOUSE SURGEON, MT. SINAI HOSPITAL, NEW YORK.

MANIPULATION about the posterior fornix of the vagina, either in vaginal section or, more especially, in the introduction and removal of drainage tubes or gauze packings in cases of pelvic abscess, etc., is frequently rendered difficult by the overhanging of the cervix uteri—which obstructs the view and impedes the application of instruments. The cervix may be lifted with a volsellum, but this requires an additional hand and in itself is an obstruction in the vagina.

The accompanying cut illustrates a simple device for lifting the cervix completely from sight and freely exposing the full extent of the posterior portion of the vaginal roof. It consists of a slightly concave, metallic spatula, large enough to receive and support the cervix (*i.e.*, about three-fourths of an inch square), fitting by means of a cap over the end of the speculum, beyond which it projects.

The speculum is introduced with the spatula attached, and then turned so as to catch the cervix in



the upper, concave surface of the latter. The introduction is easy and painless, and the spatula, instead of occupying valuable space, creates more. A little additional upward pressure on the speculum will put the posterior fornix widely on the stretch. In vaginal section the landmarks are thus freely exposed and lighted by reflection from the spatula. Similarly, openings in the roof of the vagina, posteriorly or somewhat on the side, may be so stretched that gauze or tubes can be slipped in with minimum production of pain.

The attachment here presented was made to fit an anterior vaginal "spade," but I see no reason why it cannot be equally well fitted to a bivalve or other speculum.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending November 26, 1898:

	Cases.	Deaths.
Tuberculosis	145	136
Typhoid fever	44	28
Scarlet fever	113	5
Measles	146	4
Diphtheria	163	22
Laryngeal diphtheria (croup)	10	7
Cerebro-spinal meningitis	0	6
Chicken-pox	30	0
Small-pox	3	1

Beds of the Various Nations.—In England the old four-poster bedstead is still the pride of the nation, but the iron or brass bedstead is beating it out of the field. The English beds are the largest beds of the world. A peculiarity of the German is its shortness; besides that, it consists frequently, in part, of a large down pillow or upper mattress, which spreads over the person and usually answers the purpose of all the other ordinary bedclothing combined. In the tropics men sleep in hammocks or upon mats or grass. The East Indian unrolls his light, portable charpoy or mattress, which, in the morning, is again rolled together and carried away by him. The Japanese lie upon matting, with a stiff, uncomfortable wooden neck rest. The Chinese use low bedsteads, often elaborately carved, and supporting only mats or coverlids. The ancient Greeks and Romans had their beds supported on frames, but not flat like ours. The Egyptians had a couch of a peculiar shape, more like an old-fashioned easy chair, with hollow back and seat.—*Indian Lancet.*

Death within Twenty-Four Hours may be expected when the respiration and heart beats approximate.—*Medical Sentinel.*

The Mother Should be the Nurse.—The following ancedote, recorded of Blanche of Castile, shows strong maternal feelings, and has a tendency to recommend the duty enforced in this essay. Blanche of Castile performed for Lewis, her son, in his infancy, with peculiar attention, the duties of nurse. A lady of the court who, in imitation of her royal mistress, nursed her own child, took upon her, during a severe indisposition of the queen, to relieve the wants of the prince, who languished for his accustomed nourishment. Blanche on reviving, having called for her son, put him to the breast, when the child, already satisfied, refused the feverish milk. The queen, suspecting what had passed, affected a desire to see and thank the person who had performed for the young Lewis this maternal office. The lady, summoned to the chamber of her mistress, confessed the fact, alleging that she had been moved by the cries of the infant prince. Blanche, without speaking, darted a scornful glance toward the officious proxy, and compelled the child to throw back the milk he had swallowed, declaring "that no other woman should dare to dispute with her the title of mother to her son."—JOSEPH ADDISON, *The Spectator.*

Longevity.—Tesla thinks a man has just so many hours to be awake, and the fewer of these he uses up each day the more days will they last. "I believe that a man might live two hundred years if he would sleep most of the time. That is why negroes live to such an advanced age, because they sleep so much. The proper way to economize life is to sleep every moment that it is not necessary or desirable that you should be awake."—*Popular Science News.*

What is a Great Physician?—The late Hon. Thomas F. Bayard, in an address to a medical class, made the following remarks: "I never knew a really great physician who was not greater as a man—I mean whose greatness did not rest upon his personal and moral basis, which elevated and strengthened his professional life, infused itself into the community in which he lived, and was, in fact, the underlying and pervading cause of his influence and consequent success in his profession. It has been my personal fortune to know such a man. It has been my privilege and delight to accompany him in visits where his only medicines were the personal presence and conversation of the man himself. He had shared and lessened their anxieties; counselled the wayward; had led the

sick back to health; cheered the weak hearted; had rejoiced with them that did rejoice and wept with them that wept. And I have seen such a man so surrounded by an atmosphere of love and trust, holding as it were the heartstrings of a family in his hands, their guide, philosopher, and friend; and then I realized what a moral force in society the profession, properly comprehended and properly followed, was capable of exerting, and how relatively small a part of its usefulness was the administration of medicine."

The Adulteration of Coffee.—*The Lancet* says: "On reflection we should not think that the method of adulteration, about to be described, is 'new,' for it seems to us that it offers some explanations of the wooden character of the coffee infusions which are commonly offered to the public in this country. Coffee affords a most excellent beverage, but nobody seems to be able to get it good, and this is probably the reason why the consumption of coffee is rapidly declining. But the material must, of course, be good and fresh, with all the aromatic oils preserved intact. We have heard that by coating the roasted berries with a thin film of gelatin, the delicious aroma of freshly roasted coffee may be indefinitely preserved. But this step would be quite futile in view of the 'new' adulteration. This consists in washing, coloring, and drying the berries in centrifugal machines with sawdust, with the result that the crevices of the berries become filled with powdered wood, which is said to make them of a fine white color, and thus to enhance the market value of the product. This ingenious but immoral process is said to be carried on in Hamburg, Bremen, Antwerp, and Rotterdam, and we respectfully request our customs authorities to keep a sharp lookout on the consignments of coffee coming from these places, in spite of the market value, as it is said, being thus enhanced."

Incompatibles.—Dr. F. A. Ruddiman (*Journal of the American Medical Association*, October 15th) in an article on this topic says: "To become convinced that the subject of incompatibility is one that has not received the attention which its importance demands, we have but to glance over the appended prescriptions, which are a few of those to be found in standard works on medicine and therapeutics.

℞ Collodii,
Spt. ammoniæ,
Tinct. iodi.....ːāā part. æq.
S. Paint over part with a camel's-hair brush.

—Potter's "Materia Medica and Therapeutics," 6th ed., p. 716.

In this prescription the iodine is changed chiefly to ammonium iodide with a little ammonium iodate. Did the prescriber know this, and did he wish to get the action of these instead of the action of iodine?

℞ Hydrarg. iodidi viridis..... gr. ¾
Potass. chloratis..... gr. iij.
Potass. iodidi..... gr. ¾
Chocolate..... q.s.
M. ft. in tabellum No. 1.

—Hare's "System of Practice and Therapeutics," vol. ii., p. 160.

In the presence of moisture the potassium iodide reacts with the mercurous iodide, causing the formation of metallic mercury and the much more active mercuric iodide (the red iodide of mercury). The potassium chlorate in the presence of a mineral acid, as the hydrochloric acid of the gastric juice, causes the iodine to be set free.

℞ Hydrarg. chlor. corrosiv..... gr. ss.
Potassii iodidi..... ʒss.
Decocti cinchonæ..... ʒviij.
S. ℥ i. ter die post cibum.

—Farquharson's "Therapeutics and Materia Medica," p. 334.

The potassium iodide combines with the corrosive sublimate and forms first the red iodide of mercury, and then combines with this to form the soluble double compound—potassium mercuric iodide. This double compound combines with the alkaloids of cinchona in the decoction and forms a precipitate. The danger in this prescription lies in the mercury being thrown out of solution. Did the physician realize that it is possible for the patient thus to take most of the mercury at one dose?

℞ Sodii sulphitis..... ʒ ij.
Sp. ætheris. nit..... ʒss.
Liq. ammon. acet..... ʒiij.
Aq. dest..... ʒij.
M. S. Teaspoonful every two hours.

—Hare, vol. ii., p. 391.

The spirit of nitrous ether is decomposed, giving off the gas nitric oxide and part of the sodium sulphite is changed to sodium sulphate.

℞ Hydrargyri..... gr. ¼
Iodi..... gr. ¼
Ac. tannici..... gr. ¼
Glycerini..... ℥ xv.
M.

—Hare, vol. ii., p. 125.

The iodine will change the mercury to mercuric iodide. The tannic acid will change part of the iodine, with the formation of hydriodic acid, which will further combine with the red iodide of mercury.

℞ Tinct. ferri chloridi..... ʒ ij.
Acidi sulphurosi..... ʒ i.
Potass. chlorat..... ʒ i.
Glycerini..... ʒss.
Aq. calcis..... q.s. ad ʒiij.
M. Dose, one teaspoonful every hour to two hours for a child of three years.

—Smith's "Diseases of Children," 6th ed., p. 321.

On adding the sulphurous acid to the tincture of iron the mixture becomes of a much darker color at first and then nearly colorless. The glycerin may now be added and then the potassium chlorate dissolved in the water. There is barely a sufficient amount of water to dissolve the chlorate, and after mixing with the ingredients some of the salt is thrown out of solution by the alcohol in the tincture."

Health Reports.—The following statistics concerning yellow fever, small-pox, cholera, and plague have been received in the office of the supervising surgeon-general of the Marine Hospital service during the week ending November 26, 1898:

		Cases.	Deaths.
Yellow Fever—United States.			
District of Columbia, Washington.	November 18th	1	1
Yellow Fever—Foreign.			
Brazil, Rio de Janeiro	September 30th to October 14th.	19	3
Columbia, Barranquilla	October 15th to 22d.	..	2
Cuba, Havana	November 10th to 17th	..	6
Small-Pox—United States.			
Alabama, Hale County	November 14th	Present.	
Mobile	November 12th	1	
Colorado, Tionath	November 16th	5	
Virginia, Newport News	November 14th	1	
Small-Pox—Foreign.			
Belgium, Antwerp	October 22d to 29th	1	2
Brazil, Rio de Janeiro	September 2d to 30th	17	3
Rio de Janeiro	October 1st to 7th	12	7
Rio de Janeiro	October 7th to 14th	16	6
India, Bombay	October 11th to 18th.	..	1
Japan, Tokyo Fu	September 30th to October 20th.	1	
Awamori Ken	September 30th to October 20th.	29	5
Iwate Ken	September 30th to October 20th.	1	
Russia, Moscow	October 15th to 22d	7	3
Moscow	October 22d to 29th	11	5
Odessa	October 22d to 29th	13	1
St. Petersburg	October 22d to 29th	2	
Warsaw	October 22d to 29th	..	4
Straits Settlements, Singapore	September 1st to 30th	..	1
Uruguay, Montevideo	October 8th to 15th	2	
Cholera.			
India, Bombay	October 11th to 18th.	..	2
Calcutta	October 1st to 8th	..	2
Plague.			
China, Hongkong	September 24th to October 1st.	1	1
India, Bombay	October 11th to 18th.	..	150
Madras	October 8th to 14th	2	

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Original Articles.

THE PRETUBERCULOUS STAGE OF PHTHISIS, OR THE CONDITION WHICH ANTEDATES TUBERCULOUS DEVELOPMENT, AND SOME AIDS TO ITS DIAGNOSIS.[1]

BY HENRY P. LOOMIS, M.D.,

NEW YORK.

EVERY one who carefully analyzes the histories of cases of pulmonary tuberculosis must be impressed with the fact that, while the majority apparently start with local manifestations, a large number have exhibited for a longer or shorter time well-marked evidence of an antecedent morbid condition of the general system.

Naturally the first question which arises is, Does such antecedent condition exist with appreciable and unvarying symptoms? There are some who say that it does not exist with symptoms sufficiently constant to be of any positive diagnostic value, but for myself I feel so assured of its existence with these conditions, that I cannot overestimate the importance of determining and understanding as far as possible fixed signs and more or less reliable and constant manifestations, as of supreme importance to both the individual and the State, and it is therefore to the recognition of this pretuberculous stage as an important time of warning that I would specially call your attention.

For the sake of lucidity in the points which I would emphasize, I have assumed that there exists a stage or condition precedent to the initial development of tubercle and to the first appearance of appreciable signs of phthisis, this latter condition being known as "the incipient stage" of phthisis; the former condition may be called the "pretuberculous" stage, bearing somewhat the same relation to phthisis that transient albuminuria does to nephritis. It may be read as an important warning, or may be ignored as a morbid condition quite apart from danger of subsequent tuberculosis.

In examining recruits for the army, the examination is especially directed to detecting the least evidence of a liability to phthisis; yet statistics show that 7.2 per cent. of those in the French army, who have passed a most rigid examination on this point, subsequently developed phthisis; and in the German, Austrian, and United States armies the percentage is even higher.

The evidences of a vital condition which predisposes to the development of phthisis or actually marks the true pretuberculous stage may, for convenience, be grouped under the following heads:

I. Corpulence, or the relation of the weight of an individual, expressed in pounds, to his height, expressed in feet.

II. Chest condition.—1. Conformation of chest. 2. Chest measurement. 3. Vital capacity.

III. Constitutional condition.—1. Chloro-anæmia. 2. Digestive disturbances.

IV. Character of the pulse.

These heads should be considered in detail, as they are far from having the same absolute value, and their importance consists in the relation they bear to each other and to an abstract standard of normal health.

[1] Read before the American Climatological Association.

I. Corpulence.—The word corpulence has been introduced by French writers, with the definite meaning of the relation between the weight of an individual and his height, and in the same definite sense I use it now.

Progressive loss of weight, coming on without any apparent cause, such as loss of appetite or other indication of deranged nutrition, is in my opinion one of the most constant symptoms of the pretuberculous stage; in many cases it precedes for weeks or months the slight cough with no expectoration, which marks the actual beginning of a pulmonary change, suspected but often not recognized. Out of forty cases of phthisis which have come under my observation, and of which very complete records have been kept, fifty per cent. show this antecedent loss of flesh steadily increasing.

While the scales are used very generally in hospitals and sanitariums, it is seldom in private practice that use is made of them for this purpose, which I think is a grave mistake; for not only are they of great service in estimating how much below par is the nutritive condition of a patient, but they are of even greater value in determining how much a patient is improving under a given line of treatment. For it is so seldom as to be almost never that a tuberculous patient gains in weight without a corresponding improvement in his pulmonary condition. The actual weight of a person is of no help in estimating his nutritive condition, but the weight relative to the height, or his "corpulence," is of great importance. If this falls below a certain normal standard and remains so without any evident cause, the possibility of tuberculosis developing in those of suitable age is very great, if the disease has not already actually commenced.

The military standard of foreign armies recognizes this important sign, and no conscript is accepted whose corpulence falls below a normal standard. To weed out tuberculosis as far as possible is the object of this rule.

The corpulence of an individual is obtained by dividing his weight by his height; as, for example, take an average man of 5 feet 8 inches, whose weight is 150 pounds (military standard); his corpulence would be expressed thus:

$$\text{Corpulence} = \frac{\text{Weight, 150 lb.}}{\text{Height, 5' 8''}} = 26.47$$

or 26 as a standard. Any man whose corpulence falls below 23 should be considered abnormally thin. From investigations made by the writer he considers in this country 25 to be the normal standard, the foreign military standard of 26 being too high. While the normal corpulence of men has been settled by military standard, special investigations have been made by Bouchard to determine that of women. After a long series of studies he has found it to be 23; in any case where it goes below 21, a woman should be considered abnormally thin. In estimating the exact value of corpulence, it should be considered in connection with the "vital capacity" (or the thoracic perimeter divided by the height of the invididual). The following case will illustrate this:

Pretuberculous Condition with Chloro-anæmia.—Emma P——, housemaid, aged 18. One sister tuber-

culous at thirteen; patient has always been perfectly well, menstruated at fifteen.

First examination. Anæmic, suffers from dyspepsia; pulse, 99; weight, 104 pounds; height, 5 feet 2 inches; corpulence, 20; thoracic perimeter, 30 inches; pulmonary condition normal.

Second examination (one year later). Weight, 101 pounds; corpulence, 19; thoracic perimeter, 29 inches. Signs of beginning tuberculosis at right apex; arterial pressure, 5 inches of mercury.

II. Chest Conditions.—1. Conformation of the chest. There is no question that a large proportion of persons have chests which in their conformation differ widely from a normal standard, and this without in any way rendering them especially liable to tuberculosis. Many of these irregularities may be due to faulty positions assumed in childhood, or to the character of occupation in later life, as habitually leaning over a desk, etc. In a word, malformed and flat chests are not necessarily found in consumptives; still there is equally no question that there is a special chest conformation which is found in very many cases of phthisis, and which when present in the pretuberculous stage strongly predisposes to the development of the disease. This chest may be described as follows: Narrow in its anterior-posterior diameter, with wide intercostal spaces; the scapula prominent, with depressions of the supraspinous and infraspinous fossæ; also a subclavicular depression—in other words, a leanness and hollowness to the whole chest. Such a chest, when found in an individual presenting other symptoms suggestive of the pretuberculous stage, is an important link in the chain of evidence.

2. Chest measurement. More important than the shape of the chest are the data obtained by measuring the circumference of the chest; this can be done by use of a graduated tape, or, better, by a double tape (two ordinary tapes joined together), so that the commencement of each tape is in the centre of the double tape, which centre is placed over the spine. The tape should be carried around the chest on a level with the nipples; sometimes, especially in women, it should be carried around lower down opposite the ensiform cartilage. By having a double tape we can compare not only the mobility of the chest wall, but also the expansion of the two sides. It has been found that the two sides are unequal in their circumference in two-thirds of the persons examined. The right side is one-half inch or more larger than the left, but both lungs expand almost equally. The average circular measurement of the chest varies in man within normal limits, but it never should go below 35 inches.

The average of two measurements, taken at the same point—one at the moment of forced expiration (cough), the other at the end of a forced inspiration (deep sigh)—is the "thoracic perimeter." Investigations have shown that the most important point, in estimating the value of the chest measurements as a sign of the pretuberculous stage, is when the relation between the thoracic perimeter and the height is ascertained. This relation constitutes what the French call the "vigor of constitution" of an individual. French military surgeons first ascertained its importance, and its value does not seem to be appreciated in this country. The thoracic perimeter should never be lower than one-half the height of an individual.

I have examined a number of cases of early phthisis to ascertain the accuracy of this statement, and have found in a few cases this ratio kept; in most cases it fell below and in none rose above this standard. It seems, therefore, that the "vigor of constitution," ascertained by the means just indicated, may be an important help in diagnosing not only early phthisis, but the pretuberculous stage; this rule applies equally to women as to men.

3. Vital capacity. Hutchinson, the inventor of the spirometer, demonstrated by numerous experiments on respiration that in a healthy person there is a certain amount of so-called vital respiratory capacity, varying according to age, weight, and height. Normal persons should be able to exhale a certain cubic mass of air on a full inspiration succeeding a complete expiration. Vital capacity by itself is, in my opinion, only another very slight help in diagnosis, but when taken in connection with height it becomes an important aid.

The normal vital capacity for a man of 5 feet 8 inches is 230 cubic inches. In a number of patients of about 5 feet 8 inches in height, and in the early first stage of phthisis, I found the vital capacity averaged only 160 cubic inches. Personally I have found that the determination of vital capacity in its relation to height gives more accurate data in determining the pretuberculous stage and early phthisis than either corpulence, chest measurement, or chest conformation.

Any valuable use of the spirometer is largely a matter of education, patients having to be taught how to use it or the results obtained will not be reliable. The other disturbances of the respiratory organs beside tuberculosis which modify vital capacity—such as pleurisy, bronchitis, etc.—must not be forgotten, and the possibility of their presence in any given case must be thought of. Again, it is well to remember that if a slight increase in vital capacity appears during the treatment of early phthisis, it points toward a favorable prognosis. French investigators have established a boundary line between normal and subnormal vital capacity, which we may adopt with advantage.

The relation between height and vital capacity for the normal and healthy man is 1 to 3; for women, 1 to 2.6. That is, for each inch of height (man) there should be 3 cubic inches of vital capacity; when the proportion falls below this, we may infer a considerable disturbance in the respiratory capacity. For example, in a man of 5 feet 8 inches this vital capacity should not fall below 204 cubic inches. By way of illustrating the value of the inter-relation of corpulence, thoracic perimeter, and vital capacity in diagnosis, I quote three actual cases given by Dr. Papillon, of the Paris Hospital—three women of the same weight, 108 pounds, but whose corpulence and vital capacity differed to a marked degree.

Case I.—Woman, 5 feet 5 inches; weight, 108 pounds.

(*a*) Corpulence $= \frac{\text{Weight, 108 lb.}}{\text{Height, 5' 5''}} = 20$

(below normal).

(*b*) Thoracic perimeter = 31 inches (1½ inches less than half her height).

(*c*) Vital capacity = 122 cubic inches (47 cubic inches less than normal for a woman of this height; normal, 65 inches by 2.6).

Remarks.—In spite of this patient's apparently excellent appearance, she was in the early first stage of phthisis; her corpulence and thoracic perimeter were slightly below normal, but her vital capacity was much reduced.

Case II.—Woman, 5 feet 1 inch; weight, 108 pounds.

(*a*) Corpulence $= \frac{\text{Weight, 108 lb.}}{\text{Height, 5' 1''}} = 12 +$

(*b*) Thoracic perimeter = 31 inches (½ inch more than half her height).

(*c*) Vital capacity = 198 cubic inches (40 cubic inches above normal: normal, 158 +).

Remarks.—This woman in weight was apparently below normal, yet her vital capacity and thoracic perimeter were above normal, so we could consider that there was but slight danger from pulmonary complica-

tion. [Note: The case proved to be one of simple anæmia.]

Case III.—Woman, 4 feet 10 inches; weight, 108 pounds.

(*a*) Corpulence $= \frac{\text{Weight, 108 lb.}}{\text{Height, 4' 10''}} = 22$

(*b*) Thoracic perimeter = 31 inches (2 inches more than half her height).

(*c*) Vital capacity = 142 cubic inches (8 inches below normal; normal, 150 cubic inches).

Remarks.—This case was one of cured phthisis; the patient entered the hospital for rheumatism; while her corpulence and thoracic perimeter were up to normal or above, her vital capacity was, in proportion to her height, so slightly out of ratio as to be virtually normal.

These three cases are interesting as showing how little value mere weight has as a determining quality, unless taken in relation to height and to thoracic perimeter. The thoracic perimeter, almost identical in these cases, changes its significance completely when considered in relation to height, being less than one-half the height in the early tuberculous case, and above the half height in the other two.

The following cases of persons who have recovered from phthisis illustrate the return of corpulence and thoracic perimeter to a normal standard:

MALES.

Normal Corpulence Not Below 23; Thoracic Perimeter Not Less than Half the Height.

Case.	Weight	Height. Feet.	Inches.	Corpulence.	Thoracic Perimeter.	Normal Thoracic Perimeter for Individual.
1	148	5	11	25	35¼	35
2	152	5	8	26+	35½	34
3	137	5	7	24+	34½	33½
4	136	5	5	25	33¾	32½
5	144	5	8	25	35½	34
6	139	5	7	25	33	33

FEMALES.

Normal Corpulence Not Below 21; Thoracic Perimeter Above Half Height.

Case.	Weight.	Height. Feet.	Inches.	Corpulence.	Thoracic Perimeter.	Normal Thoracic Perimeter for Individual.
1	118	5	3	22	31	31
2	136	5	5½	25	31¾	32
3	135	5	6	24+	31¼	32
4	119	5	2	22+	31½	30
5	101	4	9	21+	29¼	28½
6	108	5	3	20½	31+	31

III. Constitutional Condition.—1. Chloro-anæmia. Many believe that there is an actual antagonism between the two conditions of chlorosis and tuberculosis. Haplin, who has investigated this subject, states that in forty cases of true chlorosis in tuberculous families which have come under his observation, only two subsequently became tuberculous. Many believe otherwise, and consider certain chloro-anæmics to be well on the road to tuberculosis, and when once tuberculosis has set in the chlorotic state darkens the prognosis. They point out that while the anti-anæmic treatment by iron benefits pure anæmics, it gives only negative results in cases having a tendency to phthisis.

The writer's personal experience has led him to believe that chloro-anæmia is often one of the most pronounced symptoms of the pretuberculous stage of phthisis, especially when taken in connection with loss of weight without cause and poor chest development. I believe that an unexplained chloro-anæmia in young men should always make us suspicious of tuberculosis. In young girls this symptom is not so important, for from their manner of life and physical condition they are specially subject to true anæmia; in fact, I feel one should view chlorotics who grow thin without a cause with grave suspicion. Their corpulence should be ascertained at regular intervals, while rest, fresh air, nutritious food, and appropriate tonics should be at once ordered. In chloro-anæmics, besides loss of weight, thinness of the chest is a bad sign and suggests liability to development of tuberculosis. True chlorotics, as we know, show slight, if any, loss of adipose tissue, and the chest development meets normal requirements. Clinical examinations of the blood have been made, especially in France, during the last few years, to ascertain if there be any characteristic change there which marks the pretuberculous stage, and also what is the condition of the blood found in the very early stages of incipient phthisis. There is a good deal of variation in the conclusions reached, but most authors agree that the hæmoglobin is diminished out of all proportion to the loss in the number of red corpuscles. Henocque concludes, after a long series of investigations, that tuberculous chloro-anæmia is characterized by one thing, viz., "the diminution of the oxyhæmoglobin in the blood." Laache says that in his cases he found the red cells diminished twelve per cent. on an average, while the hæmoglobin has reached a loss of twenty-nine per cent.

My observations so far. cannot lead me to indorse these statements, for while I have had but a limited experience in examining the blood of persons whom I considered in the pretuberculous stage of phthisis, yet of those in the earliest recognizable stages I have examined a number. These examinations tend to show that when the disease is established nothing characteristic is found in the blood, unless we consider as characteristic the absence of microscopical evidences of anæmia, such as the pallor of the patient would suggest. The following report of the blood examination of twelve persons undertaken under my direction at the very beginning of phthisis may be interesting in this connection. (See table on page 832.)

Conclusions.—(1) The numbers of red blood corpuscles and the percentage of hæmoglobin were well within normal limits, and there was no evidence of such anæmia as one would expect from the pallor of some of the patients.

(2) The red blood cells were well nourished and of normal development. This is opposed to the condition found in chlorosis, and could be considered as a point of differential diagnosis.

(3) Leucocytosis was present in only two cases. The increased percentage of young cells (large and small lymphocytes) was only such as may be found in any blood poor in nutritive qualities.

(4) Absence of basophiles in half the cases (Neusser claims that when found they indicate that the system is capable of resisting tuberculosis and so warrants a favorable prognosis).

(5) There was nothing characteristic in the blood. All variations noted were within accepted physiological limits.

2. Digestive disturbances. All must have noticed how often disorders of the digestive system usher in the earliest stage of phthisis, but have we noted how many of those cases affected with this disease have suffered for months or even years with dyspepsia in some form? What is this relationship between digestive disorders and phthisis? Are these disorders cause or result? Are they symptomatic of the invasion of the tissue by the bacilli, or are they symptomatic of the tissues undergoing changes lessening their power of resistance to the inroad of the microbe? I believe that digestive disorders precede the deposition of tubercles in the lungs in many cases. Numerous cases that have come under my observation ap-

pear to prove this statement; nine out of forty cases of phthisis, of which I have complete records of antecedent conditions, showed continued digestive disturbances extending over months or even years before the disease was recognized by physical signs. Digestive disorders which cannot be permanently corrected at the tuberculous period of life are often a symptom of the pretuberculous stage of phthisis. The lesson we should learn is not to overlook the possibility of tuberculosis in those cases which superficial inquiry would classify as cases of "indigestion" simply. This "indigestion" is sufficiently often the forerunner of phthisis to put us on our guard.

IV. Character of the Pulse.—The character of the pulse in establishing the early diagnosis of phthisis, and as one marked symptom of the pretuberculous and very early stage of the disease, is, in my opinion, important. Only in the last few years has any attention been paid to these indications of the pulse. Since my attention was called to the matter by a paper of Dr. Wells, of Chicago, written in 1895, I have been surprised to note how characteristic and constant is the pulse of this condition, and it has led me to suspect tuberculosis in several cases weeks before the physical signs appeared. It has been claimed that the reason this pulse has been overlooked by clinicians is that it is found only at the very beginning of phthisis and in the pretuberculous stage, and disappears early in the disease. This pulse has two characteristics:

1. Change in position of the patient has but little influence on its rhythm. To ascertain whether this is so in a given case, the patient must be examined several hours after eating and when free from excitement. Ordinarily the pulse varies about fifteen beats in a healthy man on change of position.

2. Relative feebleness of arterial pressure. This characteristic of the pulse, suggested by Dr. Wells and confirmed by the French investigators, is believed by them to be an important element in diagnosis. They found that, instead of the arterial pressure being 15 to 18 cm. of mercury, as in the healthy man, it was always less than 13 cm., sometimes even as low as 10 cm. In pulmonary tuberculosis they also found that in those few cases of normal or excessive arterial pressure there was some other condition associated with the tuberculosis, such as nephritis, to account for the increase. If this were true only in the advanced stages of tuberculosis, it would not be of any diagnostic value; but it was also found in the pretuberculous and very early stage—in one case where physical signs did not appear for nearly two years later. This lessening of arterial pressure must certainly put the organism in a state of microbic receptivity. We should be especially anxious in cases of anæmia with feeble arterial pressure. The pulse of this lowered arterial pressure yields a peculiar sensation, somewhat suggesting the "Corrigan" pulse, being tense, jerky, and hurried, seldom beating less than 100 per minute, often 110 to 120. In the early stage of phthisis we also note a non-concordance which often occurs between the acceleration of the pulse and the rise of temperature. I have personally confirmed these characteristics of the pulse as just described, and I bring them before you as well worthy of further study.

Dr. Andvord has just published a very interesting article on "Latent Tuberculosis and the Pulse of the Tuberculous," in which he claims that the pulse tracings of this condition are characteristic, viz., there is

Report of the Examination of the Blood of Twelve Cases in the Incipient Stage of Phthisis.[1]

Number.	Name.	Age.	Hæmoglobin. Per Cent.	Red Blood Cells.	Leucocytes.	Ratio to Red Blood Cells.	Color Index.	Neutrophiles. Per Cent.	Myelocytes.	Lymphocytes. Per Cent.		Eosinophiles. Per Cent.	Transition Forms.	Basophiles. Per Cent.	Remarks.
										Small.	Large.				
1	Wm. M.	33	100	3,992,000	10,712	1.37	1.25	67	1.2	16	8	3.75	4.3	-	
2	Anna S.	18	95	4,215,600	8,170	1.51	1.12	57	1.4	14	19	1.0	1.4		
3	Thos. K.	30	102	5,900,000	9,021	1.65	.91	53	2.5	18	10	1.5	5.	1.	
4	Wm. Mc.	27	101	4,354,400	3,126	1.13	1.15	72	1.5	17	7	1.5	2.5	...	Microcytes, macrocytes.
5	Chas. B.	28	75	6,200,000	33,000	1.18	.54	81	.5	10	6	1.2	1.		
6	Ed. H.	19	90	5,800,000	8,264	1.12	.59	55	.8	3	8	1.3	.9	.4	
7	Jas. C.	34	80	3,744,000	3,744	1.10	1.00	78	3.4	11	5	1.6	1.7	.6	Plaques, poikilocytes.
8	Mary G.	35	92	4,436,000	10,013	1.45	....	58	2.2	28	10	....	.9		
6	John R.	36	87	4,296,000	6,000	1.71	1.01	68	2.	20	6	1.6	3.		
10	Anna G.	31	100	5,112,000	38,149	1.13	....	70	4.3	11	6	.3	2.4	.5	
11	Douglas S.	27	88	3,506,000	4,802	1.73	.64	61	4.6	25	6	.6	6.6	.6	Neutrophiles very granular.
12	Bertha H.	20	66	5,170,000	10,000	1.51	.61	76	1.1	16	3	3.3	5.7	.2	
	Average		89	4,727,166	12,111	1.390	.91	67	2.3	18	8	1.6	2.9	.55	
	Normal standard for comparison.....			4½–5 millions.	7,500	....	1.	62–70	2–3	20–30	4–8	½–4			

a suddenness of the ascent and descent of the curve. He also noted that as a person recovered from phthisis the pulse curve came down more nearly to normal. He was unable to find any characteristic tracings in the pretuberculous stage.

Summary.—1. It is possible in many cases, especially in chloro-anæmics, to diagnose phthisis previous to the appearance of physical signs or of tubercle bacilli in the sputum.

2. Weight, respiratory capacity, and chest measurement have no value in establishing the possibilities of the development of phthisis in themselves, but must be considered in relation to the height of the person, when they furnish three important aids to diagnosis.

3. Corpulence is obtained by dividing the weight expressed in pounds by the height expressed in feet (in a normal man this should be 26; in a woman, 23).

4. Thoracic perimeter is found by taking two measurements of the circumference of the chest—one at the moment of forced expiration, the other at the end of a forced inspiration. The average of these two measurements should never be less than half the height.

5. Vital capacity is the amount of air expressed in cubic inches which can be exhaled after a full inspiration. Normally it should bear the relation to the height of 3 to 1 for a man and 2 to 1 for a woman (*i.e.*,

[1] The specimens of the blood from the cases were taken about three hours after a meal and as nearly as possible under the same conditions. Tubercle bacilli were found in the sputum of all the cases.

for every inch of height there should be 3 cubic inches of vital capacity).

6. Chloro-anæmia and persistent and unexplained disturbances of the digestive system are symptoms of the pretuberculous stage of phthisis.

7. There are two characteristics of the pulse found in the pretuberculous and early stage of phthisis: (*a*) Change of position has practically no influence on its rhythm; (*b*) relative feebleness of arterial pressure.

A PRELIMINARY REPORT FROM CLINICAL OBSERVATIONS OF THE SUCCESSFUL REDUCTION OF SUGAR IN THE URINE AND AN ABEYANCE OF THE PATHOLOGICAL SYMPTOMS IN DIABETES MELLITUS.[1]

By ABRAHAM MAYER, M.D.,
NEW YORK.

Mr. Chairman and Gentlemen: I offer for your consideration this evening a preliminary report of clinical observations I have made in the reduction of sugar in the urine of patients suffering from diabetes mellitus, and an abeyance of all of its concomitant symptoms by the administration of a drug well known to all of us.

The results are so marvellous that were they obtained in only a single case you would perhaps hesitate to believe in the efficacy of the remedy; but as they are the same in all of the eleven cases experimented upon, as I will show, there can be no denying that *post hoc propter hoc* in the application of this remedy is a positive fact.

I have not completed all the experimental work, and have not elaborated all the scientific facts as to the physiological action of the remedy in this disease, as such takes and entails a great deal of time and an enormous amount of experimental research, which up to the present I have not had. My observations date back over the past six months, and during this short time the clinical results have been so positive that I feel justified in reporting them to the profession. For this reason I ask an apology for the incomplete scientific researches brought out in this paper, and offer it to you, as my title reads, only as "a preliminary report of the successful reduction of sugar in the urine and the subsidence of the pathological symptoms in diabetes mellitus." These observations are all clinical. The time has been too limited for the assurance of a positive cure, and I can only add that if the results continue as they have been so far in all of my cases, we have a remedy in our hands that has exceeded all other therapeutic measures.

To go into the physiology and pathology of sugar excretion is beyond the scope of this paper. You know there are theories upon theories as to the production of glycosuria, and to give a description of each would entail volumes. There are a few points, however, to which I wish to call your attention. It is well known that the liver is not the only organ which stores up glycogen, but muscle cells and glands likewise possess this property. As the organism requires it, these glycogen reservoirs are called upon to replete the sugar which has been used up. In this way in health the blood contains a fairly constant quantity of sugar. In diabetes mellitus the glycogen from these reservoirs is converted more or less rapidly into grape sugar, which enters the blood, producing a hyperglycæmia, and hence a glycosuria.

Some observers, like von Noorden, believe that in diabetes mellitus the capacity for burning up grape sugar circulating in the blood is morbidly depressed. Hence comes its rapid excretion by the kidneys.

[1] Read before the Metropolitan Medical Society, on November 22, 1898.

Again, after complete extirpation of the pancreas true diabetes mellitus ensues. The experiments of von Mering and Minkowski on animals in which this was done led them to formulate the following theory: Either there accumulates in the organism after pancreas extirpation some substance which has an injurious effect on the conversion of carbohydrates; or there accumulates after this operation some substance, or some function is abolished, which in the normal condition serves to facilitate the conversion of carbohydrates.

Others again, like Lenné, believe in a derangement of a metabolic function of the organism, in consequence of which the power to convert and assimilate carbohydrates in a normal way is more or less lost. This derangement of a metabolic function depends on an alteration of certain nervous elements (trophic nerve centres).

Lepine, of Lyons, does not deny the influence of the nervous system in the causation of an increased sugar production. As regards experimental pancreatic diabetes, Lepine believes that the pancreas produces a glycolytic ferment, which enters the circulation and destroys the grape-sugar molecule within the blood or in the tissues.

As the most careful examinations of the brain, pancreas, liver, and other organs in a great many cases fail to reveal any pathological change to which importance can be attached, and also no history of any supposed exciting cause as being an etiological factor; and there being such a diversity of opinion as to the causative factors in the production of this disease, and not one explaining all the pathological phenomena connected with it—my experiments and observations led me to reason that a bacterium or its ptomain may be the chief factor in its production.

Indeed, only recently attention has been called to the contagiousness of diabetes mellitus by Ledieu, Naunyn, and others.

Diabetes mellitus, then, according to my theory, is the result of the pernicious influence of a specific bacterium or its ptomain in the organism, acting centrally on certain brain centres or peripherally on the glycogenic reservoirs.

The nervous system exercises a controlling influence on the normal production of sugar in the body. If from any cause, such as traumatism, neoplasm, continued worry or mental strain, poisons, etc., this controlling influence be impaired or abolished, the bacteria and their ptomains exert their deleterious influence.

My theory supposes the invasion of the organism by these bacteria, or their presence in it. In perfect health they are prevented from exercising their injurious influence by the normal resistance of the economy, or perhaps by some ferment physiologically produced by metabolic changes in certain organs of the body acting as an antitoxin against these bacteria.

If this presumption be correct, then the ingestion of a suitable bactericide in sufficient quantity to counteract the effect of this bacterium should manifestly show an amelioration of the pathological symptoms of diabetes mellitus.

After repeated experimentation I am able to report that the bichloride of mercury in suitable doses fulfils this indication.

My method of treating these cases is as follows: A history of the case is obtained and the patient weighed. The quantity of urine passed in twenty-four hours is collected, measured, the specific gravity taken, quantity of sugar estimated, and other abnormal characteristics are noted. If the urine fails to react to Gerhardt's test, the patient is then put on an antidiabetic diet for two weeks, during which time he takes the bichloride. I begin with a dose of one-twelfth of a grain three times a day, and in two or three days increase it to

one-tenth or one-eighth of a grain. In a week's time my patient is taking one-sixth of a grain three times a day, directly after meals, well diluted with water. This is the maximum dose. None of the symptoms of mercury poisoning showed themselves in any of my cases. A rather brisk catharsis takes place the first few days, especially if the patient previously suffered from constipation; and this diarrhœa I regard as favorable. At the end of two or three weeks my patients have shown a marked reduction of sugar and a decided improvement in their general condition. As soon as I have obtained this result, the dose of mercury is diminished until about one-fourth of a grain in divided doses is taken daily. Or I may still further reduce the dose. (The diet now is not so severely restricted.) A little bread and a tart apple are permitted.

The urine is examined daily or every other day for the first two or three weeks; that voided in the evening being tested.

As the percentage of sugar diminishes, the dose of bichloride is decreased accordingly and the diet is not so strongly restricted. From time to time the drug is suspended. Even though the sugar has entirely disappeared, I continue to give the bichloride, but in much smaller dose, about one-sixteenth of a grain three times a day.

Diabetics with syphilitic history are not included in this report. But I wish to mention that diabetic patients with a history of lues showed a more marked and rapid improvement under the mercurial treatment.

The following table (page 835), with a short *résumé* of each case, shows the efficacy of this method of treatment. In this table by restricted diet is meant a regimen in which all carbohydrates are excluded; by a mixed diet, that a limited amount of starchy food is allowed, such as wheaten bread.

Case I.—Mrs. M. W——, aged sixty years, has had diabetes mellitus since 1893, when the first symptoms showed themselves; she weighed one hundred and ninety-four pounds at that time. The disease began with severe itching of the genitals and the entire body, rapid emaciation, loss of appetite and sleep. These were the first symptoms noticed. All known remedies with a rigid diet had no marked effect. She began the bichloride treatment on June 20, 1898, when her urine contained 3.15 per cent. of sugar. She passed sixteen pints of urine daily. At the end of ten days the amount of sugar was reduced to 2 per cent., and the quantity of urine passed was five pints daily. Bichloride treatment was now suspended for one week, to be again continued at the end of that time in diminished doses of one-twelfth grain three times a day. On August 20th she had less than 1 per cent. of sugar, and passed only four and one-half pints of urine in twenty-four hours. She felt much stronger; there was no itching, the thirst had disappeared, and she had gained two pounds in weight. On October 11th she was entirely free from sugar and has remained so since, notwithstanding that treatment has been discontinued from time to time. A little bread was allowed during the latter part of the treatment.

Case II.—The patient had history of gall stones; he had great thirst, but no polyuria; he perspires very freely and suffers from headache; is constipated. He had been under treatment for four years without any alleviation. He began mercurial treatment, June 22, 1898. The urine then contained 3.25 per cent. sugar; six pints were passed. There was very marked improvement at the end of two weeks. The amount of sugar, July 1st, was 1.65 per cent., or about half what it was when he began treatment. In four months he gained fifteen pounds. On November 4th the gain was twenty pounds. Sugar amounted to only 0.3 per cent.; the patient passed four pints of urine daily, and felt as well as ever. He takes bichloride, one-sixteenth grain, twice daily.

Case III.—Mr. J. F——, aged fifty-five years; his was a very severe case. Acetone was present. The patient was haggard and morose. The disease began about seven years ago, with great thirst and severe pruritus. There was marked polyphagia. He lost weight gradually. Bichloride treatment was begun, June 25, 1898, with very bad effect. He had then 3.65 per cent. sugar, and passed eight pints of urine daily; specific gravity, 1.025. There were diarrhœa and rapid loss of strength. I was forced to give a smaller dose—one-thirtieth grain every four hours. This patient caused me much anxiety, for while the sugar diminished after treatment, the loss of strength and emaciation continued. A diarrhœa complicated the situation, and an acute lobar pneumonia of the left side developed on August 1st. Nevertheless the mercury was continued in the above-mentioned dose, but had to be suspended from time to time for a few days. Resolution was very slow. Then followed great prostration and loss of appetite. The percentage of sugar increased during the attack of pneumonia, but as the patient got well it rapidly diminished to less than 1 per cent. On October 17th he was entirely free from sugar and felt stronger and more cheerful. During all this time he had been taking bichloride, lately in larger doses. November 12th, there was no sugar at all and no trace of albumin.

Case IV.—C. H. A——, aged fifty-seven. This was a very interesting case. The patient was morose and hypochondriacal. He had large percentage of sugar, 5.15; specific gravity, 1.030; he passed sixteen pints of urine on June 20th, the first day of the bichloride treatment. Examination of urine showed acetone; hence carbohydrates were not excluded from his diet. He suffered from great weakness. In two weeks he had gained three pounds; the percentage of sugar was reduced to less than half, no acetone; he was cheerful and bright. The following three months he gained eleven pounds in weight. September 16th, sugar was 1.15 per cent., and bichloride treatment was discontinued for a time. November 17th, the gain was sixteen pounds; sugar, 1 per cent.; he passed four and one-half pints of urine every twenty-four hours. He eats some bread with each meal. As there is still 1 per cent. of sugar present, the patient is put on one-sixteenth grain bichloride three times a day.

Case V.—R. L——, aged forty-seven, came under observation April 3, 1898. There were great thirst, weakness, and severe gastric pain amounting to crisis; there were severe constipation and disturbed sleep. He passed fourteen pints of urine a day; specific gravity, 1.025; sugar, 2.65 per cent.; no albumin. From April 3d to July 1st, there was no improvement. July 1st, I began bichloride treatment. April 10th, he passed but six pints of urine; specific gravity, 1.022; sugar, 1.3 per cent.; his general condition was so much improved that a small quantity of bread was allowed at each meal. By this time he was taking one-twelfth grain of bichloride three times a day. September 15th, there was continued improvement; sugar, 0.65 per cent.; four pints of urine were passed daily. October 24th, there was no sugar nor albumin; specific gravity, 1.020; three and one-half pints of urine were voided this day. Bichloride reduced to one-sixteenth grain three times a day. November 12th, there was no sugar; specific gravity, 1.020; four pints of urine were passed; he has gained since July 1st seven pounds in weight and feels absolutely well and is very happy.

Case VI.—Mr. S——, aged forty-eight, an analytical chemist; his was a mild case. The patient came under observation, June 21st, because he had been refused by a life insurance company. His urine contained about 1 per cent. sugar. He had been losing flesh at the rate

of one pound a week for the past six months. He was put under a restricted diet and one-tenth grain bichloride three times a day. July 21st, there was 67 per cent. of sugar. Diet was still restricted. September 1st, the urine contained sugar, 0.2 per cent.; specific gravity, 1.020; he passed three pints daily. The patient was allowed mixed diet. He had not lost weight since treatment began. On October 12th, there was no sugar. The patient this morning ingested three ounces of white sugar as a test. Examination of the evening urine that day showed absolutely no sugar.

CASE VII.—J. K——, aged fifty-four, has had diabetes for seven years, and had been under observation for quite a long time before commencing specific treat-

Number.	Date.	Name.	Age.	Duration of Disease.	Began Mercury Treatment.	Quantity of Urine in 24 Hours. Estimated.	Specific Gravity.	Sugar Polarization.	Albumin.	Weight in Pounds.	Diet.	Remarks.
1	1898, June 20th.	Mrs. M. W.	60	5 years...	June 20th.	16 pints.	1.026	3.15	Yes...	146	Restricted....	Maximum weight 194 pounds in 1893. Severe itching over entire body. Very weak. Loss of appetite and sleep.
	July 1st.	.....	..	.....	.....	5 "	1.020	2.00	"	....	Some bread...	No itching. Sleeps from 10 P.M. to 4 A.M. No treatment for one week.
	Aug. 20th.	.....	..	.....	.....	4½ "	1.020	.95	"	148	Mixed.....	Feels much stronger. Sleeps all night.
	Sept. 13th.	.....	..	.....	.....	4 "	1.028	.20	Trace.	....	"	Gains weight.
	Oct. 11th.	.....	..	.....	.....	4½ "	1.016	.00	"	149	"	Treatment discontinued.
2	1898, June 22d.	J. H.....	62	4 years...	June 22d...	6 pints.	1.032	3.25	No....	175	Restricted....	Maximum weight in 1894 was 210 pounds. Began with great thirst and sleeplessness; loss of strength.
	July 1st.	.....	..	.....	.....	5 "	1.026	1.65	....	....	Mixed.....	
	Oct. 14th.	.....	..	.....	.....	4 "	1.025	.8	....	....	"	Is gaining weight.
	Oct. 19th.	.....	..	.....	.....	3½ "	1.024	.3	....	190	"	Stronger. No thirst. Sleeps well all night.
	Nov. 4th.	.....	..	.....	.....	4 "	1.020	.3	....	195	"	Feels as well as ever.
3	1898, June 25th.	J. F.	55	8 years...	June 25th.	8 pints.	1.025	3.65	No....	170	Mixed.....	Acetone in breath. Had been under treatment in various ways for seven years. Maximum weight, 2 5 pounds.
	July 25th.	.....	..	.....	.....	.....	1.026	2.60	" ...	165	"	Great weakness. Rapid emaciation.
	Aug. 1st.	.....	..	.....	.....	5 "	1.030	3.15	Trace	....	"	Developed acute lobar pneumonia.
	Sept. 13th.	.....	..	.....	.....	4 "	1.018	.85	"	162	"	Recovered from above. Great weakness. Keeps his bed.
	Oct. 17th.	.....	..	.....	.....	4¼ "	1.015	.00	No....	....	"	Feels stronger. Sits on chair.
	Nov. 12th.	.....	..	.....	.....	4 "	1.020	.00	" ...	165	"	Is able to walk about.
4	1898, June 20th.	C. H. A ...	57	7½ years.	June 25th.	16 pints	1.030	5.15	No....	142	Is allowed some bread.	Unable to work. Acetone present in urine. Great weakness. Despondency.
	July 1st.	.....	..	.....	.....	6 "	1.025	2.25	" ...	145	"	No acetone
	July 15th.	.....	..	.....	.....	5¾ "	1.024	1.6	" ...	148	"	Much brighter. Works again. Treatment suspended.
						4½ "	1.023	1.15	" ...	153	"	Feels as well as ever.
						4¼ "	1.024	1.0	" ...	158	More liberal allowance.	As there is still one per cent. sugar present in urine, patient is put on mercury treatment again.
5	1898, April 3d.	R. L.....	47	2½ years.	July 1st....	14 pints.	1.025	2.65	No ...	165	Restricted....	Great thirst. Weakness. Gastric pains. Constipation. Disturbed sleep.
	July 1st.	.....	..	.....	.....	15 "	1.025	2.65	" ...	163	"	Same.
	Aug. 10th.	.....	..	.....	.....	6 "	1.022	1.33	" ...	165	Mixed.....	Marked improvement.
	Sept. 15th.	.....	..	.....	.....	4 "	1.020	.65	" ...	167	"	Continual improvement.
	Oct. 22d.	.....	..	.....	.....	3½ "	1.020	.00	" ...	167	"	Mercury reduced to one-sixteenth grain after meals.
	Nov. 12th.	.....	..	.....	.....	4 "	1.020	.00	" ...	170	"	Feels absolutely well.
6	1897, Dec. 26th.	R. S.	48	1 year ...	June 21st..	3 pints (?)	1.024	1.00	No....	158	Restricted	Mild case.
	1898, July 21st.	.....	..	.....	.....	3 "	1.022	.67	" ...	158	"	
	Sept. 1st.	.....	..	.....	.....	3 "	1.020	.20	" ...	158	Mixed.....	
	Oct. 12th.	.....	..	.....	.....	3 "	1.020	.00	" ...	158	"	Test with ingestion of three ounces of sugar in the morning, gave absolute negative result in urine of same night.
7	1898, July 15th.	J. K.....	54	7 years...	July 15th ..	5 pints.	1.024	1.65	No....	159	Mixed..	Old case in which diet has great influence in reducing per cent. of sugar. Complains of thirst and weakness.
	Oct. 5th.	.....	..	.....	.....	4 "	1 020	.40	" ...	161	"	Marked improvement.
	Nov. 4th.	.....	..	.....	.....	4 "	1.020	.00	" ...	161	"	Feels perfectly well again.
	Nov. 20th.	.....	..	.....	.....	3½ "	1.020	.00	" . .	162	"	Bichloride, grain one-sixteenth, three times daily.
8	1898, Sept. 29th.	A. P.....	62	5 years...	Sept. 29th.	12 pints	1.036	4.1	No....	173	Restricted.....	Weighed 197 pounds six weeks ago. Great emaciation. Thirst. Itching. Continuous headache. Great weakness, languor.
	Oct. 6th.	.....	..	.....	.....	5 "	1.024	2.75	" ...	173	"	Less thirst. No headache. More cheerful.
	Oct. 14th.	.....	..	.....	.....	4 "	1.018	.75	" ...	173	Mixed.....	Much stronger. Treatment suspended for one week.
	Oct. 27th.	.....	..	.....	.....	4½ "	1.020	.20	" ...	173	"	Takes bichloride, grain one-sixteenth, three times daily.
	Nov. 5th.	.....	..	.....	.....	3½ "	1.020	.20	" ...	173	"	Much better condition.
	Nov. 21st.	.....	..	.....	.....	3½ "	1.020	.00	" ...	173	"	No gain in weight, but feels well though still weak.
9	1898, Oct. 2d.	H. G.....	55	4 years...	Oct. 2d	29 pints.	1.028	5.5	Yes...	199	To eat some bread!	Excessive thirst; used to drink five gallons water daily, and frequently passed forty pints urine in twenty-four hours. Great thirst. Acetone in urine. Great weakness. Mercury stopped thirst at once.
	Oct. 9th.	.....	..	.....	.....	6 "	1.023	3.5	"	197	"	Much better. No acetone in urine.
	Oct. 23d.	.....	..	.....	.....	5 "	1.025	4.10	Trace.	196	"	Had discontinued the bichloride for eight days; now taking one-tenth grain three times daily again, to be increased to one-sixth grain.
	Nov. 6th.	.....	..	.....	.....	4½ "	1.021	2.6	"	197	"	Feels much better.
	Nov. 20th.	.....	..	.....	.....	3½ "	1.020	1.3	No....	199	"	From impotency of more than two years' duration to restored manhood! Abeyance of all symptoms.
10	1898, Sept. 13th.	S. P.	68	4 years...	Sept. 13th.	10 pints.	1.030	4 00	No....	140	Restricted	Very rapid improvement under bichloride treatment.
	Oct. 13th.	.....	..	.....	.....	4¾ "	1.024	1.65	" ...	142	"	
	Nov. 9th.	.....	..	.....	.....	4 "	1.020	.00	" ...	144	Mixed.	
	Nov. 14th.	.....	..	.....	.....	3½ "	1.020	.00	" ...	144	"	
11	1898, Oct. 12th.	M. G.....	23	3 years...	Oct. 12th...	17 pints.	1.035	5.00	No....	140	Restricted....	Maximum weight, 180 pounds. Great thirst. Has never had less than two per cent. sugar while under treatment.
	Oct. 16th.	.....	..	.....	.....	16 "	1.032	4.50	" ...	140	"	No improvement.
	Nov. 3d.	.....	..	.....	.....	10 "	1.028	2.95	" ...	140		Treatment discontinued for a few days. Improvement marked.
	Nov. 16th.	.....	..	.....	.....	6 "	1.024	.80	" ...	150		Says he never felt better.

ment. Diet had a great influence in reducing the amount of sugar, which at times rose to 4 or 5 per cent. He had been under arsenical treatment for some weeks prior to July 13th, when I began with one-sixteenth grain of bichloride. At that time he was passing five pints of urine; specific gravity, 1.024; sugar, 1.65 per cent. He complained of inordinate perspiration, great thirst, and weakness. On October 5th he had but 0.4 per cent. sugar, absolutely no thirst, and passed about four pints of urine daily. There was marked improvement in his entire condition. November 4th, the urine contains no sugar; specific gravity, 1.020; the patient passes four pints of urine; he has no thirst, no diuresis, no diaphoresis. He has gained over two pounds, and feels perfectly well again. He takes bichloride, one-sixteenth grain, three times daily.

Case VIII.—A. P——, aged sixty-two; a most remarkable case, showing very rapid improvement; he has had the disease five years. He came under observation the first time, September 29, 1898, at which time he passed twelve pints of urine; specific gravity, 1.036; 4.1 per cent. sugar; no albumin. He weighs one hundred and seventy-four pounds, a loss of twenty-four pounds in six weeks. There were great and rapid emaciation, extreme thirst, severe itching, continuous headache, great weakness and languor. Gerhardt's test failed to reveal diacetic acid; no acetone present. I began with one-twelfth grain of bichloride and rapidly increased to one-sixth grain three times a day. October 6th, passed five pints of urine; specific gravity, 1.024; 2.75 per cent. sugar. He had less thirst, no headache, was more cheerful, though still very weak. October 14th, he passed four pints of urine; specific gravity, 1.018; 0.75 per cent. sugar; he has increased two pounds in weight. Mixed diet was prescribed; he feels a little stronger; treatment was ordered to be suspended for one week. October 27th, four and one-half pints of urine were passed; specific gravity, 1.020; 0.2 per cent. sugar. He has again increased two pounds, and is taking bichloride, one-sixteenth grain, three times a day. November 5th, he passed three and one-half pints of urine; specific gravity, 1.020; 0.2 per cent. sugar; he has gained five pounds since September 29th. November 21st, there was absolutely no sugar; specific gravity, 1 020; he feels very much better. Mercury was continued.

Case IX.—H. G——, aged fifty five; a very unique case, because the patient had been impotent for nearly three years After seven weeks of treatment, there was not only a reduction of sugar from 5.5 to 1.3 per cent., from passing twenty-nine pints to three and one-half pints of urine daily, with an abeyance of the most severe symptoms—such as great thirst, great weakness, and acetone in urine—but also a change from a condition of impotence to one of restored manhood. This case may demonstrate the contagiousness of this disease, for this man's wife has had diabetes for quite a number of years, and, as far as I can find, the most rigid examination to which I have subjected him fails to reveal the presence of disease in any of the organs to which this affection has been attributed.

Case X.—S. P——, aged sixty-eight, has had the disease four years, and showed very rapid improvement under bichloride treatment. He commenced treatment, September 13th, on which day he passed ten pints of urine; specific gravity, 1.030; 4 per cent. of sugar; no albumin. I began with one-twelfth grain of bichloride three times a day. October 13th, four and three-fourths pints of urine were passed; specific gravity, 1.024; sugar, 1.65 per cent. The patient gained two pounds in weight. November 9th, he passed four pints, specific gravity, 1.020; no sugar, no albumin; he has added two pounds more to his weight. I now allow him a little bread three times a day. November 16th, he passed three and one-half pints of urine; specific gravity, 1.024; no sugar. There was marked improvement in the general condition.

Case XI.—M. G——, aged thirty-two. This was a very serious case in a rather young individual. The disease was first noticed three years ago. He came under observation the first time on October 12th, on which day he passed seventeen pints of urine; specific gravity, 1.035; 5 per cent. of sugar; no albumin. He weighs one hundred and forty pounds. I ordered restricted diet and bichloride, which was run up to one-sixth grain three times a day. On November 3d he passed ten pints; specific gravity, 1.028; 2.95 per cent. sugar. He has increased eight pounds in weight. November 16th, he passed six pints of urine; specific gravity, 1.024; 0.8 per cent. sugar. He weighs now one hundred and fifty pounds, and says he never felt better. He still takes bichloride, one-sixteenth grain, three times daily.

Mr. Chairman and gentlemen, from the results of the treatment in the cases just cited, I feel justified in claiming for this drug a specific action in the reduction of sugar in diabetes mellitus. As the treatment and observations have not extended over sufficient time, I do not as yet feel warranted in claiming a positive cure of this disease. But as the results thus far have been so favorable, I see no reason, if the hypothesis as stated above—that this disease is due to a bacterial infection—be true, why we may not expect an ultimate cure. I would therefore ask that each and every one of you give this drug a fair trial in this disease; for it is only on accumulative evidence that we can base positive facts, and if your successes should be the same as mine, I think that we can then feel positively sure that the bichloride of mercury is a specific in diabetes mellitus.

40 East Sixtieth Street.

NEW METHOD OF CREATING A VAGINA IN A CASE OF CONGENITAL ABSENCE.

By ROBERT ABBE, M.D.,
NEW YORK.

Complete congenital absence of the vagina occurs sufficiently often to have come under the observation of most practitioners. It has heretofore baffled the ingenuity of surgeons to create a new one that would remain. We must distinguish between atresia or congenital closure of the outer or middle portion (where the uterus and the vaginal wall near it remain), and the entire absence of vagina with usually absence of uterus and ovaries. In the former, a surgical procedure will easily make a complete and enduring canal.

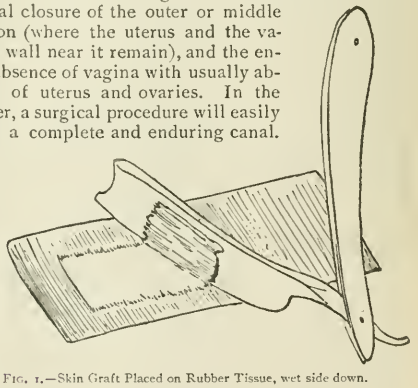

Fig. 1.—Skin Graft Placed on Rubber Tissue, wet side down.

In the latter, the attempt has often been made of opening the cellular plane between the rectum and the bladder, and by tampons—after a long period of granulation—trying to induce skin cicatrization to grow inward. The dimpled cicatrix that results has never been worthy of being called a success.

During the past two years two cases have come under my care. The first was that of a young country girl from Long Island, who sought her doctor's advice soon after marriage. He found what he supposed to be a very small orifice through a tough hymen, and introduced a blunt knife through it, splitting the posterior wall well back on the perineum. A gush of urine showed that he had entered the urethra and cut it completely backward. After a fortnight of wretched existence, during which the ignorant husband had frequent intercourse into her bladder in spite of her suffering, she was brought to me. Urine was not retained in the inflamed bladder. The genitals and thighs were excoriated by ammoniacal urine. There was an absence of vagina, uterus, and ovaries.

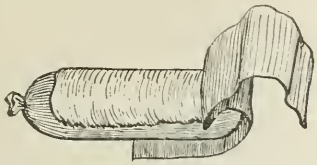

FIG. 2.—Skin Grafts Transferred to Stuffed Rubber Pouch, wet side up.

I restored the bladder wall and urethra by a plastic operation, making suprapubic drainage for four weeks—and thus she was as well as before marriage. I then split the recto-vesical space where the vagina should have been, and utilized the rather large labium minus on one side to make a lining for it, by dissecting free the edge toward the vagina and separating the two mucous surfaces so as to open it up into a long sheet with attachment only at the junction with the labium majus. The free edge was then stitched to the deepest point of the new vaginal space, and an iodoform-gauze packing placed within to hold it in contact with the raw surface. Thus a depth of two and one-half inches was lined on one side by mucous membrane. Excellent union took place, and for two months a vagina two inches deep was kept open by bougies. When she returned to her husband, however, it was found inadequate and the married couple soon separated.

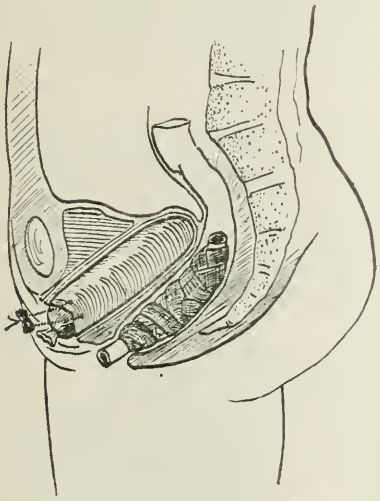

FIG. 3.—Graft-Covered Form Fixed in Place for New Vagina, gauze-covered tube in rectum.

Soon after, an attractive young lady of twenty-one years was brought to me with this history: Having become engaged to be married, she confided to her sister that she had never menstruated. They sought their family physician, who discovered that she had apparently no vagina. When brought to my office I found that every appearance of the external genitalia was perfect, except that from the meatus urinarius to the perineum was a blank wall. Rectal examination showed entire absence of uterus and ovaries.

I carefully planned and carried out the following operation: For several days the alimentary canal was made as empty as possible. A crescentic cut was made across the interlabial space, with concavity upward, thus getting a little shelf of mucous membrane below the urethra to divert escaping urine. By blunt dissection a free cellular space was readily created between the bladder and the rectum, to the depth of five inches. This was temporarily packed with sterile gauze to check oozing. Thiersch skin grafts were then cut from the thigh sufficient well to cover an ample plug made thus: A thin French rubber pouch, such as can be obtained at drug stores, was sterilized by boiling and stuffed with long strips of iodoform gauze to its full capacity. Upon this the skin grafts were spread with their wet sides outward and edges freely overlapping. Numerous small punctures had been previously made in the rubber after stuffing, so that the gauze contents would receive any discharge lurking about. A piece of rubber tubing, the size of one's little finger, wrapped loosely about with iodoform gauze, was now inserted into the rectum, with a view of permitting free exit of gas during the subsequent days of enforced constipation. Finally the graft-covered form was carefully passed into the new vaginal space, the walls of which were held apart by three deep retractors, which on removal allowed the fresh surfaces to come into closest contact with the wet surface of the grafts. To prevent the plug from being in the slightest displaced, two silkworm-gut stitches were passed across the vulva, transfixing the gauze-packed tampon, and tied over iodoform plugs at either side, as seen in the illustration.

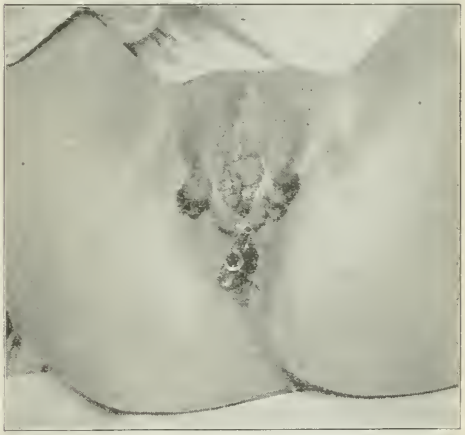

FIG. 4.—Appearance after Operation.

The urine was drawn every eight hours for a week, with such precaution that no cystitis resulted. The bowels were confined for ten days, without the slightest discomfort to the patient. Light diet was given. No febrile reaction whatever followed.

On the tenth day the retention suture was removed, the end of the plug cut, and the packing first removed before the rubber form. After cleansing, it was seen that the grafts had taken universally and a new lined cavity had been created, four and one-half inches deep.

The problem of preventing contraction now presented itself. For four weeks I kept the patient recumbent, packing the vagina with gauze liberally smeared with lanolin, and afterward, when the new skin was quite tough, dilating daily with large vaginal plugs and bougies, which were worn for a few hours at a time.

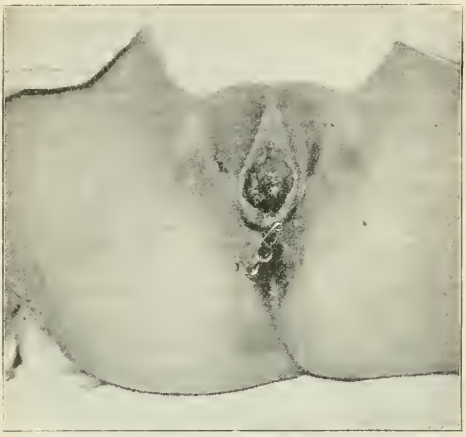

FIG. 5.—Tenth day. Retention stitch removed.

Ten weeks after the operation the patient married. She left the city for the summer, and was seen by me several times. When she began to go about, the gravitation of the abdominal contents tended to shorten the vaginal canal, and I saw that it would be necessary for her to wear a vaginal plug part of every day at least. Several varieties were tried, but nothing was so comfortable as a good-sized wax candle smoothed and rounded, and kept in by a T-bandage. Omissions of one or two weeks repeatedly allowed considerable shrinkage, but the renewal of the plug overcame it.

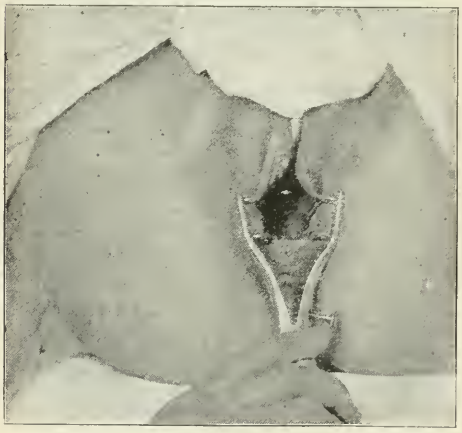

FIG. 6.—View Immediately after Removal of Plug. Speculum blade four inches deep

Inevitable stenosis by cicatricial contraction has reduced the original canal to smaller proportion, but, as it was made more than ample in the original design, it remains to-day a practical and competent canal, fulfilling at least one of its functions, and giving gratification to the mated couple. I have enjoined the continued use of the wax bougie for many months to come.

A FEW SPANISH WOUNDS.

By ELON O. HUNTINGTON, M.D.,
ASSISTANT SURGEON, UNITED STATES NAVY.

In our recent war with Spain the medical corps of the navy has had little to record in either a medical or surgical way. A few cases of heat prostration in the fireroom, as some vigilant blockader steamed away, under forced draught, after a bit of smoke or canvas on the horizon; an occasional contused hand, caught by the breech-block of a rapid-fire gun; or "wounded by the premature discharge of his own rifle," recorded of some unfortunate marine, include the greater part of the casualties. As the reading public knows, the wounds inflicted upon our jackies and marines by the enemy's fire can almost be counted upon the fingers of one's hands.

Marvellous as is this record, in view of the enormous damage done by our guns to the ships and men of the enemy, and cause for thanksgiving to a protecting Providence as it has been to every true American, it nevertheless has failed to meet the expectations of those medical officers who volunteered their services for the war in anticipation of a wide surgical experience, and to the surgeons of the regular service, looking for a harvest of operations.

After the destruction of Admiral Cervera's fleet on July 3d, however, there was an abundance of work for those into whose hands the wounded survivors fell. The absence of "first aid to the injured" measures on the Spanish ships, and the fact that many of the wounded were for hours in the water or unattended on the Cuban coast, together with the tearing character of the shell wounds, led to very general wound infection. This was in marked contrast to the clean Mauser bullet wounds with which our army surgeons had to deal, and which, in the great majority of cases, healed with the rapidity of small, clean, incised wounds.

It was my good fortune to be assigned to the care of the wounded Spaniards who were brought to the naval hospital at Norfolk soon after the battle by the ambulance ship *Solace*. That war was real and had its horrors was quite apparent, as stretcher after stretcher with its Spanish wreck was borne from the pier to the hospital.

Following the stretcher cases came those who were able to walk, wearing the only covering they possessed —namely, suits of pajamas, which were given to them on the *Solace*. Their helplessness and evident suffering made it no great effort to forget that they were enemies, and to treat them with as much care and attention as our own men received.

During the seven weeks of their stay in the hospital their behavior was all that could be desired. Only once was it necessary to discipline any of them, and that was in the case of a handsome young Don, who considered himself of somewhat finer clay than the rest, and refused to perform some light duty assigned to him as a convalescent. A very brief confinement on bread and water made him one of the most tractable of them all.

In addition to the wounds, of which each possessed one or more (one fellow from the *Vizcaya* cheerfully carrying a dozen as souvenirs of the battle), a large number were the victims of malaria. Temperatures of 105° F. were abundant. The paroxysms were easily controlled by quinine, however, in the majority of cases.

A detailed description of their various wounds would prove tiresome, I fear, but I may venture to outline a few which were of most interest to me. All save four of the men were wounded by fragments of shell, some escaping with a single fragment's light touch, others riddled with fragments varying in size from that of a pin-head to an inch or more in diameter. Search-

ing and enlarging sinuses for the discovery and extraction of these fragments formed the greater part of the operative work falling to me, most of the necessary amputations having already been performed by the surgeons of the *Solace* on her way north.

The effort of fragments to lodge as near a large artery, and still make the "miss as good as a mile," was apparent in a number of cases. In one boy (they were all boys, few being over twenty-two or twenty-three years old) was found a ragged piece of shell, the size of a silver dollar, lying against the inner side of the left femur, at about the junction of the middle and lower thirds, the artery being uninjured. This boy, who was at one of the guns on the *Vizcaya*, gave the credit of his retirement from action to the marksmanship of some gun-captain on the *Iowa*. He was sure the shot came from the *Iowa*, and described vividly in pantomime the bursting of the shell, the death of his comrades at the gun, and his own wound, which did not deprive him of consciousness.

In another case, a small fragment, making directly for the arch of the aorta, spent its energy in the production of a compound comminuted fracture of the upper extremity of the sternum and a compound dislocation at the left sterno-clavicular articulation. An alarming feature of this case was the frequent occurrence of a most intense spasmodic dyspnœa. The nature of the injury made respiratory efforts extremely painful, and the patient's condition, until relieved by morphine and glonoin, was a distressing sight. These attacks were accompanied by a marked torticollis, produced by the unopposed action of the right sterno-mastoid muscle, which persisted to a less degree during the interval between paroxysms. He had two or three such attacks daily at first, but they gradually became less frequent and the torticollis less pronounced up to the time of his discharge, when the latter was barely noticeable, and he had had no dyspnœa for some three weeks.

A shell exploded so near a fireman on the *Oquendo* that he was covered with powder burns from head to foot, but the only fragments of shell which struck him produced a slight scratch on the left buttock and a penetrating wound of the right knee-joint. Unfortunately pyæmia was the result of an effort to save the extremity after infection of the wounded joint had taken place.

A happier result for conservative treatment followed, however, in the case of a suppurating, compound comminuted fracture of the humerus and ulna at the elbow-joint. In addition to that wound the patient had received shell wounds of both legs, the thumb of the opposite hand had been torn away, with several scalp wounds, and a severe burn of the back and left side. His general condition was very low indeed; so conservatism was perhaps "Hobson's choice." At any rate, he recovered, his wounds healed, and he now has a fairly good elbow-joint.

The four cases which I mentioned as exceptions to the list of shell wounds were Spanish prisoners who were shot by the sentries on board the United States steamship *Harvard*, during the supposed mutiny, shortly after the battle of July 3d. Theirs were therefore wounds produced by small-calibre bullets at close range, and in the cases in which bone was struck very great damage was done.

A seaman from the *Oquendo* was shot in the right shoulder. The ball entered behind and internal to the head of the humerus, and shattered the right scapula just below its spine, some fragments being driven out through a ragged, irregular wound of exit, about three inches in diameter, directly above the vertebral column. The ball itself, instead of leaving by this wound, passed on beneath the left scapula and lodged behind and to the inner side of the head of the left humerus, from which situation it was extracted Necrosis of some fragments of the fractured scapula induced profuse suppuration in the tract between the wound of entrance and the central wound. This tract was laid wide open and the greater part of the scapula below the spine was removed. At the time of his discharge this tract was granulating well, the patient's general condition was very good, and he was able to use his right shoulder without pain, and with a fair degree of power.

In the second case, a ball entering at the inner side of the left thigh, just below the ilio-femoral fold, struck the femur and comminuted it for the extent of three or four inches, driving some of the fragments out through a wound of exit below the great trochanter, nearly as large as a man's hand. The patient's general condition was very poor when he entered the hospital, and his wound was suppurating freely. The verdict of a consultation was that an immediate amputation was contraindicated. A week's time was devoted to feeding and stimulation, in an effort to get the patient into a better general condition, if possible, to stand the operation. His condition did improve somewhat, but an amputation at the hip-joint proved more than a match for his resistance, aided though it was by salines in abundance and hypodermics *ad libitum*. He succumbed to shock after a temporary recovery from the anæsthetic.

A very painful condition was that of a fireman, who was wounded in the right buttock. The ball entered below and to the inner side of the great trochanter, and made an exit about two inches below and internal to the wound of entrance. Both wounds were healed when the patient reached the hospital. There was an area of ecchymosis, somewhat indurated, on the inner side of the thigh, over which he complained of slight pain, but his chief complaint was of sharp, almost continuous pain in the sole of the right foot. Examination of the foot showed no injury whatever, and there was no tenderness over the part. The pain in the foot was, however, real and severe, requiring large and frequent doses of analgesics to keep the patient quiet. His groans and cries disturbed the whole ward when he was allowed to come out from under the influence of the drug. The entire extremity was carefully examined with the fluoroscope, a clear view being obtained, with absolutely negative result. The condition gradually passed away, and when he left the hospital he no longer required the use of morphine. What caused the pain in the foot? Was it pressure of a hæmatoma in the thigh? was the great sciatic touched by the bullet? or was the pain in the foot independent of the gluteal wounds? It is my belief that the nerve was injured by the bullet in its passage through the buttock.

The fourth mutineer was a sailor from the *Oquendo*, who was shot in the right leg with such destruction of the part as to necessitate an amputation at the knee-joint, which operation was performed upon the *Solace*.

The majority of cases were of interest chiefly for the marked and rapid improvement in their general condition. Their shell wounds, serious though they were in many instances, became monotonous from their abundance. The men had been on short rations for a long time, and the vitality of all was greatly lowered. The effect of feeding and nursing was happily demonstrated to all concerned with their care; and when they sailed for home, though many of them lacked the normal number of arms and legs, they were a far healthier lot of Spaniards than when they sailed out of Santiago harbor to do or die for a lost cause.

Pernicious Vomiting.—Cocaine hydrochlorate, gr. ⅙ hypodermically once or twice daily, immediately before feeding.—Pozzi.

EYE LESIONS IN SOME DISEASES OF THE KIDNEY.[1]

By HENRY S. OPPENHEIMER, M.D.,
NEW YORK.

The eye shows lesions consequent upon kidney trouble, in every one of its vascular tissues. I say "consequent upon kidney trouble" deliberately, because formerly it was taught that certain eye lesions preceded troubles of the kidney. It is true that the presence of the eye lesion found by the ophthalmologist is often the first thing to call the attention of the patient and his physician to the existence of trouble in the kidneys. But, although a single examination for albumin may prove negative, it has been my experience that repeated and careful search for casts and albumin is sure to prove successful sooner or later. As to the frequency of the eye lesions which are observed in this connection, the retinitis albuminurica, with or without hemorrhages, is much the most common. But others are seen either separate or in connection with the retinal lesions.

Thus we see commonly in the nephritis of acute diseases, or in the later stages of the chronic ailment, the œdematous infiltration of the eyelids, especially the lower ones. The loose subcutaneous cellular tissue of these parts favors the spreading of serous exudations. Thus we frequently see œdema here, when it cannot yet be detected in other parts of the skin. It is apt to be transient, however, until we have pitting in the malleolar region. Again, I have seen cases in which œdema never appeared in the face, although great accumulations of serum had taken place in the abdominal cavity, etc.

The conjunctiva may become œdematous to the point of chemosis. An extreme and therefore rare case of this, in which the conjunctiva was elevated to the extent of leaving the cornea down in a depression (chemosis), is reported by Brecht.[2] This case had also detachment of the retina, which reattached itself later on.

Hemorrhages into the conjunctiva, sometimes in advance of the retinal affection, have been seen by Talko.[3] Samuelson[4] saw hemorrhages in both lower eyelids preceding a hemorrhagic retinitis albuminurica. Wharton Jones[5] has reported a case of extensive bleeding into Tenon's capsule, with protrusion of the eyeball and blindness, in disease of the kidneys with the hemorrhagic diathesis.

Troubles with the extrinsic eye muscles are not rare in this connection, and a search for albumin should be made in every case of non-traumatic paresis of eye muscles, which develops rapidly and seems to be due to lesions at the base or at the nerve roots. Finlayson[6] cites a case of interstitial nephritis with paresis of the right abducens muscle, which he was so fortunate as to have an autopsy upon. This revealed hemorrhages in the gray substance of the anterior portion of the cerebellum, near the median line, close to the fourth ventricle, and a third on the left posterior portion of the pons near the median line. Knies[7] gives three cases: (1) Paresis of abducens, the only eye lesion in a case of albuminuria, remaining after typhus and existing fifteen years. It recurred several times in a few months, and then the patient died; no autopsy. (2) A left-sided paresis of the trochlearis, with hemorrhages on the right optic disc, in cirrhosis of the kidney of indefinite duration. Death after six months; no autopsy. (3) A complicated ophthalmoplegia externa in a man, twenty-four years of age, with albuminuria—a remainder of typhus contracted two years before. First the right trochlear, then as this improved the internal rectus and the other muscles supplied by the oculo-motorius, became lame. Later there were attacks, lasting one or more days, of single and double ptosis. These pareses disappeared readily. The lameness of the right internus and rectus inferior lasted longest. Fundus and internal eye muscles constantly normal. Syphilis could be positively excluded, as far as this is ever possible. The patient was lost sight of. In most cases an extravasation about the nucleus or root of the nerves seems to be the cause of the paresis. In one case, however, Leber found sclerosed fibres in the nerves supplying the abducens muscle. This much for the external eye muscles.

The ciliary muscle, doing the work of accommodation of the eye, shows its weakness, as a rule, almost as soon as the general condition of the patient is sufficiently affected, in the reduction of the power of accommodation of the eye. In young patients, or in those with myopic eyes, this weakness is less likely to be noticed. Older persons, however, especially those with hyperopic eyes, are sure to come to the oculist for stronger glasses to compensate for this rapidly increasing weakness. Fortunately, so long as there exists no serious lesion in the interior of the eye, this is easily accomplished.

One of the less frequent eye lesions observed with kidney disease is iritis. Knies' reports two cases, neither of which showed anything unusual in its course. This seems to be the rule in the cases observed, and may explain the fact that so few cases have been reported. I have seen only one, and therefore conclude that they are rather rare. This, in a woman of sixty-seven, with hemorrhages in retina and albuminuria, developed a severe iritis, which, when atropine was used, though very cautiously, resulted in increased tension and secondary glaucoma.

Hemorrhage in the vitreous humor, either breaking its way through from the retinal vessels or having its origin from the more peripheral capillaries, is not an unusual occurrence in these troubles.

But by far the most important, as well as the most frequent in their occurrence, are the lesions we so commonly see in the retina, optic nerve, and choroid coat. I am aware that I am somewhat heterodox in associating the choroid with the retina in this connection. But I am well satisfied that in the severer processes the choroid is implicated in the affection of the retina. There are two reasons why the choroiditis in this connection is rarely mentioned. The retino-choroidal pigment hides, in a great measure, the process in the choroid coat; and, secondly, the exudation in the retina itself prevents the lesion of the choroid from being seen. But in the greater number of reports of anatomical and microscopical examinations of such eyes, my statements are borne out.

Retinitis albuminurica, or neuroretinitis albuminurica—for the optic nerve is very often more or less involved in some stage of the process—is so well known that I hesitate to describe it. We mostly see it when it is fairly pronounced, with its characteristic arrangement of whitish points, in a more or less complete stellate form, around the macula; with the retina hazy or whitish over the central part of the fundus, involving especially the region of the macula and nerve; the vessels perhaps partially covered with the exudation, and the veins larger than normal. Hemorrhages associated with this ophthalmoscopic picture are the rule rather than the exception. They may be few or very numerous. They are mostly flame-shaped or striped; taking these shapes when in the nerve fibre layer, as is commonly the case. But they

[1] Read before the New York State Medical Association.
[2] Arch. für Ophthal., ii., p. 120.
[3] Jour. für Aug., 1872.
[4] Virchow's Arch., vol. lix.
[5] British Medical Journal, May 2, 1893.
[6] Glasgow Medical Journal, October, 1877.
[7] "Die Bez. des Sehorgans und s. Erkrankungen," p. 317.

[1] *Loc. cit.*

may occupy other layers of the retina, and then take more or less circular forms. When we see the trouble at its beginning, it may be limited to a slight haziness of the retina in the central portion of the fundus, with a lessening of the light streak upon the vessels within the affected area, and perhaps the outlines of the optic disc a little indistinct or washed out. This may increase until, in the severer neuritis, we have an appearance resembling choked disc. The white spots appear gradually, and not always in the typical stellate arrangement. They may coalesce and thus cover a good part of the region occupied with its vessels. The fovea centralis in such cases will look bright red in the centre of this white or yellowish-white field. The periphery of the eye usually remains free, and this explains the fact that the patients very seldom become completely blind. The vision is, of course, reduced according to the severity and extent of the exudation.

As a rule, this affection is binocular, although many cases have been observed in one eye only. Sooner or later, however, the second eye is apt to follow its fellow in showing the lesion. The course of this disease depends upon that of the kidney trouble.

In acute cases, arising from the exanthemata or from pregnancy, we see quite a proportion of complete recoveries, although even in these some cases go on from bad to worse. The prognosis is always worse when hemorrhages are present, as we can assume the same condition of the vessels in the brain which we observe in the eyes. When the causal factor is removed, the blood becomes gradually absorbed, leaving perhaps some pigmentation behind to show its former site. The whitish exudation disappears very gradually, and completely only in cases in which the kidneys assume normal conditions and functions.

Dr. Bull reported to the American Ophthalmological Society, in 1886, one hundred and three cases observed by him, of which at the time of the report eighty-six had been fatal. Of these patients, fifty-seven died in the first year, eighteen in the second, six in the third, four in the fourth, and one in the sixth year. In four of these cases sugar was present as well as albumin. Of the four patients two died in eight months and one in fourteen months. Thus he shows that over half die the first year, and about three-fourths the second (73.4 per cent.). The ages of the patients were from five years to seventy-eight. In the progress of this inflammation there may be some temporary improvement; at times this can be made out with the ophthalmoscope, at others not. There may be new spots of exudation or hemorrhage, and some may disappear. The retina may become folded and even detached. Herter[1] reports a double retinitis with detachment, in a woman eight months pregnant; Anderson,[2] detachment of the retina in a child with chronic nephritis; Hirschberg,[3] double detachment in a man of twenty-two, with retinitis albuminurica. In pregnant women these detachments seem to occur more readily than in others, and tend to replace themselves often, but not always, at the end of pregnancy. Cases of permanent blindness remaining are reported (Fürst[4]); several cases after kidneys had healed (Weeks,[5] one).

Teillais[6] cites four cases of retinal hemorrhages in pregnant women, all of whom recovered after pregnancy; one of these had the complication of nose bleeding and hæmoptysis. As to the anatomical condition of retinitis albuminurica, we have, primarily, changes in the blood-vessels. The lumen of the smallest arteries and capillaries especially is narrowed through thickening of their walls; especially the intima is affected, which may lead to thrombosis and complete closure of the vessel. This can be studied through the ophthalmoscope, and in the retina it can be easily made out. But the condition extends to every vascular tissue of the eye. Hemorrhages occur from the veins and capillaries mostly. The œdema around these foci leads to the lifting and folding of the retina which have been observed. The white spots we see with the ophthalmoscope show to be fatty degeneration of the tissues and exudations. Some authorities have found exudations they describe as lardaceous, colloid, or amyloid, but the characteristic chemical reaction of amyloid tissue has never been obtained, so far as I know.

As a rule, the layer of rods and cones and the pigmented epithelium are not involved, excepting in severe cases.

The essential nature of this process appears to me to be consequent upon the changes in the blood-vessels. An irritant to the tunica intima exists in the blood, whether this be urea or some other substance of imperfect elimination, or any other poison, be it of scarlatina, malaria, diphtheria, syphilis, mercury, lead, phosphorus, alcohol, or what not. It irritates the blood-vessels, causing contraction of the arterioles and capillaries. This persistent irritation and contraction produce thickening of the coats of the vessels, lessening their calibre and throwing more work upon the left heart, thus in turn producing the hypertrophy of the left ventricle so constantly associated with chronic kidney disease. Now, then, we have a vitiated blood, increased arterial tension, diseased blood-vessels, and a hypertrophied heart. The condition affects the kidneys as well as the rest of the system. In the retina and the cortex of the brain, etc., we have terminal arteries, and, for lack of anastomosis here to supply the deficiency of circulation, the same as in other parts of the body, we are apt to have disturbances of nutrition and necrobiosis. In the retina the locus minimæ resistentiæ is the region of the macula, where fatty degeneration in the nerve-fibre layer, from imperfect nutrition, produces the typical stellate white figure seen ophthalmoscopically. The condition of the blood, the vessels, and the vis a tergo will determine whether we shall have hemorrhages at the beginning or later. Hypertrophy of the heart alone is in my opinion not sufficient to explain, as has been formerly attempted, the occurrence of these.

Thus we have seen occur, to recapitulate, from insufficient or vitiated blood supply, or from hemorrhages due to disease of the smaller vessels, œdema of the lids and conjunctivæ, hemorrhage in the conjunctiva, into the capsule of Tenon, into the orbital tissues and the eye muscles or their supplying nerves or trophic centres, inflammation of the iris, retina, and choroid coats of the eye, with hemorrhages into any and all of these, as well as into the vitreous—these conditions also extending to or sometimes beginning in the optic nerve. I shall not venture to go into the subject of treatment of these troubles. The treatment best for the kidneys is also that which holds out the greatest promise for the eyes. Now and then we are called upon to use (to fulfil local indications) a mydriatic, a counter-irritant, or perhaps massage, or electricity for a lame muscle; but, as a rule, the family physician treats my eye cases coming under this head.

I have left for consideration to the last the most serious disturbances of vision connected with renal trouble—uræmic amaurosis. It is an amblyopia developing in the course of acute nephritis, coming on gradually or, as in most cases, rapidly. We see it usually in the nephritis of the exanthemata, as scarlet fever, etc.; or in that of pregnancy. When it occurs in chronic nephritis, it is during an acute exacerbation, and warrants a grave prognosis. It is accompanied usually by headaches, nausea, and vomiting, and may occur during uræmic convulsions. Pulse hard;

[1] Charité Annalen, 1877.
[2] Jahrb. für Aug., 1888.
[3] *Ibid.*, 1884.
[4] Berl. klin. Woch., 1887.
[5] Arch. für Aug., 1887.
[6] Annales d'Oculistique, 1886.

arterial tension great. Urine loaded with albumin. There may be complete unconsciousness, and the patient may find himself blind on recovery from this; or he may be perfectly clear in mind and find darkness coming on rapidly, and, most often completely. The pupils are wide, as a rule, but may be contracted—the characteristic peculiarity being that, although the patient may be wholly insensible of any light sensation, there is usually reaction to light, even when the patient is unconscious. In the exceptional cases, when this reaction has not taken place, there have been inflammations of the optic nerves to account for its absence. This condition is always double sided. There may be retinitis with this amblyopia, but in such cases it has existed before the amaurosis, and continues after this has subsided, and has no influence upon it. In uncomplicated uræmic amaurosis there is usually no ophthalmoscopic change to be noticed. In a few reported cases there was narrowing of the arteries to be seen with the mirror, showing arterial spasm. The prognosis depends upon the condition of the kidneys. The patient may die in the uræmic attack. When this is recovered from, the vision usually returns in from twelve to seventy-two hours. The condition is clearly one of poisoning of the nerve centres, producing arterial spasm and consequent cerebral anæmia, with, perhaps, serous exudations. The reaction of the pupils to light proves this blindness to be of central origin. As to the frequency of uræmic amblyopia, I know of no statistics so conclusive as Dr. Bull's,[1] who observed it in thirty-seven cases out of the one hundred and three referred to above. The differential diagnosis between retinitis albuminurica and this amblyopia is so easy as hardly to need mention. The former is gradual, permits the patient to go about in reasonable health, and presents distinct retinal lesions. In this amblyopia the patient is found in bed, having become more or less suddenly and completely blind, with cerebral symptoms more or less pronounced, even to coma, and, as a rule, no lesion appreciable in ophthalmoscopic examination.

16 East Thirty-Second Street.

Progress of Medical Science.

The Abuse of the Mechanical Treatment of Uterine Diseases.—Dr. C. K. Flemming, in a paper on this subject, read before the Denver and Arapahoe Medical Society, October 25th, drew the following conclusions: (1) The vaginal speculum is capable, through lack of asepsis, of carrying infection into the vagina and thence to the uterus. (2) The uterine sound should have no place in the armamentarium of the general practitioner. (3) The results from intra-uterine medication are, to say the least, unsatisfactory, and may be decidedly harmful. (4) The rapid dilatation of the cervical canal is the ideal method, and the operation should be performed in the home of the patient or in the hospital. (5) The uterine curette should never be used in the office. (6) Pessaries are useful only in the treatment of displacements, are only palliative, and should not be used unless radical means are refused.

The Evolution of Ovariotomy.—Dr. A. Martin, in an address delivered at a special meeting of the British Gynæcological Society (*Pacific Medical Journal*, October), said: "I have spoken of vaginal cœliotomy, and you may wish to know through which cul-de-sac we should enter. Gaillard Thomas and the first operators, including myself, incised the posterior, and this method has been recommended by Mackenrodt, Löhlein, and others quite recently. Dührssen performed the operation through the anterior, and so do I now. Undoubtedly the posterior incision is nearer to the ovarian pedicle when the normal anatomical relations of the pelvis are undisturbed. But I think we obtain a much better view of the pelvic cavity through the anterior. After separating the bladder from the uterus and having opened the vesico-uterine pouch, we can easily insure them against injury. The uterus having been brought outside, half of the hand can then be introduced. Through this opening the pedicle of the ovaries is easily reached, because the ligamentum ovaricum proprium is stretched when the uterus is outside. When of normal size the ovary can now be seen, but if greatly enlarged by outgrowths only its lower segments. We can fix the pedicle with a good forceps and pull the tumor downward and forward. If it needs evacuation allow the fluid or other contents to escape without touching the peritoneum. After the tumor has been brought outside the pedicle can be secured with ease, which is done in the same way as by the abdominal method. After examination of the other ovary and the whole pelvic cavity, the operation is practically over. The uterus is now replaced in its normal position. When the wound is closed the peritoneum is included in the same sutures which close the upper sections of the wound, and if necessary, in cases of retroflexion, the uterus also is fixed to the vaginal wall. In young women it is advisable to pass these sutures not higher than two centimetres above the internal os. This will answer to prevent further displacement and insure safety in case of subsequent pregnancy. I must not forget to add that the uterus is easily freed in this way of its adhesions resulting from acute and chronic peritonitis, and secured by a correct vaginal fixation in proper position. It is generally known that the patients recover rapidly after this anterior colpotomy. Drainage I have not required in a single case out of my seven hundred and five."

The Depopulation of Cities Infected with Yellow Fever.—Dr Felix Formento (*New Orleans Medical and Surgical Journal*, October) concludes as follows: (1) General depopulating of towns and cities infected with yellow fever, however desirable, is not practicable. (2) Voluntary exodus of individuals and families is to be encouraged at the first breaking out of the disease. (3) During an epidemic, depopulating should be carried out under special sanitary precautions. (4) Depopulating of houses in which first cases occur, by removal of the sick to properly constructed hospitals and of the well to special camps of observation, and thorough disinfection of houses, are considered the most efficient measures for stamping out the disease at its birth. (5) Isolation of the sick and destruction or disinfection of discharges from the bowels and of all contaminated material, with disinfection of the premises, are the best means of limiting the disease. (6) All measures of repression of an arbitrary character are to be applied to a limited number of cases only. If they fail they should be discontinued, as they are an additional burden to the sufferings and hardships of the people.

Classification of Headache.—I. Diseases of the nervous system—(*a*) Neurasthenia; (*b*) hysteria; (*c*) meningitis purulenta and tuberculosa; (*d*) pachymeningitis hæmorrhagica interna and cervicalis hypertrophica; (*e*) hydrocephalus; (*f*) brain tumors; (*g*) circulatory disorders of the brain: hyperæmia and anæmia, arterio-sclerosis; (*h*) neuralgic headache: (1) neuralgia trigemina, (2) neuralgia cervico-brachialis; (*i*) migraine; (*j*) traumatic headache; (*k*) the so-called habitual headache. II. Diseases of the sense

[1] *Loc. cit.*

organs. III. Diseases of the digestive tract. IV. Diseases of the kidneys. V. Constitutional diseases —(*a*) anæmia; (*b*) chlorosis; (*c*) diabetes; (*d*) leukæmia. VI. Intoxications. VII. Infectious diseases. VIII. Rheumatism of the scalp.—Dr. Windscheid, *Public Health Journal*, October, 1898.

The Action of Drugs in Children.—Dr. J. B. McGee says that while as few drugs as possible should be given to children, when indicated they should be used freely. We should know what a drug cannot do as well as what it can do. In most children the tendency toward recovery in slight ailments is very strong. Medication should be simple. Medicine eliminated rapidly should be frequently repeated; such as alcohol, nitroglycerin, the ammoniacal salts, aconite, and belladonna. Digitalis is cumulative and should be given at wide intervals. Pills and powders are not easily taken by young children. Active principles and remedies in small bulk are to be preferred. Salol and sulphonal in pill or tablet may pass through the intestinal canal intact. Glycerin is a better vehicle than syrup, especially in summer. With the exception of opium and its alkaloids, larger doses may be given than are usually stated. The salts of sodium are to be preferred to those of potassium. Care is necessary in giving opium, with the exception of paregoric, one drop of which for each year is a safe dose. Dover's powder should not be given to children. Chloral is a good sleep producer. The bromides are very slowly eliminated. Sulphonal and trional are safe hypnotics for children. Belladonna is exceptionally well tolerated in children, and may be given in two-drop doses for each year, and even sixty drops a day have been given to a child two or three years old. Alcohol is one of the best heart stimulants and seldom disagrees with children. Strophanthus is to be preferred to digitalis. Caffeine and cocaine are not well borne, but strychnine is. Children stand the preparations of mercury and arsenic well. Cold is a good antipyretic, but phenacetin and acetanilid may be used, and also quinine in malaria.—*Medical Standard*, October, 1898.

Hysteria Virilis Simulating Chronic Intestinal Stenosis.—Dr. Strauss, of Berlin, mentions the case of a patient who, in the past eight years, had visited numerous hospitals throughout Germany for the relief of his intestinal disturbances, and upon whom laparotomy was twice performed (*Berliner klinische Wochenschrift*, No. 37, 1898). In neither instance was there a discoverable cause for the ileus, which was the indication for laparotomy. When recently the patient, a shoemaker, twenty-eight years old, came under the writer's observation, he appeared to be a very sick man; vomiting was continuous, he passed neither fæces nor flatus, and meteorism was marked. One day, during a typical hysterical attack, the meteorism, which during five months had remained unchanged, as regards the amount of abdominal distention, suddenly and completely disappeared; there was spontaneously a movement of the bowels.

Blood Cyst of the Sciatic Nerve.—W. K. Hatch (*Indian Medical Gazette*, September) reports the case of a man, aged forty, who for ten years had had a tumor on the back of his left thigh. There had been no injury to the part, and when first noticed the tumor was small and gave rise to no pain or inconvenience. It increased in size slowly and became painful, particularly on movement, about one month before the patient came under observation. The swelling was globular, firm, smooth, slightly elastic, movable from side to side, but not up and down, and the skin over it was healthy but shining. The tumor being dissected out, its surface was found to be slightly lobulated and of bluish color, and it was connected with the sciatic nerve. A few nerve fibres were carefully dissected off, and the sac was opened and then removed from the nerve. The sac was thin walled, and contained pure blood, hæmatoidin crystals, and a little fibrin. The wound healed readily, and no alteration of sensation or of motion resulted.

Staining of the Ganglion Cells.—The new method of staining the ganglion cells has the advantage over that of others, outside of Nissl's, in that it is applicable to all hardening processes. The technique is as follows: (1) Hardening of the preparation in alcohol or Muller's fluid or formol or Müller's formol. (2) Embedding in collodion or paraffin. Best in thin sections. (3) The sections are then washed and placed in the staining fluid (polychrome methylene blue, Dr. Grübler, Leipzig), where they are either allowed to remain twenty-four hours at the room temperature, or are heated over the water bath till steaming begins. (4) The sections are washed in distilled water. Strongly to fix the stain and to increase the durability of the preparation, it is advisable to keep the sections in frequently changed distilled water for twenty-four hours. (5) The differential stain is best made on the slide. The sections which have been placed on the slide are dried and then flooded with Unna's solution of glycerin-ether, which is allowed to remain on till there is a positive macroscopical differential stain between the gray and white substance (eight, fifteen, or twenty-five seconds, depending upon the thickness of the section). The superfluous fluid is removed and the section dried, either with filter paper or, better still, with a smooth cloth. (6) Wash several times with absolute alcohol, in order to remove the glycerin-ether and to make a clear differentiation. Dry. (7) Clear in ol. origani. In order finally to remove the alcohol, wash and rinse the slide several times in this oil. Oil which has been thus employed should be thrown away. (8) Mount in Canada balsam.—Drs. Frederick Luithlew and Joseph Sorgo, *Neurol. Centralbl.*, April.

Teething.—The eruption of the teeth is a physiologic and anatomic crisis.—White.

Diarrhœa of teething is natural.—Ellis.

The fact that this diarrhœic tendency lessens during the second and third year is in no way related to dentition, but due to the protective condition of the canal, which the development of the various secretions gives it. Free hydrochloric acid is known to be destructive to fungi up to a certain point; this, of course, the infant stomach has not. Since fermentation is in no way arrested, yeast fungi are found in large quantities in infant diarrhœa. And if physicians who attach importance to the theory of teething were to examine the food served to their diarrhœic patients, they would in numerous instances find it contaminated.—Dr. Frank H. Babcock, *Virginia Medical Semi-Monthly*, October.

Among the most common pathologic results of difficult dentition are certain affections referable to the cerebro-spinal system, eclampsia being one of the admitted results.—Smith.

When similar symptoms arise at each epoch of teething, and subside with the subsidence of the gingival turgescence, teething must be regarded as the cause.—Smith.

The evolution of the teeth is one of a number of developmental processes going on in the body, and organs and tissues are prone to disease in proportion to their normal or physiologic activity.—Carmichael.

Convulsions in teething arise from nervous excitement, from the pain and general disturbance.—Bouchut.

In teething the child is passing its first climacteric.—Love.

Serum Therapy.—Dr. Thomas Richard Fraser, in his address on medicine delivered at the last meeting of the British Medical Association, said: "Serum therapy has merely entered the first stage of its development, and already the results are of much value. The mortality of diphtheria has been reduced from forty to eight per cent.; the mortality of hydrophobia has shrunk at least from sixteen to one per cent.; the prognosis of tetanus has been deprived of much of its gloomy forebodings; the cure of pneumonia, of tubercle, of erysipelas, and of septicæmia, is on the eve of being realized; a complete demonstration has been obtained of the power of antivenins to prevent the toxic and lethal effects of venoms; and the experimental data are surely being accumulated for completing the greatest triumph of preventive medicine by the discovery of an antitoxic serum for the cure of smallpox."

An Antiseptic Dwelling-House.—Dr. van der Heyden, a bacteriologist, has had an antiseptic dwelling built in Yokohama. The walls of the structure are composed of large blocks and plates of glass. In one of the upper corners of the dwelling there is a small opening, so constructed as to give egress to the inclosed air, but not permitting the entrance of air from without. The fresh air, after having been filtered through cotton saturated with glycerin, is carried into the house by means of a large tube.—*Süddeutsche Apotheker-Zeitung.*

The Treatment of Pneumonia in Very Young Children.—Dr. L. Emmett Holt (*Medical News*, November 19th) concludes as follows: (1) No depleting measures are ever admissible. (2) Hygienic treatment, including fresh air, proper feeding, and intelligent care, is of the utmost importance. (3) No unnecessary medication should be permitted. (4) Many annoying symptoms may be relieved by local treatment, such as cough by inhalations, pain by counter-irritation, restlessness by the ice-cap, or sponging. (5) Stimulants should be deferred until demanded by the condition of the pulse. (6) High temperature is much more safely and effectively controlled by the use of cold than by drugs. (7) Greater caution is necessary in the use of powerful stimulants than is generally observed. (8) Rest is quite as important as in other serious diseases.

The Treatment of Pneumonia in Infants and Children.—Dr. Henry Koplik (*Medical News*, November 19th) says that treatment must be influenced by (*a*) the age of the patient; (*b*) the severity of the infection and the amount of lung involved; and (*c*) the condition of the heart. The mortality in the newborn and very young infants being very high, the selection of remedies in these cases calls for greater discretion than at a later period of life. At an early age in some violent cases the temperature is often subnormal, so that antipyretic remedies need not be considered. In such patients the high grade of toxæmia and the excessive heart action demand the first consideration. The subnormal temperature is also a very strong argument against those who contend that the cold-bath treatment is the sheet anchor against the spread of infection; in other words, the temperature is a measure of the infection present. This is not so. The treatment by means of drugs which serve to increase the production of leucocytes—phenacetin, for example—is at present a doubtful procedure. To reduce the pulse and to support the heart are the main indications. Small doses of tincture of digitalis and tincture of strophanthus are of especial value. The former is to be given in half-minim doses until the desired effect is attained; the latter seems to be better borne by the patient. Aconite and nitroglycerin are condemned; camphor, ammonia, caffeine, and musk also are not sustained in action. Strychnine given hypodermatically in doses of one-four-hundredth of a grain is very useful. Acute heart failure is best met by hypodermics of alcohol and ether; first the latter, then the former. Tepid or warm baths seem to have a stimulating effect by drawing to the skin surface the blood which has been driven into the interior, thus restoring the equilibrium. Poultices and cataplasm are nonscientific, and useless in any form of pneumonia. Opium is very badly borne, and only tends to deepen the stupor into which the poison of the disease has plunged the patients. Opium is distinctly contraindicated in weakly, idiotic, or semi-idiotic infants. Emetics are of questionable utility, for emesis is produced only at the expense of the heart. A temperature above 104° F. for two days is a plain indication for bathing or cold pack. Frequent baths of any kind are to be deprecated. The cardinal rule is never to repeat a bath, warm or cold, unless it is found that with the reduction of temperature, whether this be slight or marked, the heart action remains good. Never give baths when the temperature has started on a decline, temporary or permanent. Many cases have been treated successfully without baths; in these cases small doses of antipyretics are of great value. Infants, aged six months to a year, will bear from one-half to one grain of antipyrin or phenacetin, combined with digitalis in one-half-minim to one-minim doses. In infants in whom the pulse is good and respirations are not excessive, digitalis, strophanthus, or strychnine is rarely called for. The more we see of the type of pneumonia in which the heart is well sustained in action and the area of lung involved limited, the less we resort to alcohol. In fact it is of use only in asthenic cases. In many cases alcohol does harm by driving the heart, reducing appetite and the capacity for digestion. Finally, the patient should be isolated from other children, and especial attention should be given to constant change of air.

Buboes.—Reynaud, of Marseilles, highly recommends the treatment of ulcerating bubo by the thermocautery, brought to a white heat and held for five minutes at a distance of half an inch from the ulcer. The patients complain of a sensation which is disagreeable but not painful. The application is made once a day, and after the second or third time the wound is seen to become modified in its character and in a week is cicatrized. After each *séance* a piece of absorbent cotton, steeped in sterilized water, is applied to the ulcer.

Syphilitic Gummata in Dementia Paralytica.—Drs. Vallon and Wahl (*Deutsche Medizinal Zeitung*, October 27th) state that syphilitic manifestations during the course of progressive paralysis are very rare, even in those cases in which the post-syphilitic nature of the paralysis is beyond question. They report two such cases, however—one in a man of forty-one, the other in a man of thirty-eight; both patients presented a typical picture of dementia paralytica. During the course of the disease a suppurative gumma of the right tibia developed in the first case, and a similar gumma of the left femur in the second. In both instances the local affection disappeared entirely in a short time under mercurial inunctions and iodide of potassium; cicatrices formed at the site of the lesion. This antisyphilitic treatment had absolutely no effect upon the general symptoms of the dementia, a circumstance which appears to be the rule. This fact is of course not proof against the syphilitic nature of the progressive paralysis. On the contrary, the authors are thoroughly convinced that in the vast majority of cases the disease is syphilitic in origin.

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THE OPERATIVE STATISTICS OF MAMMARY CARCINOMA.

JUDGING by what we read, there are not many subjects concerning which it is more difficult to draw satisfactory conclusions than upon the final results after operations upon carcinoma of the breast. The statistical evidence upon the subject appears to be susceptible of almost any arrangement, and almost anything can be proved by it. However, we are now certain that results in the last decade are better than those in the previous one, and better in two ways—a larger percentage of cases without recurrence after three years, and fewer local recurrences. The number of deaths from metastatic deposits is probably larger in proportion to the whole number of deaths from carcinoma starting in the breast. We have practically eliminated acute operative sepsis and "shock" as causes of death, and therefore need not consider them; and when we do have local recurrences they are often amenable to further operative work, so that in many such cases the actual cause of death is metastasis or direct involvement of the underlying pleura and lung by continuity of tissue. If statistics prove anything, they show that the more radical the operation the less often we shall see local recurrence. The work of Halsted and others thus far proves this point. When we remember that some of the operators of ten or twenty years ago showed sixty or seventy per cent. of local recurrence, and that Halsted offers us a series with only six per cent. of that form of recurrence, we cannot fail to be impressed. Of course immunity from local return has no bearing upon the behavior of any internal deposit. Our English confrères do not yet seem to be entirely convinced of the necessity of what they call the "complete" operation, and we believe that there are some even who do not admit the necessity of clearing out the axilla in all cases. We cannot understand this attitude, although it is well known that there are several varieties of carcinoma which vary much in malignancy and rapidity of growth. We are considering only operations done with the idea of effecting a cure. It is true that some "scirrhus" tumors are of very slow growth, and that their lymphatic involvements show little tendency to become extensive, but at present the clearing of the axilla and subclavicular fossa adds practically nothing to the operative risk, and may make a great difference to the patient. In such cases, which are commonest in old women, the very radical methods like Halsted's are probably not necessary unless the tumor is adherent to the muscle, and then if we operate at all we should be as radical as possible.

The question of definite cure of carcinoma of the breast is not an easy one to decide. Different series of operations have given percentages of immunity after from three to five years varying from seven to eight, up even to twenty. It seems hardly fair to put down as a recurrence an invasion of the disease after ten years and, *a fortiori*, after twenty, though this is done in some lists. Still there are some general conclusions which we are justified in drawing. We can say positively that early radical operations greatly reduce the percentage of local recurrences, but do not naturally have any effect upon metastases or lymphatic involvements which have already occurred; and from this we may infer that what we call "early" operations are not nearly early enough, and that metastatic deposits have been formed often, long before there is any objective manifestation of their presence. We must differentiate a metastasis from an involvement of an internal organ by continuity of tissue, which can occur only in an advanced stage of the disease. We are justified in concluding that in order to improve our percentage of "cures" we must have much earlier treatment and consequently earlier diagnosis, and the opportunities for the latter will come usually to the general practitioner, and not to the surgeon. We already know that by extensive removal we greatly diminish the chance of local return, and we are justified in supposing that by extensive and early removal we may often head off a metastasis. The laity ought to be taught that any tumor in the breast should be treated as a matter of great importance, demanding immediate attention from an expert, and this knowledge must in a large measure be disseminated by the general practitioner. It is often in the power of the latter to have such cases treated promptly by surgical means, and the opportunity should not be neglected. The question of diagnosis is not such an important one when we remember that an enormous proportion of tumors of the breast in women over thirty are malignant, and that on the doctrine of probabilities every tumor of the breast is malignant until proved innocent. If we can only get early diagnosis and treatment, the severity of our work on the chest wall will be diminished, but we consider the removal of the axillary and subclavicular glands an absolute necessity, if a permanent good result is to be expected. The amount of skin necessarily removed depends upon the variety of carcinoma and the direction of its most active growth, but this is a more important matter pathologically than surgically. The surgeons are justified in saying: Give us a chance, and give it to us early, and we will improve your statistics. Do not wait until you can feel enlarged glands in the axilla. Do not wait at all, and we will try to make the percentage of cures approach the best percentage of immunity from local recurrence after operation.

Influenza is beginning to assume epidemic form in and around New York. Thus far the cases have been of a comparatively mild type.

SEX IN CRIME.

A VIGOROUS article was contributed to one of the magazines a short time ago, endeavoring to show that woman is the physical equal of man. The view that she is mentally in no way his inferior has long been held by a large number of people. The great majority of persons, however, still retain the old common-sense opinion that woman, in spite of the evidence she has been affording within the past few years of her ability to shine in various branches of athletics, is not nor is she ever likely to be the successful rival of man in physical prowess. As to the comparative mental powers of the sexes, the question is a much more open one, some authorities contending that man in this respect does not excel his weaker sister, while the mass of testimony is against this judgment. Whatever the difference of opinion may be on the foregoing points, there never has been a valid objection advanced to the claim that in the excellencies of her moral attributes woman far surpasses the coarser male. The right of woman to this position is now challenged, and, in an article published in the *International Journal of Ethics*, Miss Frances Alice Kellor, of the University of Chicago, endeavors to convince her readers that their long-cherished belief in woman's moral superiority rests on no firm basis. Miss Kellor begins with these words: "Those who view superficially the psychical and physical differences existing between man and woman, and those who tenaciously hold the theory of separate creation, are the most ardent supporters of a belief which has become quite general, that woman was created from a finer clay, and is inherently more moral, more virtuous, and more æsthetic than man. Accordingly she is held to be less criminal, and apparently statistics sustain this view. Is woman's apparently less degree of criminality attributable to this congenital moral superiority, or is it due to sexual and social considerations and conditions over which she has no control, such as her having been selected as the anabolic organism, having had the burden of parturition placed upon her, and having been the favored sex in the progress of civilization? Have not these facts combined to render her life one of restricted activity and slavery, rather than one of freedom, activity, and independence; and are not the latter necessary elements for an extended and varied commission of crime? One prominent class of anthropologists considers woman as midway between child and man in her development."

It is then pointed out that in estimating the prevalence of crime for the purpose of comparison between women and men, statistics are misleading and manifestly partial to women, for the reason that women are less rigorously prosecuted, judgments against them when indicted are more difficult to obtain, and their punishments when convicted are less severe. Geddes and Thompson say that the greater amount of criminality in man is remotely due to his more katabolic nature. The most interesting part of Miss Kellor's paper is that which treats of the distinctively biologic considerations, and among them it is shown that women are physically incapable of committing many of the crimes with which men are charged, and they therefore resort to subtle rather than to violent methods. Woman's incentives to many crimes differ from those of men, being due to emotional causes rather than to those arising from economic, social, and political conditions, and this because woman's emotional nature has been developed to a greater extent. The criminal age in woman is less than in man, depending upon functions peculiar to women. This operates particularly in such crimes as abortion, infanticide, etc. Attention is called to the fact that women possess less sensitive organisms than men, as evidenced by the greater fortitude with which they endure pain and privation; and, lastly, the causes leading to a greater prevalence of crime among unmarried women are explained thus:

(1) Maternity operates to a greater extent than paternity in preventing crime.

(2) The sexual indifference of women, particularly mothers, in whom passion is held in abeyance by the demands and drains of motherhood, operates to prevent crime.

(3) The greater predominance of religion among women, owing to their more superstitious natures and unwillingness to yield faith to reason.

(4) Married women are less subjected to the influences incident to a struggle for subsistence, their energy being largely given to domestic and social duties.

The article is throughout suggestive and well expressed, and the subject is one that could be properly entered into only by a woman. The sex problem is daily looming larger before our eyes, women are entering into competition with men in every branch of life, and, as many think, unduly usurping men's duties, so that it is well that the matter should cease to be regarded from a sentimental standpoint, but should be judged fairly and squarely upon its merits.

News of the Week.

A Death from Football Injuries occurred the first of this month in Athens, Ohio. The victim was the quarter-back in the Ohio University eleven.

Scarlet Fever in an Institution.—The officers of the board of health have established a quarantine against the House of Industry in this city, owing to the presence of three cases of scarlet fever among the inmates.

Mitigating City Noises.—Boston objects to discords, and the police of that city have therefore issued an edict that all the street organs must play in tune or not at all. In accordance with this ukase all the hurdy-gurdy players and organ-grinders of the city were summoned one day last week to grind out their full quota of tunes before the music committee of the city, the police board, and invited guests with musical ears. The music-dispensers whose machines were out of tune were told that they could get no licenses until their organs had been put in tune again, and, mean-

time, they were warned not to play on the streets. If now the police will publish another regulation enforcing the tuning of all the pianos and forbidding the playing upon them except at specified hours, the Bostonese will be the envy of all with ears and nerves.

Dr. P. J. McGowan, of this city, surgeon of the New York Naval Reserves, serving during the late war on the *Yankee*, was presented with a loving-cup by a number of medical friends on Thanksgiving-day.

Born on the Top of a Street Car.—Dr. E. A. Lightburne writes in *The Lancet* that he was called a few days before to attend a woman who was about to be confined on the top of a tramcar in Bow-road, London. On getting there he found the car on a siding and surrounded by a cordon of police to keep the crowd at a respectful distance. With the assistance of the police matron and a bull's-eye lantern everything passed off very satisfactorily, the woman being safely delivered of an infant weighing eight and one-half pounds.

Small-pox in Cuba.—The latest reports from Cuba announce that the epidemic of small-pox in Holguin and Gibara has been checked as a result of the thorough and efficient sanitary regulations established by Dr. Woodson. Vaccination and isolation have been strictly enforced. In Holguin alone two thousand cases have been isolated and eight hundred persons vaccinated. By order of Colonel Hood notices have been posted in various towns in explanation of the purpose of vaccination, since in numerous instances opposition was met with among the more ignorant natives.

Obituary Notes.—Dr. Charles H. Hammett, of Washington, D. C., died at his home in that city on November 22d, of chronic nephritis, at the age of sixty-three years. He was a graduate of the medical department of the University of Georgetown in the class of 1856, and was formerly health officer and coroner for the District of Columbia.—Dr. Eugene Marie Berjot, of New Orleans, died in that city on November 27th, at the age of eighty-two years. He was born in Paris and was a godson of Lafayette. His father was a member of the French Assembly which condemned Louis XVI. to death. He served as a surgeon in the French army in Algeria and afterward practised for a time in Cuba. About thirty years ago he removed to New Orleans, where he had since resided. After settling there, he obtained, in 1869, a degree from the New Orleans School of Medicine, since extinct.—Dr. D. A. McTavish, of West Bay City, Mich., died at his home in that city on November 17th, of tuberculosis, after an illness of several months' duration. He was born at Glencoe, Ontario, in 1855, and studied medicine in Toronto and Edinburgh. He settled first in Kawkawlin, Mich., in 1882, but removed to West Bay City in 1887, and practised his profession there up to within a few weeks of his death.—Dr. Edwin H. Pierce, of Christiansburg, Va., died suddenly in a hotel in this city a few days ago. He had come to New York to take a course of post-graduate study.—Dr. William Molesworth, of Brooklyn, died at the Long Island State Hospital after an illness of nearly two years. He was born in Ohio sixty-eight years ago, and practised his profession in that State until 1874. He then came to New York and went into business.

Midwifery in New York.—According to the one hundredth annual report, recently issued, of the Society of the Lying-in Hosptial, out of the 51,117 births reported by the board of health for the year ending October 1, 1898, in the borough of Manhattan, 23,892 mothers were dependent on the care of midwives, and only 27,225 were treated by physicians.

Spread of the Plague.—A cable message from United States Consul Gibbs at Tamatave, Madagascar, received in Washington last week, announced that the bubonic plague had appeared at that place.

Measles in the Hebrew Orphan Asylum.—On November 5th, measles broke out among the inmates of the Hebrew Orphan Asylum in this city. Fifteen of the children, between six and eleven years of age, were attacked and were isolated in the asylum hospital. A quarantine was also established against the institution. The repressive measures were successful, and it is now stated that all the children have recovered and no new cases have developed for several days.

School-Board Physicians.—The president of the board of education recently announced the appointment of a number of physicians to examine physically applicants for teachers' licenses. According to the new regulations of the board, these physicians will number ten for the boroughs of Manhattan and the Bronx, two for Queens, two for Richmond, and five for Brooklyn. They are to be appointed in November of each year, and the certificate of one holds good in all the boroughs. The fee is not to exceed $3, and is to be paid by the board of education, instead of by the applicant as heretofore. The following is the list: Manhattan and Bronx—Drs. Samuel M. Brickner, A. M. Jacobus, Vanderpoel Adriance, Alexander Lambert, P. J. Lynch, Matthias Nicoll, Jr., J. R. Tillinghast, Nathan B. Van Etten, Josephine Walker, W. Gill Wylie. Brooklyn—Drs. D. G. Bodkin, Fred E. Hamlin, Frank R. Newman, J. H. Raymond, W. S. Searle. Queens—Drs. W. J. Burnett and J. C. Wharton. Richmond—Drs. William Bryan and George P. Jessup.

A Plague Scare in San Francisco.—Alarm was caused recently in San Francisco by the report that a death from the bubonic plague had occurred in Chinatown. The report was started by the Chinese, who were terrified by the death of three of their countrymen of pneumonia. They thought the disease must be the plague and that it was sent to them in punishment for the building of a tower on the Hall of Justice near by. So when a fourth death occurred the Chinese were sure the plague was upon them, and they communicated with the city authorities in the hope that the municipal building would be razed to the ground. Thus they believed the evil spirits would be placated and Chinatown saved from the plague.

The board of health officials made an autopsy and found that the cause of death was nephritis and that there was nothing whatever to indicate plague.

Maintaining a Nuisance on Barren Island.—The mayor has called the attention of the board of health to a report made to him by a special committee of the Anti-Barren Island League, regarding the nuisances there. Complaints have been made that the business carried on at Barren Island has been of such a character as to be a public nuisance and the cause of sickness to people and damage to property near by. The mayor asks the board of health to take the matter up in time so that the nuisance can be abated before the warm weather, and also that those affected (if an order of removal is made) may have an opportunity to secure other locations.

The Health of the Army has improved greatly since the cool weather set in and the flies have perished. According to reports received by the surgeon-general the last of November, the hospitals at Chickamauga, Lexington, and Jacksonville have been closed. The general hospital at Fort McPherson, Ga., has only 200 patients remaining, and reports 423 vacant beds. The Josiah Simpson Hospital, at Fort Monroe, has 400 vacant beds. The general hospital at Fort Myer, Va., has 350 vacant beds and only 162 patients remaining. The hospital at Fort Thomas, Ky., which recently received the sick from Camp Hamilton, reports 371 in hospital and 103 vacant beds.

Dr. Guiseppe Sanarelli, the discoverer of what has been assumed to be the microbe of yellow fever and also of a serum proposed for the cure of the disease, has been offered by the Italian minister of public instruction, Dr. Baccelli, at the suggestion of the medical faculty of the university, the chair of hygiene in the University of Bologna, left vacant by Professor Roncati.

Typhoid Fever prevails extensively among the troops at Honolulu, reports dated November 23d stating that there were over three hundred cases there at that time.

Health Conditions Better at Manila.—A despatch from General Otis, commanding at Manila, states that there has been a noticeable improvement in the health of the troops during November. On the last day of that month the percentage of sick was $10\frac{1}{6}$ as against $12\frac{1}{5}$ on October 31st. The deaths during November were twenty-six, during October forty-five. One-third of the present sick are suffering from typhoid and malarial fever, one-sixth from intestinal troubles, and in the remaining fifty per cent. the ailments are slight in character.

The Health of the Empress of Germany. — An English weekly society journal which is usually well informed has the following in its issue of November 5th: "A very grave rumor—which I mention with all reserve—is creeping about to the effect that the real reason for the journey of the German Emperor and Empress to the Holy Land is to be found in the fact that the Empress has fallen a victim to consumption, and that nothing but a prolonged visit to a particularly mild climate can save her life. To outward appearance there seems to be some foundation for the story. For two years the Empress has been gradually losing weight and strength. She now weighs but one hundred and twenty-four pounds, and she was until lately a tall, finely built woman."

Conditions at San Juan, Porto Rico.—The commandant of the naval station at San Juan, Porto Rico, calls attention to the poor sanitary condition of the station. He recommends that measures be taken to prevent sickness, and says that it is important that the government make sanitary improvements before undertaking to put the station in better defensive condition.

The Condition of Havana.—The death rate in Havana continues very high, four hundred and forty deaths having been reported for the week ending November 24th. Dr. Brunner, sanitary inspector of the United States Marine Hospital Service in that city, reports that he cannot account for the continuance of the enormous death rate under the weather conditions existing. While the city is filthy and dirty in the extreme, he cannot see that the native population should be unusually affected by such a condition of affairs. An effort is to be made at once to clean the city, and General Greene has had a long conference with Marquis Esteban, mayor of Havana, regarding street cleaning. It was decided that the refuse should be loaded in scows, towed out to sea, and dumped several miles away. A sufficient number of scows and lighters are to be sent there by the United States Government for this purpose. President McKinley has also authorized from available funds the expenditure of $50,000 for cleaning the city, so as to make it as healthful as possible for the residence of soldiers and citizens. The cleaning will be done according to the recommendations which would have been made by the late Colonel Waring, had not his death forestalled a formal report to the War department. Most of the papers which Colonel Waring had intended to incorporate in his report have been secured by the War department, and they are said to form a very good basis on which to proceed with the sanitary arrangements at Havana from a scientific standpoint.

Koch's Disappointment.—The *British Medical Journal* quotes from *La Tribuna* of Rome a somewhat amusing story about Koch, who has been studying malaria in the hospitals of the Eternal City. In the Santo Spirito he came across a patient with pernicious malaria, admitted apparently in a dying state. He asked that "this body" might be kept for his examination. The next day he went intending to make the necropsy, and was amazed to find a living man sitting up in bed to all appearances cured. The "corpse" greeted the professor with a significant smile. The cure had been wrought by the intravenous injection of quinine, according to Professor Baccelli's method.

Reviews and Notices.

A Text-Book of Materia Medica, Therapeutics, and Pharmacology. By George Frank Butler, Ph.G., M.D., Professor of Materia Medica in the College of Physicians and Surgeons, Chicago, etc. Second Edition. Royal 8vo, pp. 860. Philadelphia: W. B. Saunders. London: Rebman Publishing Company. 1898.

The matter here presented has been too finely elaborated for the requirements of the acting physician, and much has been inserted which the student, bent upon speedily acquiring a knowledge of pharmacy and materia medica, does not need. Certain scientific publications should be prepared with the view of giving to the student or to the practitioner what each most needs, and when the attempt is made to accomplish this in one and the same work the result is often unsatisfactory to both. Materia medica is one of the subjects which might well receive separate treatment for the two classes of readers. A careful scheme has been mapped out and adhered to in both portions of the work, which results in a certain monotony of headings, definition, etc. Accuracy and method have been placed before literary attractiveness.

Such advances as have been recently made in pharmacology and the physiological action of remedies are noted in the present edition. In place of the chapter on definitions there has been substituted one on the untoward effects of drugs; a question well worthy of discussion. Serum therapy has received further attention and is brought up to date. Naturally, the great bulk of material is in the nature of compilation.

Diseases of Women. A Manual of Gynæcology. By F. H. Davenport, A.B., M.D., Assistant Professor in Gynæcology, Harvard Medical School; Assistant Surgeon to the Free Hospital for Women, Boston. Third Edition, Revised and Enlarged. With 156 Illustrations. Pp. 391. Philadelphia and New York: Lea Brothers & Co. 1898.

The third edition of this manual differs from its predecessors more especially in the fact that the author has added surgical methods of treatment to the non-surgical. He continues to omit most of the pathology and rare conditions of the subject, thereby making the work better adapted to students and general practitioners. It is a practical, concise, well-illustrated volume.

The recent researches of Prof. J. Whitman Williams, of the Johns Hopkins University, published in the *American Journal of Obstetrics*, upon the question of the presence or absence of pathogenic germs in the vaginæ of pregnant women, serve to reconcile the various contradictory reports which have for the last few years been brought before the profession.

In view of the fact that his conclusions are the reverse of what he formerly believed, they have an added interest. His later observations have shown that hitherto many published reports, among them his own, are valueless simply because a faulty technique had been employed, and that when cultures were taken with regard to the prevention of contamination of the vagina, especially by the mucus from the hymen, none of the usual pathogenic cocci could be demonstrated, thus substantiating the claims of Krönig. He has found this to be true, whether the secretions were normal or abnormal. Yeast, the staphylococcus epidermidis albus, an anaerobic streptococcus, and what he considered the gonococcus were present, but inasmuch as these are not found in puerperal septicæmia, his conclusions do not seem to be overthrown. He admits that gonococci may extend, during the puerperium, from the cervix into the uterus and tubes, and does not deny that in very rare instances the vagina may contain bacteria which may give rise to sapræmia and putrefactive endometritis by auto-infection, but claims that this fact remains yet to be demonstrated. Death from puerperal infection he ascribes to a lack of aseptic preparation of the physician, the nurse, or the external genitalia, and the infection always is due to external causes.

No more potent evidence could be found against meddlesome midwifery, the ante-partum douche, and unnecessary digital examinations. Most certainly, if auto-infection is impossible, we should try to avoid the slightest chance of introducing germs by the hand and by instruments, or, what is more to the point, of conveying them from the septic vulva into the vagina. Nature has supplied mothers with the necessary antiseptic protective secretion, upon which our art cannot improve; rather do our antiseptic fluids seem positively harmful. The plea that we should cultivate greater skill in diagnosis by external palpation, and that when digital examinations are unavoidable be extremely careful in cleaning the vulva as well as the hand, certainly gains added force in view of these recent investigations.

The Gospel According to Darwin. By Woods Hutchinson, A.M., M.D. Chicago: The Open Court Publishing Company. 1898.

The purpose of the author of this work has not been to present a new religion, but rather briefly to outline some of the influences affecting human hope and happiness. The term Darwinism has been used in a broad sense, and an effort is made to show that the good predominates over the evil in this life and that the natural is as wonderful and admirable as the supernatural. The thinking reader, of whatever religious conviction, will find little to condemn and still less to which to take serious exception in these pages. Though at times outspoken and unequivocal, the author maintains throughout his arguments a reserve and delicacy of expression, indicative of a desire to offer no offence, for, as he says, "Darwinism has no quarrel with religion, only with its excesses." The author, as a physician and man of scientific methods, stands out prominently in many chapters; and one is impressed at almost every page with the wide range of reading and the thoughtful consideration of personal experience and observation which the writer must have devoted to the preparation of these essays. The omnipotence of good, the holiness of instinct, the beauty of death, love as a factor in evolution, courage as the first virtue, the strength of beauty, the value of pain, are all chapters filled with germs of thought and gems of expression, whose effect should be only beneficial to the reader, whether or not the logic which they clothe is accepted or acceptable. The work of two hundred and forty pages is well written and entertaining throughout, and physicians should be especially interested by it for other reasons than that it is by one of their own profession.

The Essentials of Histology, Descriptive and Practical. For the Use of Students. By E. A. Schäfer, LL.D., F.R.S., Jodrell Professor of Physiology in the University College of London, Editor of Histological Portion of Quain's "Anatomy." New Fifth Edition, Revised and Enlarged. With 392 Illustrations. Philadelphia and New York: Lea Brothers & Co. 1898.

This manual of minute anatomy by the editor of the histological portion of Quain's "Anatomy" has long been favorably known both to teachers and to students. While its main purpose is to furnish practical directions for the microscopical examination of the tissues, it serves also as an elementary text-book of histology, presenting the essential facts of the science in an attractive way, and shorn of the discussions of conflicting theories and vague hypotheses that needlessly complicate the study for beginners. The subject matter is divided into forty-six lessons, each prefaced by easily comprehensible and explicit directions for the preparation of the material under consideration, and fully covering all of the ordinary technical methods.

The excellence and profuseness of the illustrations obviate the necessity for wearisome pages of letterpress, the many schematic drawings being well calculated to facilitate an understanding of the more complex structures. Altogether the book fulfils a distinct purpose, and we do not know of a better one to put in the hands of the beginner, while the more advanced worker will find it a useful synopsis of laboratory methods.

Renal Growths. Their Pathology, Diagnosis, and Treatment. By T. N. Kelynack, M.D., M.R.C.P. Lond., etc. Illustrated. Edinburgh and London: Y. J. Pentland. New York: The Macmillan Company. 1898.

The author of this work upon "Renal Growths" has made a very excellent contribution to the mass of literature which has accumulated in the last twenty years upon this and allied subjects. In his first chapter he gives very good reasons for the difficulty in arranging a thoroughly satisfactory classification of the neoplasms of the kidney, and presents us what he considers to be the arrangement which is least objectionable; that is, Newman's. This appears to be the best yet given, and is certainly a useful one. The most important tumors of the kidney, sarcoma and carcinoma, are thoroughly discussed, and our knowledge of the subject is well arranged

rather than greatly increased; much useful statistical information is added. Many cases are cited, and it is a pleasure to note how often the names of Americans appear in the bibliography of the subject. There are an important chapter upon disease of the adrenals and many illustrations, most of them photographic reproductions which are fine specimens of the printer's work but of doubtful didactic value. In that part of the book devoted to treatment, all that has been done in this line of work is described, and in spite of many discouraging results we are glad to see that the author is not pessimistic, and that he feels justified in hoping that with earlier and more accurate diagnosis the number of cures after operation will increase.

A Clinical Text-Book of Medical Diagnosis for Physicians and Students. By Oswald Vierordt, Professor of Medicine, University of Heidelberg, etc. Authorized Translation with Additions, by F. H. Stuart, M.D., etc. Fourth American from the Fifth German Edition, Revised and Enlarged. Philadelphia: W. B. Saunders. 1898.

The appearance of a new edition of so well known a work as Vierordt's "Medical Diagnosis" needs hardly more than passing comment. The book is excellent in every way and its new edition brings it up to date. Its position is so well established as a book of reference among medical men that we need not go into details as to its good qualities. There are nearly two hundred illustrations in this edition, which are useful additions to the text, and the work of the translator has been well done. All the sections of the book are good, but we might specify that on the nervous system and that on the digestive organs.

Retinoscopy, or the Shadow Test. By James Thorington, M.D., Adjunct Professor of Diseases of the Eye, Philadelphia Polyclinic, etc. Second Edition, Revised and Enlarged. Philadelphia, P. Blakiston, Son & Co. 1898.

This little manual deserves a second edition and will undoubtedly pass through many more. It presents a clear, terse, and thorough exposition of an objective method of determining refraction errors which is deservedly increasing in popularity. In our opinion the author is amply justified in declaring that its great value in nystagmus, young children, amblyopia, aphasia, and in examining illiterates and the feeble minded, cannot be overestimated, and we agree with him in reminding those who attempt retinoscopy, fail, and ridicule it, that the fault is behind and not in front of the mirror. The book is well printed and usefully illustrated.

A Treatise on Aphasia and Other Speech Defects. By H. Charlton Bastian, M.D., F.R.S. New York: D. Appleton & Co.

The attention that aphasia is now attracting is shown by the fact that no fewer than five exhaustive treatises on this subject have been published in the English language within as many years. Dr. Bastian is well known to students of language the world over. His contributions, the "Physiology of Thinking" and the "Brain as an Organ of Mind," put him, a generation ago, well to the fore as a profound and philosophic thinker. The present volume will materially enhance that reputation. Although some of his contentions are at variance with the beliefs of many of the most trustworthy exponents of the genesis of speech, the vast majority of his conclusions are in keeping with the teachings of modern physiology and psychology. Bastian believes that the word centres are four in number: visual, auditory, glosso-kinæsthetic, and cheiro-kinæsthetic (writing centre); and his hypotheses and argumentations are based upon such existence. This view has been warmly contested by Collins in his recent work, the "Genesis and Dissolution of the Faculty of Speech," which was reviewed in these columns a few months ago. In that book the existence of a specialized centre for writing was impugned; nor do we see that Bastian has proved his point concerning its existence. Although its position is definitely depicted in his diagrams, yet his words on page 18 seem strangely at variance: "The situation of the cheiro-kinæsthetic centre cannot be localized with nearly so much confidence. The tendency for some years has been to follow Exner, who believes it to be situated in the posterior part of the second frontal gyrus, though, as we shall see later, the evidence in favor of this localization is at present almost non-existent." In the light of this frank statement it is not easy to comprehend, when no evidence is brought forward to show the allocation of such a centre, the author's insistence upon its existence.

The book abounds in a wealth of illustrative cases; it will prove a veritable mine for workers in this field, and one that will repay careful and studious examination. It is replete with most suggestive thought, and it cannot fail to mark an epoch in the development of the subject which it treats.

Therapeutic Hints.

Phthisis.—Inhalations of formaldehyde mixed with carbonic-acid gas.—Cornil.

Typhoid Fever.—Banana diet is recommended, because it is easily digested, almost wholly absorbed from the stomach, and is very strengthening.—Ussery, of St. Louis.

Impacted Cerumen.—Peroxide of hydrogen acts rapidly in disintegrating the solid cerumen; in a few minutes after its use the wax can readily be removed from the ear by syringing.—W. D. Turner.

Tapeworm.—

℞ Olei tiglii ..... gtt. i.
Chloroformi ..... gtt. xxx.
Glycerini ..... ʒ i.
M. S. Give at night on an empty stomach; on the following morning give a dose of castor oil.

Cough in Measles.—

℞ Sweet spirits of nitre ..... ʒ ij.
Muriate of ammonia ..... ʒ ss.
Dover's powder ..... ʒ i.
Simple syrup ..... ʒ iij.
M. S. Shake well. Dose. A teaspoonful to a tablespoonful.
—J. D. Ebert.

Antiseptic Powder.—

℞ Pulv. camphoræ ..... 5 parts.
Pulv. bismuthi subnitrat ..... 20 "
Pulv. acidi salicylici ..... 20 "
Pulv. iodoform ..... 55 "
M. S. Apply to wounds and ulcerous surfaces.
—Cazozzani.

Sore Nipples.—

℞ Ichthyol ..... ʒ i.
Lanolin ..... ʒ i¼.
Glycerin ..... ʒ i¼.
Olive oil ..... ʒ iiss.
M. S. Apply.
—Oehren.

Diarrhœa.—

℞ Tr. opium ..... ʒ ss.
Tr. rhubarb ..... ʒ ss.
Comp. tr catechu ..... ʒ i.
Ol. sassafras ..... ♏ xx.
Comp. tr. lavender ..... q.s. ad ʒ iv.
M. S. One teaspoonful every four hours for adults.
—Loomis.

Burns and Scalds.—

℞ Acidi salicylici ..... ʒ i.
Olei olivæ ..... ʒ viij.
M. S. Apply to the burn, covering with lint.
—Bartholow.

Fetid Chronic Laryngitis.—

℞ Potassii permanganatis ..... gr. ij.
Aquæ destillatæ ..... ʒ ij.
M. S. Use in atomizer several times daily.
—Sajous.

Aortic Stenosis.—

℞ Liq. potassæ ..... gtt. x.
Tinct. veratri viridis ..... gtt. v.
Syr. zingiberis ..... ʒ ss.
Aquæ ..... q.s. ad ʒ i.
M. S. Use three times a day.
—DaCosta.

Laryngeal Tuberculosis.—

℞ Zinc chloride solution ..... 2–5 per cent.
S. Use by the sclerogenic method of interstitial injection.
—Castex.

Mercurial Stomatitis (Salivation).—

℞ Acidi lactici..... ℥ xv.
Magnesii carb..... ʒ i.
Ol. menth. pip..... gtt. x.
M. et ft. pulv.

Or:

℞ Acidi salicylici..... ʒ ss.
Magnesii carb..... ʒ i.
M. et ft. pulv. S. The teeth should be carefully cleaned several times a day with one of the above powders.

—Otto Roth.

"Rotterinum."—

℞ Acidi citrici,
Thymoli.....āā gr. iss
Acidi salicylici..... gr. x.
Acidi boracici..... gr. xlv.
Zinci chloridi,
Zinci sulphocarbolatis.....āā gr. lxxv.
M. et ft. pastilli No. iv.

This is a disinfectant and antiseptic mixture, officially recommended in Bavaria as a substitute for carbolic acid and corrosive sublimate. To make a proper strength solution dissolve one pastil in a quart of water.—Roth.

Exophthalmic Goitre.—Symptoms of exophthalmic goitre are believed to show a marked preference for the right side of the body, especially in the early stages of the disease. Fitzgerald, of Dublin, who has attempted to explain this preference, believed the tachycardia to be also a right-sided symptom, because the right vagus is probably more concerned with the inhibition of the heart than the left, and also because the heart "soon after its appearance in the embryo projects to the right side, where it comes into relationship with the corresponding vagus."—Victor Miller.

Dysmenorrhœa.—A mixture of caffeine, potassium bromide, and tincture of gelsemium, administered for a few days before menstruation, is of much value in the treatment of dysmenorrhœa.—H. Talley.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, December 1, 1898.

Edward G. Janeway, M.D., President.

Nomination of Officers.—*Presidents*, Drs. William H. Thomson and Egbert H. Grandin; *Vice-President*, Dr. Herman Knapp; *Trustees*, Drs. E. G. Janeway and A. Jacobi; *Committee on Library*, Dr. A. Caillé; *Committee on Admissions*, Drs. N. J. Hepburn, J. W. Brannan, Reginald H. Sayre; *Treasurer for the Trustees*, Dr. W. F. Cushman; *Five Delegates to the State Society*, Drs. J. H. Huddleston, Egbert Le Fevre, Louis Faugères Bishop, A. P. Zemansky, George H. Cocks, J. Arthur Booth, Emil Gruening, W. A. Ewing, James Ewing, W. W. Gilfillan, and Richard Wiener.

The meeting was in charge of the section on ophthalmology and otology.

Certain Functional (Chiefly Hysterical) Conditions of the Eye.—Dr. B. Sachs read a paper with this title. He said that hysteria at the present time was recognized by symptoms so positive that one could positively say that the disease was hysteria and nothing else. In the opinion of some there was in hysteria a distinct though functional derangement of the entire nervous system. According to others, hysteria was a psychical derangement. The distinctly volitional and purposive movements were most subject to hysterical derangement. When hysteria affected the peripheral parts of the body there might be sensory or motor disturbances. The chief symptoms were: (1) An altered mental state; (2) palsies, with or without contractures; (3) subjective and objective disturbances of sensation, such as hyperæsthesia and anæsthesia; (4) hysterogenic zones; and (5) typical convulsive attacks, occurring at irregular intervals. True hysteria, in the opinion of the speaker, was after all an infrequent disease, although it was on the increase because of the influx of a foreign population, in whom it was much more common. The deep reflexes were never lost in hysteria, nor were the electrical reactions markedly altered. Great variability in the symptoms was a strong argument in favor of the hysterical nature of an ocular affection. An unusual combination of ocular symptoms was also suspicious. The pupillary reflexes should theoretically be beyond the control of the will, but a number of observers had reported disturbances of these reflexes in purely hysterical subjects. But it must be remembered that hysterical subjects might also suffer from tabes or from syphilis.

Hysterical Motor Affections.—Among the spastic conditions produced by hysteria were mentioned spasm of convergence, internal squint, and myosis. Conjugate deviation of both eyes was commonly observed in hysterical seizures, but it was rare for it to persist for any considerable period of time. Hysterical ptosis might be the result of spasm or paralysis. In his own experience hysterical ptosis was as frequently due to spasm as to palsy. The question of the existence of hysterical paralysis of the external ocular muscles had given rise to warm controversies among ophthalmologists. He had already presented a patient exemplifying this affection. The patient was a man, fifty-one years of age, who suddenly lost his vision while at the funeral of a friend. A complete examination of the man did not reveal any palsy in any other part of the body. The only other symptom was a complete left hemianalgesia. A few weeks ago it was discovered that the ptosis had entirely disappeared, and that he could move his eyes much more freely in every direction. The photophobia had entirely disappeared and the hemianalgesia was nearly gone. He had been treated last May by hypnotic suggestion, but he attributed his improvement to the fact that during the summer he had stumbled and received a considerable shock.

Hysterical Sensory Affections.—Among the sensory affections of the eye due to hysteria were: concentric limitation of the visual fields, disturbance in the perception of color, amblyopia, and amaurosis. Concentric limitation of the visual field was one of the most common of the stigmata of hysteria. Lasting hemiopia is certainly an extreme rarity in hysteria. If the diagnosis of hysterical amaurosis was to be upheld, several conditions must be established, *e.g.*, the ophthalmoscopic findings must remain negative for a prolonged period of time, organic disease must be excluded, and there should be present other signs of hysteria. The existence of the unilateral form of hysterical amaurosis was acknowledged by all. The speaker said that in his own experience he had met with considerable difficulty in making the differential diagnosis between hysteria and retrobulbar neuritis.

Dr. H. D. Noyes said that in his experience he had not often met with cases of muscular trouble which he could distinctly assign to hysteria. How strongly mental impressions alone could influence a patient in his assertions of blindness had been very forcibly brought to his mind some years ago in the case of a boy, ten years of age. While coming from Boston the boy had received a slight blow over the eye, and no amount of assertion could convince him that the vision was not destroyed on that side, although the ophthalmoscopic examination was entirely negative. The vision of the other eye had already been impaired by organic

disease. By bandaging the supposedly blind eye and insisting upon the boy getting around as best he could with his organically diseased eye, he was cured within three days. Dr. Noyes said that he did not consider the differential diagnosis between hysterical amaurosis and retrobulbar neuritis so very difficult. Pflüger had recorded cases of hysterical hemianopsia with the symmetrical segmental defects which pointed not to the chiasm but to the occipital lobes as the probable source of the trouble. These cases might exhibit no ophthalmoscopic appearances, and, in the course of time, disappear. Among his own cases he could recall three instances of hysterical amblyopia. These were described. There could be no question that in these cases of hysterical amblyopia central vision was impaired.

Dr. C. L. Dana said that he had entertained some scepticism regarding the reality of the affections forming the subject of the paper. He was of the opinion that there could not be hysterical paralysis of any of the muscles which could not be dominated by an idea; one could not, for example, conceive of hysterical paralysis of the phrenic nerve. He had just looked over his records of forty-five cases of hysteria in which there could be no doubt about the existence of hysteria, and in which he had made notes of the ocular conditions. Of this number there were twenty-three presenting marked ocular symptoms, the most characteristic one being concentric limitation of the visual field. In none of them had he observed anything like paralysis. Among the whole forty-five cases there were only three in which decided muscular affections of the eye were noticed. In some there were diplopias, such as resulted from the slight muscular insufficiencies occurring in neurasthenic conditions. In his own experience, therefore, there had been no such thing as hysterical ophthalmoplegia, and, if it existed, it must be very rare. The hysterical ptoses that he had seen had been very easily dispelled. He believed hysteria to be a disease of the mind having its seat in the cortex of the brain, and especially in the associative centres of the cortex. From this theoretical conception of the disease it seemed that it was next to impossible for one or two eye muscles to become affected in the manner referred to. It was another matter with hysterical sensory affections. In hysterical limitations of the visual field it would be noted that the field was almost invariably larger on one side than on the other. Hemianopsia might persist for months after a migraine, without there being any connection between it and hysteria. Hysterical blindness of one eye he had seen.

Dr. Herman Knapp said that he had never met with a case of hemianopsia which was not either imaginary or the result of some disease. This brought up the question of conscious and unconscious simulation. A very important class was that of nervous asthenopia with concentric limitation of the visual field. These patients could not read well for any length of time, and the limitation of the field varied rapidly. When concave glasses were placed before these eyes the vision was greatly improved. If convex glasses were substituted, the patients did not see so well, but better than without any glasses; and when the two kinds of glasses were placed before the eyes at the same time, the vision was immediately made $\frac{20}{20}$. It would seem, therefore, that these persons must labor under some peculiar nervous impulse. In these cases there was no conscious simulation, and they recovered rapidly if assured that there was no organic disease present.

Dr. Thomas R. Pooley said that this discussion reminded him of the remark made by the astute clinician, Dr. Stokes, of Dublin, that there was no nervous symptom which might not, and did not, occur without any appreciable symptom of the nerves, brain, and spinal cord. Dr. Pooley said that he was unable to see what a hysterical lesion was. It seemed to him very difficult to assume that a lesion which must be situated far back, and be the result of only a hysterical condition, should affect only the extrinsic muscles of the eye. He had observed a paresis of the abducens, which was said to be the result of hysteria. In one of these cases, presenting distinct hysterical manifestations in other respects, there was a strange hesitancy in the movement of the muscles as the eye followed his finger. In another case there were, in addition, diplopia in both outer fields of fixation and nystagmus. It was his belief that there was great difficulty in distinguishing between what had been termed hysterical amblyopia and neurasthenic amblyopia, with restriction of the field of vision. These cases presented not only concentric limitation of the field of vision, but also a limitation of the color field, but not according to the rule. There were also transient scotomata, evidently the result of exhaustion of the retina. It was this rapid exhaustion of the retina which seemed to be the cause of the phenomena observed in these so-called hysterical cases. He believed with Dr. Knapp that there was no true blindness in these cases of supposed hysterical amaurosis; certain it was that these patients could find their way about in a space to which they were not accustomed.

Dr. Edward D. Fisher said that in functional nervous diseases it did not seem that one would be apt to find the eye affected. Almost all hysterical paralyses came on suddenly and without adequate cause, and the resulting paralysis was more severe than was observed when the cause was an organic lesion. It was difficult to conceive of the paralysis of a group of muscles, except when acting in pairs.

Quinine Amaurosis and Brain Tumors.—Dr. E. G. Janeway said that he had once seen a patient who gave a history of having become blind immediately after taking forty grains of quinine. He had made the autopsy in that case, and had found a glioma of the walls of the third ventricle of the brain. Having searched the literature of the subject at that time, he had been led to the opinion that tuberculous meningitis and other organic diseases had been responsible for many cases that had gone into the literature as examples of quinine amaurosis.

Dr. Emil Gruening said that a competent ophthalmologist should not be led into making a diagnosis of quinine amaurosis when the condition was really due to a tumor of the brain, for the symptoms of the former were sufficiently distinct and characteristic. He had no theories to offer as to the existence or non-existence of hysteria. In one case of supposed blindness in a teacher a cure was effected in three days by giving him a shower-bath twice daily.

Dr. Sachs said, in closing, that he had no desire to pose as an apostle of hysteria, but hysteria was a reality, and the oculists who had spoken had apparently not taken the trouble to look for the hysterical stigmata in their cases.

SECTION ON OBSTETRICS AND GYNÆCOLOGY.

Stated Meeting, November 25, 1898.

E. B. Cragin, M.D., Chairman.

Fibroma of the Uterus—Mistaken Diagnosis.—Dr. Balleray presented a fibroma removed from a woman, twenty-nine years of age, who had been married five years and had never had any children. She had always suffered at the menstrual periods, and since her marriage this pain had been more severe, and associated with attacks resembling those of catalepsy during the first twenty-four hours of each period. There was also considerable pain in the back. Ex-

amination under ether showed a tumor pressing on the rectum, but decidedly movable. It was thought to be a fibroma of the ovary, but when the abdomen was opened it was discovered that the growth was connected with the uterus. By making a double flap it was not difficult to extirpate the tumor. The case was presented chiefly because of the error in diagnosis.

The Early Diagnosis of Cancer of the Uterus.—Dr. Balleray also presented a uterus which he had removed two weeks before from a patient fifty-seven years of age. She had had only three or four attacks of bleeding from the vagina before coming under observation. The diagnosis was cancer of the cervix. This was the sixth case of cancer of the cervix that he had met with during the past year, and she was the youngest of the group, the oldest having been sixty-seven years old. This series of cases was interesting as tending to show that the family physician was now more alive to the early diagnosis of this condition than formerly. All of the patients had done well since the operation. He also referred to a woman, sixty-one years of age, in whom the cancer had not been recognized by her physician until the case was beyond operation. Her medical attendant had not only failed to discover the true nature of her trouble, but had jokingly remarked that she was becoming young again, as her courses had returned, and he would advise her to be married once more.

Tuberculosis of the Endometrium.—Dr. Philander A. Harris exhibited the uterus and appendages removed because of a diagnosis of tuberculosis of the endometrium. The patient was a woman nearing the menopause who had borne children. He had first seen her about eleven months ago, at which time there had been a cyst in the vagina, three or four inches in diameter. This had been removed, but she still complained of a feeling of discomfort in the pelvis. About three months later she began to menstruate excessively, the period being prolonged, and there being also some "spotting" between the periods. She was curetted last June, and the material was examined by Dr. Otto Ramsay, who reported the presence of tubercle bacilli. About two months unavoidably elapsed before the speaker had another opportunity for a careful examination, and then he had found an exudation on the right side of the pelvis, which had not been there in June. In view of the microscopical diagnosis he had, after consultation, removed the uterus and appendages.

Gall-stones Removed by Operation.—Dr. Harris also exhibited three gall-stones which he had removed from the gall bladder of a woman, forty years of age. The bladder was distended and its walls were thickened. The operation was done after the patient had suffered from pain and fever for about three weeks. She had previously had mild attacks of biliary colic. The bladder was sewed to the incision. Bile was discharged for about four weeks, and then the wound healed permanently.

Malignant Disease of the Uterine Body.—Dr. H. J. Boldt presented a fresh specimen showing malignant disease of the body of the uterus. The patient was fifty-six years old, and she presented the clinical features of a fibroid which had undergone carcinomatous degeneration. The diagnosis of fibroma of the uterus had been made not only by her attending physician but by another prominent gynæcologist of this city. On bimanual palpation a tumor, rather larger than the head of a child, could be felt. In the middle portion, anteriorly, was a softer area, which was taken to be a degenerating spot. On opening the abdomen the mass was found to consist of the uterus, with firmly adherent intestine, and above this was a mass of omentum which was rolled up into another hard tumor. This explained the error in diagnosis which had been made by three different gynæcologists.

Aneurism of the Uterine Artery.—Dr. Paul F. Mundé reported a case of aneurism of the uterine artery, which, so far as he knew, was unique.

Vesico-Utero-Vaginal Fistula—Unusual Complications.—Dr. Mundé also reported this case. (Both of these cases will appear in a future issue.)

Suburethral Abscess.—Dr. Mundé reported a case of suburethral abscess—*i.e.*, an abscess forming in the urethro-vaginal septum. He had not been able to find in any of the older books any mention of an abscess in this peculiar locality. Kelly, however, speaks of it, and states that the first operation for this condition was done in 1747. The patient of Dr. Mundé was a multiparous woman, seen by him last September. She complained of scalding urination, and of a mass which protruded through the labia. Examination revealed a swelling in the urethro-vaginal septum, about the size of an egg, having a smooth, tense wall. On pressing it, there was a spurt of irritating urine from the urethra. It was at first supposed to be a urethrocele, but on reference to Kelly's books the true nature of the condition was made clear. Mention of suburethral abscess had also been made in a recent book by Dr. Dudley. The treatment consisted in making a free incision through the sac of the abscess in the septum, washing it out with bichloride solution, curetting the cavity, then swabbing with iodide of phenol and inserting a drainage tube. The tube was left in for about two weeks. The abscess cavity completely healed.

Dr. P. A. Harris said that he desired to place on record a case of suburethral abscess brought to his attention about one year ago by Dr. Scribner, of Paterson. While the question of operation was being considered the abscess ruptured, and since then there had been a sinus discharging pus.

Dr. Robert L. Dickinson said that he had photographs of two such cases. One of these had been operated upon through the vagina. The route of infection became evident in these days of careful study of the urethra and bladder. He had noticed on removing Kelly's urethroscope from a bladder that very day that a drop of pus had escaped from the mouth of a gland in the urethro-vaginal septum. It was evident that if this opening became plugged, an abscess would develop in this situation.

Dr. Cragin remarked that he had met with a case of suburethral abscess similar to the one described by Dr. Mundé.

Functional Neuroses and their Relation to Diseases Peculiar to Women.—Dr. Hermann J. Boldt read this paper, in which he discussed only those neuroses which might be considered as purely reflex. The bountiful nerve supply of the genital organs being borne in mind, sufficient reason could readily be found for the causation of functional neuroses. He looked upon these neuroses as the result of a depraved condition of the nerve substance which could not be demonstrated anatomically. A woman predisposed by heredity to hysteria was more apt to develop it if her pelvic organs became deranged than if this did not occur. The more common occurrence of these neuroses at the present time might be explained in various ways. Weak and delicate girls were crowded with studies, and their intellectual training was pushed at the expense of their physical development. Young women impeded respiration by tight lacing, and interfered with the circulation in the lower extremities by wearing too tight garters. Hysteria might be termed a "cerebral neurosis," and its development required a proper soil. The predisposing soil being placed in the brain through heredity, physical or mental exertion, psychical disturbances, over-indulgence in alcoholic beverages, sexual excesses, or lesions occurring during childbirth might furnish the exciting cause. Psychical

disturbances certainly did their share toward the development of functional neuroses. It was wellnigh impossible to determine how much influence a coexisting pelvic abnormality had upon such a neurosis until such a patient had been under observation for some time. The functional neuroses of the skin associated with menstruation were quite prominent—*i.e.*, acne, rosacea, urticaria, etc. In this connection a case was cited in which a young girl suffered from menorrhagia and a troublesome eczema at each menstrual period. Examination showed no pathological condition to explain her excessive bleeding. In another case which he had observed, there was a reflex vasomotor neurosis dependent upon a displaced ovary. The chief features were that at her first menstruation, when thirteen years old, a purple discoloration had appeared on the upper extremity, with swelling of the right leg and foot. The limb became cold at the beginning of each menstrual epoch, and continued so during the period. There were differences in the measurements on the two sides, and the superficial veins and capillaries of the affected side were greatly distended. The severe pain in the right inguinal region, particularly during menstruation, was considered to be due to an enlarged and prolapsed right ovary. She was entirely cured of her dysmenorrhœa by correcting the malposition of the ovary, and with this the skin lesion disappeared.

Among the psychoses observed in women melancholia and hypochondriasis, occurring during the menopause, were prominent. These neuroses usually disappeared within a year or two after the climacteric. The speaker said that he had met with two such cases in which the condition was dependent upon the occurrence of an illegitimate pregnancy, as was shown by its prompt disappearance when the unfortunate girls were married to their seducers. The neurotic condition associated with nymphomania was well known to all physicians. He had seen one instance completely cured by the removal of the clitoris; on the other hand, he had reported several failures after this operation in this class of cases. Pelvic inflammation by pressure on the nerves caused changes in the circulation of the pelvis, and, reflexly, produced an evil impression on the nervous system. Displacements of the uterus might cause the most intense neuroses. A case was recalled of malposition of the uterus associated with marked suicidal mania. As habitual vomiting, tachycardia, cardialgia, and similar conditions sometimes disappeared after dilatation of a narrow cervical canal, the correction of a uterine displacement, or the cure of a diseased endometrium, we would not deny the connection between the neurosis and the lesion. Among the rarer forms of reflex neuroses was that in which the patient felt a painful sensation in the back or abdomen, and occasionally an attack could be produced by pressure on a pelvic exudate. Among the vasomotor neuroses the speaker mentioned hemicrania and that form of goitre occurring during pregnancy. In the majority of gynæcological patients the digestive system suffered. The differential diagnosis between gastric neurasthenia dependent upon pelvic derangement and so-called nervous dyspepsia was made by the fact that in the latter there was pain radiating over the entire abdomen and extending up even to the neck and head, when pressure was made over the epigastrium, which was not the case in gastric neurasthenia dependent upon pelvic derangement.

Medicinal and Hygienic Treatment.—Speaking of the treatment of these conditions, Dr. Boldt said that it was a serious error to give a long course of gynæcological treatment to neurasthenic patients having only a minor pelvic lesion, unless most careful attention was paid to the general health. In this class of cases he had found the bromide of gold and arsenic exceedingly useful. When given in doses of five drops, gradually increased to fifteen or twenty drops daily, the percentage of hæmoglobin rapidly increased. This medicine also had a decided effect on the inflammatory condition of the ovary, as he had frequently demonstrated during the past twelve years. Correction of the habits and diet, and exercise were necessary if one would successfully cope with the chronic constipation usually present in these cases. Abdominal massage was exceedingly useful here, but to be successful the physician must give specific instruction as to the mode of performing it. In arranging the diet, preference should be given to foods containing phosphorus, fat, and iron, unless there was some distinct contraindication. Patients afflicted with functional neuroses were benefited by appropriate physical exercises.

Surgical Treatment.—The surgical treatment, though exceedingly important, should never be employed except under the most positive indications, especially in patients exhibiting a marked hereditary taint. Only a very small percentage of such women had been benefited by castration. He deprecated operating for the cure of hystero-epilepsy or any other form of functional neurosis, unless it was possible to recognize some pathological lesions apparently directly connected with the neurosis. In three obstinate cases of migraine in which he had operated because of disease of the ovary, he had noted that the migraine had been cured by the operation. He asserted that more harm than good had resulted from oöphorectomy in cases of functional neuroses, and the same remark was applicable to such operations as curettage, trachelorrhaphy, and perineorrhaphy.

Influence of Cicatricial Tissue.—Dr. Bache Emmet felt that the paper expressed views which were becoming more and more generally adopted. With increasing experience he had been led more and more to separate pelvic diseases from those affecting the nervous system, although there could not be any doubt about the anatomical relations between the two. The keynote to this difficult subject was to be found in the consideration of the general nutrition. He was inclined to place a little more stress upon the part played by cicatricial tissue in affecting the nervous system at large. This was especially observed in connection with the cervix. He was often surprised at the slight disturbance produced in cases in which the ovaries were embedded in cicatricial tissue. By bad ligaturing the surgeon sometimes inflicted serious damage, and caused the patient much subsequent discomfort. Oftentimes the patient would complain of ovarian pain on one side only, and yet the abdomen being opened it would be observed that the ovary on the painful side was not nearly so much bound down by adhesions as the other one which had given rise to no discomfort.

True Reflex Neuroses Rare.—Dr. Edward D. Fisher said that, despite the talk about specialism, the paper gave evidence of the truth which was constantly forcing itself upon us—*i.e.*, that the true specialist must have a good knowledge of the whole system. In the majority of cases of functional neurosis one had to deal with an organ which was functionally ineffective, probably because of malnutrition or some condition of toxæmia. These states were ordinarily removable. A direct reflex from any part of the body, producing a neurosis, must be extremely rare; in the so-called functional neuroses one was confronted mainly with a depraved state of the system. Mention had been made of the neuroses observed about the time of the menopause. These were best explained by the abnormal state of the blood at this critical period of life. If a person were kept without sleep for several days one would observe the development of a series of hallucinations just as marked as the

so-called neuroses under consideration, and yet they would promptly disappear as soon as the proper amount of sleep was secured. Again, nymphomania and masturbation never produced disease directly, but they did produce exhaustion, which was most keenly felt by the nervous system. He did not believe that masturbation could give rise to insanity. Pelvic disease, in a similar way, might give rise to certain nervous symptoms—the so-called functional neuroses. No reflex action was necessary to explain such cases; the answer was found in the existing malnutrition. Dr. Fisher said that, in his experience, after the removal of the ovaries the result had not been satisfactory in cases of epilepsy or hystero-epilepsy.

Dermatological Neuroses.—Dr. L. Duncan Bulkley mentioned the case of an unmarried woman, thirty-two years of age, in fair health, who complained of some irregularity in her menstrual functions. A few days later he found her in a darkened room, suffering from intense photophobia and great nervous excitement. She stated that she had consulted a gynæcologist who had applied caustic to an erosion of the cervix. In addition to the photophobia there were marked congestion of the eyes and severe orbital neuralgia. A month later she went to another prominent gynæcologist, and the same phenomena were repeated after the local treatment. If they had occurred but once the speaker would have considered it a mere coincidence. So many of his patients had complained that their skin diseases were worse at the menstrual epoch that he had kept a number of notes regarding these facts. He had noted in about twenty cases of eczema the aggravation or recrudescence of the eruption at the time of menstruation. One very intelligent woman suffered greatly from eczema of each hand every month for eight years. The patients ranged from twelve to forty-four years of age. The phenomenon was observed with about the same frequency in single and married women. In two cases of seborrhœic eczema the eruption was lessened instead of being made worse by the occurrence of menstruation. He had also noticed that the degree of pruritus was influenced by menstruation. All physicians were acquainted with the close relation between acne and the menstrual function. One of the most remarkable of the skin neuroses connected with the uterine function was a form of general herpes developing during pregnancy, and disappearing after the uterus had been emptied. A kindred matter of some interest was the frequency with which patients complaining of painful or irregular menstruation were relieved during the administration of alkaline diuretics, given with the object of benefiting the cutaneous lesions. In most of these cases he had had no idea of the physical condition in the pelves of these women, but the good results had been explained by Dr. Etheridge, of Chicago, and by others, on the ground that this line of treatment caused a freer action of the kidneys.

A Therapeutic Hint Regarding Headache.—In connection with the common complaint of vertical headache and flushings in women he called attention to a fact learned by experience, although not yet explained, that the internal administration of full doses of strong nitric acid (five drops, three times daily, suitably diluted) almost invariably gave prompt and complete relief.

Ovaries Should Not be Removed at Random.—Dr. Mundé said that in 1886 he had read a paper on this subject, and had reported a number of interesting cases. These were briefly referred to again. Among them was a case of persistent supraorbital neuralgia in an unmarried woman, which had resisted all the usual treatment, but had yielded promptly to the correction, by the wearing of a pessary, of a retroversion of the uterus. Another was a woman who had been under the care of various neurologists and alienists for a mental derangement, but who recovered after a quack had discovered and relieved a displacement of the uterus. Dr. Mundé said that when he had reported these cases he had been quite severely criticised by foreign journals for having made misleading statements; but he was prepared, even at the present day, to stand by these assertions. He thought a little too much stress had been laid upon the part played by cicatricial plugs in lacerated cervices, although when they were situated high up their influence might be more worthy of attention. When the usual modes of treatment for these nervous conditions failed to give relief, it was right and proper for the gynæcologist to make an examination and do what he can, even if only in a tentative way, toward saving the person from becoming a confirmed invalid. So far as the removal of macroscopically normal ovaries was concerned, for the relief of such conditions as hystero-epilepsy or hystero-catalepsy and real insanity, he wished to be put on record as being exceedingly conservative. Before doing such an operation he would wish to be convinced that the neurologist had exhausted all his resources; yet he made this statement in the face of the fact that he had performed six successful operations in cases of this kind. The fact should not be lost sight of, however, that ovaries which appear normal macroscopically often prove, on microscopical examination, to be diseased. The operation known as "normal ovariotomy;" or Battey's operation, he believed should be one of the past—that is, if done for the indications laid down by Battey.

Nourish the Cortical Centre.—Dr. S. Baruch said that he agreed thoroughly with the reader of the paper in the statement that the connection of functional neuroses with pelvic derangements was still problematical. About fifteen years ago, when the wave of peripheral irritation swept over this country, and so many women were unsexed, it was quite remarkable that no one suggested that men should be unsexed. In 1890, the late Dr. Loomis had arranged for a symposium on this subject in the Academy of Medicine, and, in spite of the fact that the opinions expressed at that time were almost unanimously against this indiscriminate removal of ovaries, the slaughter went on. On the occasion referred to, he had stated that the only case of epilepsy that he had ever seen cured had been by the removal of an enchondroma from the nasal septum. There had never been an attack of epilepsy since that time. He was of the opinion that the removal of the ovaries, the repair of the lacerated cervix and perineum, and the correction of malpositions of the pelvic organs acted beneficially by improving the general health, *i.e.*, by permitting walking and other modes of exercise, by relieving pain, and by removing sources of infection. With the improvement of the general nutrition he believed the nutrition of the cortical centre was improved, and hence the good result. Many cases of neuroses were referred to him for hydriatic treatment as a last resort, and they recovered under hydrotherapy, not from any specific effect, but simply from the influence which it exerted on the general health and on the nervous tone. All efforts should be directed toward improving the general condition, and this should include moral, medicinal, and physical treatment, conducted in just as systematic a manner as the physician would employ in the treatment of any serious acute disease, such as pneumonia.

Dr. W. B. Pritchard said that he believed there was such a thing as a reflex neurosis. He had often thought that in a large number of cases of supposed reflex neurosis dependent upon pelvic disease there was a primary cause back of both the pelvic condition and that of the nervous system. In his opinion,

operations were comparatively rarely indicated in these cases, and it was encouraging to note the increased tendency toward conservatism on the part of the operative gynæcologists.

Neuroses after Oöphorectomy.—Dr. E. E. Tull spoke of the form of neurosis arising from the legitimate removal of diseased ovaries. The existence of such nervous manifestations made it seem to him desirable, whenever possible, to leave one ovary, as it appeared, in a certain number of cases, capable of preventing these unfortunate sequelæ.

Interesting Illustrative Cases.— Dr. E. C. Savidge referred to the case of a widow, forty years of age, who married for the second time, and had an abortion at six weeks. She then developed an aggravated pruritus and an eczema, which were treated by an eminent dermatologist without benefit, and she was not relieved until he had curetted her. Another case was that of a woman who had had an epileptic attack, with an aura, almost every month. The speaker said that after having treated her for six months with bromides he removed a small cyst from one ovary, with the result that the patient had had no more attacks. Another similar case was that of a negress with a marked retroflexion, who was quickly cured by the use of purgatives and the tamponade. Still another case of this kind was cured by the application of leeches to the cervix. In a case of nymphomania coming under his observation he had curetted the uterus and removed a polypus from it. This restored the equilibrium of her sexual nervous system.

Dr. Boldt closed the discussion. He said that while undoubtedly the main point was to improve the general nutrition, nevertheless if there was a marked local abnormality we could not expect to bring about a complete cure without treatment directed toward that local lesion. He was sorry to say that castration was still performed in cases marked chiefly by severe pain and nervous excitement.

THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, November 28, 1898.

S. O. Vander Poel, M.D., President.

Inaugural Address of the President.—Dr. S. O. Vander Poel, the newly elected president, in his inaugural address stated that he should steadfastly avoid conducting the business of the society in the interest of any particular clique or faction, and would endeavor, as far as possible, to eliminate what was known as "medical politics."

The Medical Aspect of Life Insurance.—Dr. Vander Poel then took up the special subject of the medical aspect of life insurance. He said that the physician who believed that, if he were a good medical practitioner, he should be a good examiner for life insurance would soon have his mind disabused of this fallacy on beginning the actual practice of this special branch. The physician must entirely change his usual point of view.

Sub-Standard Lives. — Family physicians often wondered why life insurance companies rejected persons who, although having slight cardiac disease, were likely to live nearly as long as persons without such impairment. The reason was to be found in the fact that all the actuarial calculations had been made on selected lives, and these "sub-standard lives" could not be safely insured except upon the experience based upon large groups of such lives. Unfortunately this had not yet been done, although Dr. Oscar H. Rogers had been working upon this gigantic, but immensely important, task for the past six years. He hoped soon to publish the results of these labors. This investigator had studied about ten thousand cases, and in a somewhat novel manner, *i.e.*, by studying the death records of the company with which he was connected, along with the other records. These studies had included such impairments as rheumatism, albuminuria, albuminuria associated with Bright's disease, cardiac disease, glycosuria, excessive body-weight and underweight; and, as a result, this company had been placed in a position to extend the benefits of insurance to a large number of persons hitherto denied them. It must always be borne in mind that the mental state of the applicant for life insurance is entirely different from that of the patient coming to his regular medical adviser, and, consequently, the medical histories obtained by insurance examiners are very different from those recorded by ordinary medical practitioners. It had only been quite recently in this country that the companies had been willing to insure impaired lives, although this had been done in England under certain limitations. Any insurance company, carefully managed and insuring only normal lives, should succeed in business. For example, at the age of thirty-five, a company could afford to lose nine deaths per thousand the first year, and nine deaths of the remainder for the second year, etc., but the same company would lose money if there were only three additional deaths per thousand. It was evident that the proportion of deaths in the later years should be about the same as in the earlier ones, and it was because of this necessity that insurance companies were so conservative about accepting persons apparently suffering from slight and unimportant albuminuria, it not being possible to affirm that, in considering large numbers of lives, the death-rate on such impaired lives would not be greater in the later years.

Cuban Malarial Fever.—Dr. William H. Thomson read a paper with this title. He said that at the beginning of his service at the Roosevelt Hospital on September 1st, he found in his wards sixty cases of Cuban malarial fever among the soldiers, who had contracted this disease at Santiago. The majority of them had been in the hospital since August 17th, and the duration of the illness before coming to the hospital ranged between twenty and forty days. In all the cases that had been treated first with quinine, and in a large proportion of the total number, there had also been a free use of Warburg's tincture and of arsenic. Subsequently thirty-nine more patients had been admitted, making one hundred in all, besides a group of mixed malarial and typhoid-fever cases. Of the number referred to, sixty-three were actively febrile, the temperature ranging from 103° to 107° F. Of these, forty per cent. had chills, with the usual succession of symptoms, but with true intermissions in only ten per cent. The chills were irregular rather than periodic in the remaining thirty per cent. They seemed in some cases to be double tertian and in some double quartan, but in all of them the paroxysms of rigors were very irregular. The remaining sixty per cent. of the febrile patients had no chills, and the fever pursued a very variable course. The plasmodium malariæ was found in ninety per cent. of all the cases, but in some not until after repeated examinations. The commonest form was the crescentic, but there were also many actively mobile extra-cellular bodies, very small and round in contour. Masses of pigment were often seen free in the field of the microscope. Only one separate flagellum was detected, although possibly more might have been detected if more time had been given to the examinations. The most prominent features in these cases were the anæmia and great prostration. The anæmia appeared to be quite independent of enlargement of the liver and

spleen. The liver was enlarged in not more than five per cent., and the spleen was enlarged in about fifty per cent. In the great majority of the cases, during the febrile stage, there was scarcely any delirium, but instead there was a characteristic taciturnity. It was upon this particular symptom that the effect of the medicinal treatment, to be afterward referred to, was most marked. Sixty-five of the patients were treated for sixteen days by careful feeding and nursing. They were also given quinine, from thirty to sixty grains daily, or Warburg's tincture in doses of half an ounce, three times a day. Others were treated with arsenic. The general results of such treatment had been quite unsatisfactory. The best results from quinine were in the small number of patients showing periodical remissions. The Warburg's tincture seemed more effective than quinine. Arsenic appeared to be of very doubtful benefit. Cold baths were used in six cases of high temperature, but the patients did not bear them well, and the temperature was not controlled thereby.

The Most Successful Antimalarial Medication.—The treatment which gave by far the best results consisted in the administration of fifteen grains of quinine, fifteen grains of powdered ginger, and half an ounce of paregoric, twice a day—in the forenoon and afternoon. Under this treatment the patient received an equivalent of three grains of opium each day. This plan was tried on forty-seven patients, all of them actively febrile, and eighty-four per cent. severely so. Fourteen febrile patients, of whom sixty-five per cent. were severe, were treated with Warburg's tincture alone as a control experiment. In twenty-two, or forty-seven per cent. of the number who took the paregoric, there was a fall of the temperature to normal within twenty-four hours, and it did not rise again. The treatment was continued from eleven to fourteen days, and the patients were then discharged. In ten patients, or twenty-one per cent., from thirty-six to forty-eight hours were required to reduce the temperature to normal. In three the treatment failed to control the fever. One of these, however, had a colitis, to which his continued fever seemed to be mainly due. No relapse was recorded in any patient taking the paregoric treatment after the temperature had once been reduced to the normal. In five cases, or 10.6 per cent., the paregoric treatment could not be continued because of the nausea excited. They were then given quinine and ginger alone, and they recovered, but relatively slowly. Six out of the forty-seven proved in time to be cases of mixed infection with malaria and typhoid fever. There were only two patients who showed the effect of opium: the remainder not only were not drowsy but seemed to be aroused from their stupor by the treatment.

Comparison with Warburg's Tincture.—Of the fourteen patients treated with Warburg's tincture, in two, or fifteen per cent., the temperature was reduced in twenty-four hours. Both of these were patients who had been recently admitted, and who had been treated with quinine previously. In twelve, or forty-five per cent., the time required to break the fever varied from forty-eight hours to ten days. In seven of the cases the Warburg's tincture failed to control the fever after ten days. All of these patients recovered in about twenty-four hours under the paregoric treatment. Of the remaining thirty-nine out of one hundred, twenty-six were admitted as convalescent, and without any fever. They were all extremely anæmic, and the plasmodium malariæ was found in eighty per cent. They were all given the paregoric, quinine, and ginger treatment, and with as good general results as in the febrile cases. In the delirious afebrile cases the paregoric seemed to act especially well. Both from the blood examinations and from the clinical features, Dr. Thomson said that it was evident that the Cuban malarial parasite belonged to the æstivo-autumnal type, and that its cycle of development in the blood was very irregular as to time. This would seem to indicate that the action of quinine is only secured at certain stages of the life history of the parasite, and emphasized the practical benefit of administering this drug at certain times. In the more or less continuous forms of malarial fever it seemed to lose much of its effect. When, therefore, the physician had to deal with an infection not having definite remissions, quinine was still valuable if given at proper times, but increasing the dose in these cases seems only to make matters worse.

Quinine with Aromatics and Opium.—For many years he had been accustomed to prescribe quinine with an equal quantity of ginger, and had obtained better results in our common agues than with quinine alone. Opium had been known to be of benefit in the treatment of malarial fevers since the time of the ancient Greek and Roman physicians. In this century it had been highly praised by Dixon, of South Carolina, as a remedy for breaking the cold stage. Sir William Roberts, who served on the commission in India which investigated the method of treating malarial fevers by the use of opium, maintained that the anti-malarial properties of opium were due to its alkaloid, commonly called narcotin, but which, he said, was better described as anarcotin. This alkaloid constituted a considerable proportion of the drug, varying in different samples of good opium from one-fourth to two-thirds of the percentage of morphine. Sir William O'Shaughnessy in 1838 had reported one hundred and thirty-eight cases of malarial and remittent fevers treated by opium, with ninety-five per cent. of cures. This had induced the Indian authorities to institute further experiments, and as a result anarcotin was prepared in quantity and distributed to the medical depots throughout India. Sir William Roberts claimed that anarcotin was scarcely inferior to quinine, and in some classes of cases was actually superior to it. The speaker said that it was a question whether or not the beneficial action of the paregoric treatment was due to the presence of anarcotin; he was inclined to believe that the opium acted as a stimulant, thus enabling the system to cope better with the malarial infection. It was because of its superior stimulating properties that he had chosen the paregoric preparation of opium. Certainly in the majority of the cases the drug acted as the reverse of a narcotic, and rather as a general cardiac and nervous stimulant.

Typhoid and Malaria.—The cases of mixed infection with typhoid fever and malaria ran the usual course of typhoid fever, and they were treated without any quinine. Two of the patients, after being fairly convalescent from the typhoid fever, had had an attack of chills and fever, which had soon yielded to the paregoric treatment. During these attacks the plasmodium had reappeared in the blood. Three of the patients died, and, strangely enough, all from an unusual cause, *i.e.*, intestinal hemorrhage. As this accident had occurred only once in one hundred and fifty cases at the Roosevelt Hospital, its occurrence in these three cases led to close investigation of the previous history. This elicited the fact that all of these soldiers had insisted upon continuing at drill for some time after they had been taken ill.

Artificial Nauheim Baths.—Twelve of the patients were given the artificial Nauheim baths, and twelve other patients, as nearly as possible in the same condition, were used as a control. In every instance the effect of the cold Nauheim bath was to lower the temperature for a longer time than the simple cold bath. The stimulating cutaneous impression of the carbonic acid gas also seemed beneficial, although the nurses

complained of the prickling it produced on their hands.

Intestinal Irrigation.—Nine patients were treated by intestinal lavage every afternoon, six pints of normal saline solution being administered at a time through Kemp's irrigator. For two days before beginning this treatment careful observations were made as to the quantity of urine excreted. During the irrigation treatment the patients were given the same quantity of fluid as on the two days of preliminary observation. In seven patients the urine was increased from ten to twenty ounces daily. There could be no question that the other symptoms were also improved, so that these few observations should at least encourage one to give the treatment more extended trial. The object of the treatment was to diminish the well-known toxicity of the blood in typhoid fever.

Dr. Wickes Washburn said that he had had under his care some of these patients before they had been transferred to the Roosevelt Hospital. He described the deplorable state of many of these men on reaching the Montauk camp, and explained the fact that many of them had collapsed in the streets of New York City after having been discharged from the Montauk hospital, by saying that some of the cases showed a most persistent tendency to relapse. For instance, one patient, who had been discharged from Camp Wikoff on August 29th, had had a relapse as late as yesterday. In the cases complicated with diarrhœa he had found opium beneficial.

Dr. J. F. Chmelicek said that he had had about six hundred and fifty of these patients under his care. His routine treatment for the malarial fevers had been to administer five grains of quinine with half a minim of oil of black pepper. He had also met with fatal cases of intestinal hemorrhage in persons who had persisted in keeping on their feet long after becoming ill.

Cuban Fever Plasmodium.—Dr. Robert L. Watkins illustrated the different forms of plasmodium by means of lantern projection.

The following committees were appointed: Committee on Hygiene—Dr. George B. Fowler, chairman, Dr. J. W. Brannan, and Dr. John S. Thacher. Committee on Discipline—Drs. Gorham Bacon, Thomas W. Bickerton, and H. Holbrook Curtis. Committee on Audit—Drs. Prince A. Morrow, H. A. Griffin, and Beverley Robinson.

Surgical Suggestions.

Operation in Fractured Patella.—There is one precaution to be observed—namely, to handle the tissues as little as possible, and then with instruments in preference to the fingers, and, most of all, to do the handling yourself.—Haynes.

For Facilitating Cicatrization in Granulating Wounds, Abscesses, etc.—Direct upon them, at a distance of twenty inches, a jet of steam at a temperature of 127° F. Ulcerations that were resistant to other treatment rapidly heal under this measure.—Beyer, *Deutsch. med. Woch.*, February 24th.

The Pain of Lithiasis.—In lithiasis of the bladder or cystic duct the pain is sharply located in the right hypochondrium; jaundice is usually absent, and when present is usually due to suppuration or to location of the stone near the junction of the common and cystic ducts; a tumor is usually present.—H. J. Cowan.

Fracture of Nose.—When the bridge has been depressed, elevation may be attempted by a Sir Astley Cooper director. Thrust a pin from side to side through the nose, and put a piece of cork on each projecting end of the pin, pushing the pieces together until the bridge is sufficiently elevated. The bony deformity does not tend to disappear, so that if it is desired to remedy it it should be done at once.—G. G. Davis, *Annals of Surgery*, October.

Cold Abscesses.—The method of choice in the treatment of cold abscesses is the injection of iodoform in oil, ten per cent. If this fails, use oxygenated water. —Redard.

Fracture of Patella.—In laying down indications for treatment, Dr. Martin (*Archiv. Méd. Belges*, June) says arthrotomy followed by bony suture is the only plan capable of re-establishing in its integrity the extensor apparatus of the lower limb. (1) It should be employed in young subjects, free from all taint. It is not prudent to attempt it after the fiftieth year. (2) Diabetes and albuminuria are decided contraindications. Syphilis, gout, alcoholism, and cachexias call for serious deliberation. (3) There should be made out a separation of three centimetres, with marked exudation into the joint, causing ankylosis to be feared. Bloodless operations suffice for mild cases. These will be massage and early mobilization if the hæmarthrosis is but slight and the separation scarcely noticeable. Dutch physicians let their patients walk at the earliest possible date. In the intervals of manipulation the fragments are kept together by a compress bandage or strappings. Better results are to be obtained by waiting ten or twelve days for the swelling to subside, and then causing digital approximation of the fragments and retention by plaster bandage, interrupting the immobilization to carry out several *séances* of massage to prevent muscular atrophy. (4) The patient should be warned of the risks and be allowed to choose according to his profession, etc. (5) Arthrotomy and suture should be undertaken only in a rigorously aseptic operating-room. This rule is as imperative as in laparotomy.

Intracerebral Injections in Tetanus.—In the matter of prognosis tetanus and diphtheria stand together; all depends on early diagnosis and early therapeutic intervention. Although the authors Heckel and Reynès (*Presse Médicale*, No. 74, 1898) report but one attempt at intracerebral medication, and although the subject succumbed after receiving respectively two and one-half and three and one-half cubic centimetres of antitetanic serum in the substance of the brain upon the two sides, still they advocate the procedure and adduce the following indications: (1) Eradication of microbic foci when visible, limited, and operable. (2) Subcutaneous injection of antitetanic serum, which prevents new diffusion of the toxin through the blood. (3) Intracerebral injection, which guarantees the nerve cells against all subsequent chemical combinations with the toxin.

Recent Experience with Advancement of the Recti Muscles.—Dr. C. H. Beard (*Journal of the American Medical Association*, October 8th) concludes a paper as follows: "The more I study the anomalies of the ocular muscles, the more I see and the more I do, the stronger becomes my conviction that muscular advancement is the only operation—not the only treatment—but the only operation, not only for all forms of strabismus, but also for the strabic tendencies. De Wecker, of Paris, in a recent magnificent paper on the results of strabismus operations (*Annals d'Oculistique*, January, 1898), recommends advancement whenever binocular single vision is the end in view, and tenotomy, or tenotomy and advancement, when the ultimate aim is a cosmetic result. A stronger indorsement than this of advancement as the best procedure in all cases could hardly be conceived."

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

DR. ORD'S BRADSHAW LECTURE—A THICK SKULL—THROMBOSIS OF HEPATIC VEIN—THE PUBLISHING SEASON—SOME BOOKS—SIR R. THORNE'S HARBEN LECTURES — THE DEATH OF MR. FREDERIC — MANSLAUGHTER FOR "CHRISTIAN SCIENTISTS."

London, November 11, 1898.

The Bradshaw lecture for this year was delivered yesterday by Dr. W. M. Ord, who took for his subject myxœdema. His own researches on this disease will be familiar to your readers. On this occasion he passed lightly over its pathology, as it will come before the College of Physicians next year in Dr. George M. Murray's lectures. The diagnosis was touched with a master's hand. Dr. Ord said that round one well-defined picture are to be found forms more or less obscure, in part because of incomplete development of the whole series of symptoms, and in part also by reason of curious modifications constituting alliances with diseases to which the term myxœdema cannot be applied with propriety. In regard to the thyroid, he pointed out that it is not always that the gland is found reduced. If enlarged, that state may be brought about by new growth. Moreover, the history of some cases points to enlargement having preceded the contraction and atrophy.

In some cases symptoms of exophthalmic goitre have preceded the myxœdema, and the lecturer seemed inclined to think that we shall come to recognize an early stage of hypertrophy, with or without signs of Graves' disease. Not that all cases of enlargement are followed by atrophy, but he found, as no doubt others have done, that some enlargement is much more commonly observed than formerly in young women brought for treatment on account of anæmia and various nerve disorders.

As to treatment, the only one is thyroid gland. Dr. Ord prefers it fresh and minced when the patient will take it or it can be regularly obtained; next to this he prefers the extracts of the whole gland; next the B. P. dried and powdered gland. He admits the convenience of tablets, and their efficacy. Some of these are made of the whole gland, others of extracts.

Professor Curnow showed at the Pathological Society, on the 1st inst., a remarkably dense skull, weighing two pounds ten ounces. He had mentioned the existence of this at the previous meeting in the course of remarks on a specimen of acromegaly, to which I referred in a former letter. This skull is dolichocephalic and prognathous; the ridge of origin of the temporals and the insertion of the masseters are very strongly marked, unlike European skulls; the frontal sinuses are large; there is no enlargement of the pituitary fossa. Dr. Curnow said it had been supposed to be an Australian skull, but it certainly was not. He thought perhaps it might be African, but could not be more precise; it seemed a normal skull, with strong racial peculiarity. It is certainly not acromegalic.

At the same meeting there were two specimens of that rare condition, thrombosis of the hepatic vein. In both there were cirrhosis and some indications of inherited syphilis, but not enough evidence to make this conclusion clear. No doubt the state may be due to a variety of causes. One of these specimens was from a man of twenty-five, the other from a boy of thirteen. In the conversation a case was referred to occurring in a child seventeen weeks of age, reported in "St. Bartholomew's Hospital Reports." Dr. Rolleston remarked that in the specimens exhibited the changes seemed to be more marked at the orifices of the hepatic veins, perhaps causing first stenosis and then thrombosis. He had seen in one case thrombosis extending in from the inferior cava. Osler had described a case of the kind, and Delépine one in which thrombosis arose from rupture of a softened cirrhotic nodule into the vein. Some cases reported as diffuse sarcoma in children are probably syphilitic cirrhosis.

The publishing season is in full swing. Already a number of books are claiming early perusal to make room for others promised shortly. Some are strictly scientific and professional; others appeal to a wider circle, but have a special interest to us on account of the subjects, the authors, or other points.

Thus Emin Pasha began his wonderful career as a doctor, and his life in two bulky volumes abounds in scientific as well as general details of his explorations.

Sir George Robertson's "Chitral: the Story of a Minor Siege," is attractive for a similar reason, and is a lively account from the inside.

"Under the African Sun," by Dr. W. J. Ansorge, is announced as forthcoming, and as the author is a sportsman as well as a government officer in Uganda, he will doubtless tell us much of native life in Central Africa and perhaps add to our knowledge of that region's natural history.

Dr. Weir Mitchell's new story, "The Adventures of François," is now in full circulation on this side, and claims attention when from heavier volumes or stress of work we turn a weary effort toward relaxation.

"Clifford Halifax, M.D.," is the title of another promised story by Mrs. L. T. Meade, and I am told it will refer to "Christian scientists" and other quacks.

"Disciples of Æsculapius" is to be the title of a work left by the late Sir B. W. Richardson, which will be published shortly. It consists of biographical sketches of eminent physicians.

A life of the late Dr. George Harley, F.R.S., by his daughter, Mrs. A. Tweedie, is another announcement, and one in which I feel interest from my knowledge of the late physician.

Turning to works of a heavier character, I take up the first volume of Schäfer's "Text-book of Physiology." It consists of more than one thousand pages, royal 8vo, with three colored plates and some ninety figures. The writers of the several articles are representative men, and the editor himself contributes two. When complete this will be a veritable cyclopædia of physiology.

Another book of the cyclopædic order is "The Hygiene and Diseases of Warm Climates," a bulky illustrated volume of one thousand pages, edited by Dr. Andrew Davidson, and contributed to by Sir Joseph Fayrer, Drs. Manson, Macnamara, Notter, Cayley, Lousins, Sternberg, and other authorities.

Clifford Allbutt's "System" will soon be completed; but we are not at the end of these ambitious publications, for there is a project in Edinburgh for an "Encyclopædia Medica," which, it is asserted, will be a complete and authoritative medical library, covering the entire field of medicine, surgery, and midwifery, including "every subject likely to be of use to medical men." A large promise this,—but I have no desire to restrict it or to question the ability of Edinburgh to fulfil it. The work is intended to be comprised in twelve volumes, of five hundred pages, royal 8vo. There will be a good deal of condensation required to compress into the proposed compass all the promised material.

A new journal came out on the 15th ult., the *Medical and Surgical Review of Reviews*. It consists of abstracts of papers from other sources. Several attempts have been made to found such a journal, but none has succeeded.

Sir R. Thorne Thorne, K.C.B., is delivering the

Harben lectures this year. His subject is the administrative control of tuberculosis, and he shows from statistics that the deaths from all forms of tubercle are decreasing. The difference between the fifties and the first half of the nineties amounts to over thirty-six per cent. Much of this reduction of mortality is accounted for by pulmonary consumption, which is itself reduced by forty-five per cent. On the other hand, the diminution among infants and children is far less. Sir Richard assigns the first place among administrative measures which have contributed to this result to those which give ventilation and sunlight to dwellings. Nearly as important are draining of subsoil and other sanitary improvements. Infection by meat he considers is not extensive, for the general consumption of meat has increased and tuberculous disease has diminished, and that too at the ages when most meat is consumed. With milk it is different, for tabes has increased in infants under one year. Sir Richard dealt with this in his second lecture on Wednesday, and showed that it had gone on hand-in-hand with a steady and heavy increase in the use of cows' milk, the English being almost the only civilized people to consume their milk uncooked. Boiled for a single instant, the danger would be met, and thousands of infantile lives might be saved by this simple precaution.

The inquiry into the death of Harold Frederic ended on Tuesday in a verdict of manslaughter against Mrs. Mills, the "Christian scientist," and the woman who sent for her and influenced the deceased, and who seems to have controlled him. At the request of the jury the inquest had been adjourned for a week, in order that they might have the benefit of the coroner's summing up of the whole case. In the course of this he made some strong observations on the criminal folly of neglecting to employ medical aid.

On Sunday Canon Eyton denounced "so-called Christian science" from the pulpit in Westminster Abbey. He knew Mr. Frederic personally, but he cannot imagine how he should have consented to the course he did. He says the curious feature of the growth of credulity in these times is that it is taking place alongside of an enormous expansion of education. He laments the lack of common sense which lets apparently well-informed people swallow any new quackery just as they swallow "patent pills by the handful, without the least regard to the condition of their body." The "only remedy for the terrible growth of credulity is to teach people to think, to use their brains, to widen their mental processes."

On the other hand, Mrs. Mills has professed to pity the ignorance of the public, and expressed her willingness to "let erring mortals have their little day before they accept her faith."

SHOCK AND SALINE INFUSION; SOME CORRECTIONS.

To the Editor of the Medical Record.

Sir: In your issue for November 12th inst., appears as the leading article an essay by Dr. Thomas F. Reilly, upon "Technique and Use of Saline Infusions"—of all subjects one of the most interesting to me.

The paper is a very able study of the topic, and is well calculated to awaken in the mind of the general practitioner a further interest in a great and neglected weapon for good.

I am quite sure that Dr. Reilly has meant, also, to deal justly with all writers and workers in the experimental field whom he honors by quoting. Nevertheless, as he has, but certainly without intention, done the writer some small injustices, both of commission and of omission, I will venture to ask so much of your space as may suffice to make plain this fact.

Under the heading of "Methods of Introduction" of the saline solution he says: "Dawbarn has successfully used a modification of this (intra-arterial) method, which consists of the injection of the solution into a large artery through an aspirator needle thrust directly into the vessel. On account of the danger of sloughing the intra-arterial method is seldom employed."

Here the context would make it plain that Dr. Reilly assumes that Dr. Dawbarn's technique has been proven to have such a danger. In reality this is incorrect. Dr. Reilly can, I believe, mention no published case in which sloughing has followed my technique. I have followed with care each reported case—and there have now been quite a number—and no one has as yet had an ill result from selecting the common femoral artery for needling (the only vessel upon which I have advised this) instead of opening a vein and using a cannula.

One need not doubt the safety of this if he reflects upon the method of treating aneurism (inoperable by pressure, ligation, or the usual plans) advocated by Professor Macewen, of Glasgow—which is needling the affected artery. A dozen, more or less, of needles are inserted into the diseased vessel. With one of these the opposite wall is slightly scratched. All are left in place, let us say, twelve hours, during which time they aid in producing a plastic deposit, thickening the wall of the sac, within. Ten days or a fortnight later this procedure is repeated; and perhaps a third time. And the plan is safe, as a rule. Now, if a *diseased* arterial wall will bear such needling as this, and repeatedly, without sloughing, we need not fear that a *sound* artery may not tolerate a single needle for a single half-hour.

It is worth remarking, *en passant*, that in Ballance and Edmunds' great work upon Arteries, the statement is made that there is no stouter vessel than the common femoral. Its coats are actually as thick as those of the abdominal aorta. This fact of course increases the safety.

If a surgeon cuts across the radial artery at the wrist, inserts a cannula, and uses infusion in this way, it may very possibly have been followed occasionally by sloughing. But such a technique should not be confused with my method, of needling the femoral artery.

I hope my original article made plain the fact that I prefer—for a surgeon—the vein and transfusion cannula, with scalpel and retractors and forceps for aid. But my object was to point out and prove that if instruments were not at hand one could still both easily and safely administer intravascular saline infusion. Every doctor has a hypodermic; every household either a Davidson syringe, a fountain syringe, or a long rubber tube and tin funnel. And with syringe and hypodermic needle it is easy to infuse salt-solution into the common femoral—an artery which is at least large enough to contain a lead-pencil, and which is easily felt pulsating beneath the finger unless the patient be actually at point of death. In a fat subject a superficial cut may be needed, unless one has a longer (aspirating) needle. The needle is introduced slowly with a boring, gimlet motion, until a trickle of bright blood wells up it. Then, holding it firmly, slip over its base the rubber tube, with the saline solution already running, and have some one tie a thread about it. The needle should be firmly held throughout the introduction of the infusion fluid.

If a fountain syringe or rubber tube and funnel be employed with the needle, we must remember that the reservoir needs about six feet of elevation, when gravity will suffice to empty it. But if it is much lower than this (as the writer has proven upon dogs) the intra-

arterial pressure may still be great enough, after even a severe bleeding, actually to force the arterial blood up the needle and into the tube, instead of the current being in the reverse direction.

An advantage of this intra-arterial technique is the fact that the flow must be slow through the hypodermic needle; and thereby the sudden overwhelming of a tired heart by rapidly introduced injection-fluid in large amount (as through a cannula in a vein, by a beginner in such work) is prevented. This is rather a common mistake, I am sure.

If the patient be not in immediate jeopardy of death from loss of blood, inversion and pouring a couple of quarts or more of hot salt-water into the large gut through the rubber tube or the tin funnel are wonderfully effective. The blood greedily drinks up what it needs, and the heart is further stimulated by the heat. But if the circulation is so feeble as to make it questionable whether water poured into the bowel will be taken up by the circulation, then, in addition to the rectal method, let us use the intravascular; venous preferred, arterial if short of tools.

Of course, by a hypodermic needle fastened to a syringe we may also use hypodermoclysis. This is slower than any other method, however, in its effects. The lymphatics are not very speedy in permitting the diffusion of water entering the connective tissues. This last plan is of especial use, however, in babies with severe diarrhœa. In this disease the heart is often exhausted by pumping too thick blood—blood from which much of its water has been purged away. We cannot readily enter a vein in such little ones; the femoral artery, too, being but small in them, would not be easy to find by needle. The purging would in great measure prevent the retention of water given by the rectum (though this does good by cleansing); but hypodermoclysis, at a dozen or more points, an ounce or so at each, is of utmost value. I published in the MEDICAL RECORD of November 12, 1892, a case of severe cholera infantum so treated, successfully. At that time I could find the use of saline infusion for infant diarrhœa alluded to in only two instances, one German, one French, which were there quoted.

Under the heading, "Preparation of Solutions," Dr. Reilly copies without adverse comment a most dangerous bit of advice from Messrs. Bosc and Vedel; namely, that "ordinary water is non-toxic, not very destructive to the red corpuscles, and might be used in an emergency."

Let me assure the doctor that if he tries this upon a patient there will be a funeral. Nowadays every one knows that at least a litre, and from that to two litres, is the ordinary amount of saline solution proper to inject intravascularly to treat hemorrhage or prevent shock, or both. If any one injects, of plain water, more than a very little, however, the water, devoid of sodium chloride, dissolves the hæmoglobin out of the red discs, disintegrating them and killing the victim at once. Perhaps a quotation from an experiment of mine at the Columbia University physiological laboratory may emphasize this point, which surely needs emphasis (see MEDICAL RECORD, January 2, 1892).

"On May 15, 1891, I operated on a large dog, weighing before bleeding 16.77 kilos. On the one-in-thirteen hypothesis (of blood to body-weight) his weight of blood would have been 1,290 gms.; or, allowing for the specific gravity of blood, about 1,222.75 c.c. The cannula of the mercurial manometer was inserted into the right carotid. The right femoral was used for bleeding; the left femoral for injection of the hot salt-solution. Professor Curtis superintended the working of the kymographic needle. Dr. F. J. Brockway assisted me. We drew 563 c.c. of blood."

Upon attempting to replace this, and a smaller subsequent bleeding, by the salt-solution with which, at various temperatures I was experimenting, "a mistake —a most interesting and instructive one—was made. Dr. Brockway and I each supposed that the other had added the salt to the hot water; whereas in fact neither had done so. And within a minute after receiving a considerable amount of this plain-water injection the animal died." Previous dogs, bled to an equal degree, had done beautifully and recovered under saline infusion. Hence we were much puzzled until Professor Curtis asked if the salt had been added, and stated that without it water in considerable amount will kill almost as quickly as prussic acid—and in the way already named.

A little further on in his article Dr. Reilly, under the same heading of "Preparation of Solutions," makes another remark to which I must take respectful exception. "The temperature of the (saline) solution should be about 100° F." Now, if there is anything which I have proven, by experiments in the Columbia laboratory, and published long ago, it is that the proper temperature is 49° C. (120° F.), or as hot as the average hand can bear. This degree of heat is safe, and is very stimulating to the flagging heart, and restores the tone to the muscular tunic of the vessels. So recently as last winter, in the same physiological laboratory, Dr. Robert Coleman Kemp repeated my experiments of some seven or eight years ago, and re-verified their correctness. His statements were published in the MEDICAL RECORD early this autumn. We both used the mercurial manometer and kymographic tracings after saline infusion at various degrees of heat. In giving saline infusion I am careful to keep the reservoir wrapped in a large towel, to avoid rapid cooling, as I wish to maintain the temperature at or near 120° F.

But I would say a word of warning against Athansin's conclusions, quoted by Dr. Reilly. There must be a fallacy somewhere, when he says: "In animals, at least, solutions having a temperature of 165°–175° F. can be safely used." Upon reference to Kirkes' "Physiology," eleventh edition, p. 846, it will be seen that globulin coagulates at 70° C. (158° F.); and Dalton, seventh edition, p. 80 affirms that serum-albumin clots at 72° C. (162° F.).

It will be noted, however, that both 158° F. and 162° F. are about 40° F. hotter than the hand can support—as above stated. So that the temperature I advise is a long way from being unsafe.

In conclusion, I beg to make a few comments upon Dr. Reilly's views of shock. I am pleased to see that thereon we agree entirely respecting the extreme value of saline infusion, and especially as to its exhibition in the *prevention* of shock which from weakness of the patient beforehand, or severity of bleeding, or length of operation, is to be feared. If we thus strike the first blow—if we thus use the ounce of prevention —we save many a patient. But if we wait for the shock to strike the first blow, and then begin our saline infusion, it will often be too late.

I would respectfully make the claim that I am the originator of the use of intravascular saline infusion for the prevention of shock. A careful search of the Index Medicus and the New York Academy of Medicine library justifies this statement. The three surgeons quoted by Dr. Reilly under this heading published their remarks respectively December 12, 1896; March 15, 1898; and January 22, 1898—as stated by him.

This plan of prevention of shock has been in use (as dozens of doctors can testify) in my clinic since the autumn of 1891; as a consequence of some months of experimental work upon dogs, with hot saline vascular infusion after bleeding; testing intra-arterial pressures, at differing temperatures of the injected

fluid, with instruments of precision, and under the kind supervision of Professor Curtis, in the Columbia University physiological laboratory, during the winter and spring of 1890–91. So far as is known, other surgeons did not until later adopt this plan against shock; and it is commonly ignored even to-day by a majority of physicians. Nothing upon the *prevention of* shock is said in certain surgical text-books recently published in this city, in Rochester, in London, and elsewhere, so far as I have read; and several of these books do not even seem to value saline infusion at all highly.

In evidence as to priority is submitted a brief quotation from the writer's paper read before the surgical section of the New York Academy of Medicine, November 9, 1891, and published in the MEDICAL RECORD, January 2, 1892: "Whoever has noted the vigor with which unstriped muscle, everywhere, reacts to the use of heat—for example, the much stronger and decidedly more permanent uterine contractions which result from hot postpartal injections as contrasted with cold ones—must believe it probable that such unstriped muscle, forming as it does a most important tunic of the blood-vessels, would be greatly aided by hot saline infusion in regaining its lost tone. Perhaps, too, the central sympathetic centres would feel and respond to this stimulus. Now, since a more vigorous cardiac action (for the heart, though not unstriated, responds to the heat), accompanied by a somewhat restored vascular tone, would go far toward recovery both from hemorrhage and its attendant shock, I have felt that the experiment was well worth trying." (I had tried it as a preventive of shock only upon dogs, before the paper was written.)

Again, a quotation from the writer's article in the MEDICAL RECORD for November 12, 1892: "And why would it not be well, at the end of any and every operation grave enough to make shock a probable result (though, because of the ether, not yet at hand), to inject subcutaneously (*i.e.*, intravascularly) a quart or two of hot salt water? It would be painless, the patient not yet being out of anæsthesia. It would certainly be harmless. And I believe it would do much to prevent, by maintaining filled blood-vessels, otherwise fatal shock from developing. It seems not improbable that we shall ultimately see this done as a matter of routine, after all severe operations." At that early date the writer had tried the method in but very few instances, to prevent shock, using a half-litre or more within the vessel and as much more in the cellular tissues; and could not, of course, speak, as all can to-day who have used it, with absolute certainty as to its value upon human patients.

In the *Medical News* this autumn was published an article upon the "Post-operative Use of Saline Injections," by Dr. Eugene Boise, and which had been read before the American Gynæcological Society. This article covered much the same ground as that of Dr. Reilly. I merely mention it here in order to say that the week following (see *Medical News*, September 24, 1898) Dr. Boise wrote as follows: "On reading my article . . . I am struck with my omission therefrom of all reference to Dr. Dawbarn, of New York, to whom the world is indebted for the first suggestion of the intravenous use of decinormal saline solution as a preventive of shock. Dr. Dawbarn also first demonstrated that for such purposes the temperature of the solution should be high—115° to 118° F.—and thereby perfected one of our most valuable and reliable therapeutic measures."

In conclusion, just a word as to the repetition of saline infusion. Many times I have read of surgeons using it once upon a given case, and reporting a temporary good effect, but that subsequently the patient died of the shock. Now, of course, no method can save all cases of every dangerous disease; but common sense would teach us that if a dose obviously does good it should be repeated, while the same indications call for it. Of late I regularly use, just as heretofore, the hot intravascular infusion when shock is to be feared; and then elevate the foot of the bed upon a chair, and give the same solution, alternate hours, by bowel, through Kemp's rectal tube, which enables one to do this easily and without soiling the bedding. I keep this up so long as threatened or existing shock demands it, plus strychnine, or other medicinal means, until the pulse remains lower than 120 beats per minute; and I am confident that patients are thus saved who would succumb to shock after a grave operation or severe loss of blood, were the infusion to be used but once.

ROBERT H. M. DAWBARN, M.D.

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THE INFLUENCE OF DIET ON CONSTIPATION.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: The paper and discussion on "Habitual Constipation and Its Non-Medicinal Treatment," before the section on medicine of the Academy, which you epitomized in the last issue of the MEDICAL RECORD, has for me an interest very personal and direct; is, indeed, a veritable *argumentum ad hominem*. The physician who is never sick is to be envied, yet in the treatment of the sick he may labor under a certain disadvantage. I once heard of the remark of a very distinguished physician, to the effect that in dyspeptic conditions it was unnecessary to discriminate in eating; let the dyspeptic eat whatever his appetite craved.

I do not know of more fallacious advice, and can only account for it from the fact that the one who gave it was the picture of health, with probably never a dyspeptic symptom in his life. So it is with this very wretched condition—constipation. He who has been a victim to it ought to be a little better prepared to gauge its causes and its cure than the man perfectly healthy in this respect.

I do not deny that drugs may be sometimes useful in habitual constipation, but to my mind they are in the main a delusion and a snare. In this view I am, I believe, in accord with the author of the paper.

I recognize well the fact that all cases cannot be treated alike, and yet, according to my experience, the chief causative factors of constipation are indiscretions in eating and drinking, and its cure depends mainly on the correction of excess. When one considers the evils that flow from overeating—the imperfectly oxidized food products—the derangement of the excretory processes and the interference with peristalsis from toxic causes—one finds it not very difficult to believe in this causation. In my own case I find that the less I eat—within bounds and broadly speaking—the better I am, and to my mind the method that will in most cases hit the mark is a restricted diet according to individual idiosyncrasies—plenty of exercise and fruit—especially apples, the king of fruit.

I have a relative, now ninety-six years of age, with a fair degree of mental and physical vigor. My earliest recollection of him is as a semi-invalid, with the symptoms of dyspepsia and constipation predominant. After the age regarded by many as old, he learned what the majority fail to learn—the virtues of a simple and moderate diet, rightly adapted to his special needs. A considerable portion of this diet consisted of apples taken, not spasmodically, but morning, noon, and night, and at all seasons when attainable. Not a few claim that they are unable to eat apples because of the indigestion and flatulence

occasioned. Those who are thus unfortunately debarred must get along without this health-giving fruit, but I am very strongly of the opinion that the majority who hold this idea are simply laboring under a misapprehension. Among a number who have quite overcome this habit of constipation by courageously and persistently following out a course of prescribed dietetics, occurs the case of a female patient in the practice of a friend of mine, to whom I had lauded the virtues of the apple. This patient claimed that apples had always disagreed with her, producing flatulence, indigestion, and a host of unpleasant symptoms.

He induced her to begin by eating immediately after each meal a portion of a small apple; this portion to be increased a little day by day. She now takes after each of her simple and restricted meals from two to three apples, not only without discomfort but with the greatest relief to her former constipated habit.

Dr. Lockwood, the reader of the paper, remarks that faradization had been a grievous disappointment to him; and to a certain extent I agree with him. While it is by no means valueless as an adjunct to proper hygienic measures, the galvanic current, applied according to the following method, will give better results than faradization. A conical metal electrode, about two centimetres in diameter and four or more in length, and connected with the negative pole, is introduced just within the rectum, while the other and indifferent electrode is applied externally, preferably on the abdomen. With a current of from five to ten or fifteen milliamperes, according to each individual case, interruptions are made at intervals of three to five seconds for a half-dozen times more or less. It will be observed that the impression made is greater at the opening of the circuit than at the closing; just the contrary of what occurs in purely external applications through the high resisting media of the epidermis. It will be further remarked that in many if not the majority of cases these applications are followed not only by a distinct desire for a passage but by an actual movement of the bowels.

A. D. Rockwell, M.D.

25 East Forty-Fourth Street,
November 27, 1898.

PROSTATECTOMY—A CLAIM OF PRIORITY.

To the Editor of the Medical Record.

Sir: In your issue of November 19th, Dr. S. Alexander is quoted as describing a perineal prostatectomy under the heading of "His Method of Enucleation," which, as nearly as I can understand, is identical with my own, described in the Medical Record, August 6, 1892.

I am satisfied that I was the first to describe and publish this method of operating upon hypertrophied prostates. Interested readers, by referring to the above number, under the heading of "A New Method of Removing the Prostate Gland," will find the operation credited to Alexander described in detail, with an illustration from a photograph showing the line of incision. I know of no one prior to this time attempting total enucleation. The operation there described was reprinted in the *British Medical Journal*, August 17, 1892, and in the *Medical Annual*, 1893, and is a matter of history. I studied, planned, and executed the new method independently and without knowledge of the work of any others, if there be, along the same lines. Professional courtesy demands that Dr. Alexander should properly credit my work. A reprint of my article with a personal letter calling his attention to my operation was mailed him shortly after the appearance of the publication in the Medical Record. As late as 1895 Dr. Alexander appears before the members of the New York Academy of Medicine and describes essentially, according to published reports, the operation with which I should have been credited. Again I wrote him, this time asking that he give me the date of his first operation and anything that he had published on the subject in question. I also called his attention to my claim for priority. At no time have I been able to get a response from Dr. Alexander, and I am driven to take this method to find out what his claims for originality are and in what respect they differ from my own.

With me, and as far as I have been able to learn, the semicircular incision in front of the sphincters and behind the transversus perinei carried from the middle of one tuber ischium to the other, the separation of the rectum from the membranous urethra, and the uncovering and enucleation of the prostate through this route is original. I await enlightenment.

John S. Pyle, M.D., LL.B.

2123 Ashland Avenue, Toledo, Ohio,
November 23, 1898.

THE "SURGICAL NURSES" FROM THE ACADEMY.

To the Editor of the Medical Record.

Sir: My attention has been called to a letter from Dr. Dawbarn, in the Medical Record for November 26th, in which he laments the fact that the register for nurses, at the New York Academy of Medicine, is not under the supervision of a competent medical man. He tells us of the ignorance and stupidity of some of the women sent out as "surgical nurses" from the bureau of the Academy, and doubt not that many other surgeons could testify to the unfitness of these persons for the work which they undertake to perform. Unquestionably some guarantee should be given to the profession of the character and qualifications of the nurses registered at this bureau. But how is this to be accomplished? Dr. Dawbarn does not tell us. He makes a suggestion, however, and that is that the bureau should send out as "surgical nurses" only those who are graduates of New York training schools. Is this discrimination against graduates of training schools outside of New York City a just one? Is all the concentrated wisdom of the nursing profession centred in the heads of the representatives of that guild who are graduates of New York schools only? It may be, but of this the writer is not convinced. He has seen graduates of New York training schools who had about as much expression in their faces as they might be expected to have in almost any other portion of their anatomy. He has seen many whose appearance would lead him to infer that they might be very proper persons to scrub the floors of the wards, but that they ought hardly to be trusted to perform the responsible duties of a trained nurse, especially a surgical nurse.

He has seen the hatchet-faced, lantern-jawed female, whose very presence was enough to turn milk sour, waiting upon a nervous invalid whom she managed to stroke against the grain every time she attempted to do anything for her.

On the other hand, he has seen the rotund, squabby, bumptious young dame, with a swagger resembling that of a Bowery swell, rustling about a sick-room in a manner calculated to give a susceptible person a rigor; or prancing about an operating-room, turning things upside down with an abandon characteristic of the proverbial bull in the china shop. We do not believe that the mere fact of graduating from a New York training school makes a woman an ideal nurse. Nurses are born, not made. To become a first-class nurse a woman must possess the nursing instinct, must

have a natural aptitude for the work of her calling. This is a commodity which, unfortunately, the training schools (even in New York) do not always have in stock. The schools do not furnish information and brains too; they are forced to do the best they can with the material at their command, and the result is some of the half-baked specimens of whom (or which) Dr. Dawbarn complains. If there are as many incompetent nurses registered at the Academy as Dr. Dawbarn's statement would lead us to believe, we think that the responsibility for this state of affairs rests on the shoulders of the superintendents of the various training schools in New York, for the New York graduates must outnumber those from other schools in the proportion of three to one at least. This condition of things will continue as long as the training schools continue to take as pupils women who have no adaptability to the calling of a trained nurse. If a young woman is intelligent, well educated, loves her work, and applies herself to it diligently, she will make a good nurse, and it will make very little difference whether she graduates in New York, Oshkosh, or Philadelphia. G. H. Balleray, M.D.

New York, December 1, 1898.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending December 3, 1898:

	Cases.	Deaths.
Tuberculosis	150	159
Typhoid fever	64	16
Scarlet fever	115	5
Measles	136	2
Diphtheria	156	24
Laryngeal diphtheria (croup)	20	11
Cerebro-spinal meningitis	0	2
Chicken-pox	38	0

Lunatics in Ireland.—The forty-seventh report of the inspectors of lunatics in Ireland, published at the end of September last, states that the total number of known insane in Ireland on January 1, 1898, was 19,590, as against 18,956 in 1897.

Memory in Idiots.—Among cases of extraordinary memory in idiots Morel cites an idiot who remembered the date of the funerals of all the persons who had died in his parish within thirty-five years, with the names of those who had taken part in these funerals. Morel also cites the case of an idiot who could not count up to twenty, but who knew the names of all the saints in the calendar, with dates of their respective feasts.

Man was Not Always a Flesh-Eating Animal.—Primitive man originally subsisted on a diet consisting purely of fruits and roots; but though fructivorous by instinct and by reason of the conformation of his digestive organs and dental system, in which respect he is nearly allied to the apes, which are all fruit-eating animals in their natural state, he soon became omnivorous from necessity, and his stomach readily adapted itself to every kind of food. If the Darwinian theory be accepted and the descent of man from simian ancestors be granted, we have further argument in support of the fact that flesh-eating was the outcome of civilization and climatic necessity rather than of natural craving. Exposed at the epoch of the great extension of the glaciers, which at one time covered all our mountains, to the hardships of an inclement climate, man required something more nourishing and heat supplying than the vegetable diet which sufficed for him in a higher temperature; and in the palæolithic age we find him not only destroying animal life, but provided with and utilizing the means of cooking the victims of his rough-hewn knife and spear.

On the Use of Poisons by Suicides and Murderers.—Sir. J. Crichton Browne when delivering the inaugural address before the Pharmaceutical Society, Bloomsbury Square, London, a few weeks ago made some interesting remarks on the above subject. He referred at length to the use of poisons by murderers and suicides, and said that notwithstanding the discovery of new poisons which, when taken into the body, could defy detection, even in a most minute post-mortem examination, homicides still clung to the old-fashioned and clumsy methods of human destruction. Nicotine poisoning had been resorted to in only one known case of premeditated malice, and then a man was murdered in less than six minutes, and the post mortem failed to detect the slightest trace of poison in the body. There were organic poisons well known to medical men which could be used with impunity without the slightest fear of detection, but they were rarely or never used illegitimately. A connoisseur of poisons could, by keeping his own microbes, slaughter hundreds of innocent people, without the slightest fear of his crime coming to light. For a long time to come, he thought murderers would continue to stake their necks on such old methods as arsenic and strychnine poisoning, which was a remarkably lucky thing for society.

Reading Aloud.—Reading aloud as a mere physical exercise is of great importance and efficacy. Cicero in some one of his letters speaks of curing himself of troublesome and alarming weakness by reading aloud for some hours every day. Certain temperaments are influenced by it, as actors are affected by their own playing. It is said of Madame Testa that she would come home from the opera and sit in a passion of tears at the recollection of what she had been acting. It was entirely unaffected. She would say she knew it to be idle, but that she "could not get the thing out of her head."

Health Reports.—The following statistics concerning small-pox, yellow fever, cholera, and plague have been received in the office of the supervising surgeon-general of the Marine Hospital service during the week ending December 3, 1898:

		Cases.	Deaths.
Small-Pox—United States.			
Michigan, Detroit	November 12th to 19th	Present.	
Ecorse Township	November 12th to 19th	Present.	
New York, New York City	November 19th to 26th	3	1
Pennsylvania, Philadelphia	November 28th	5*	
* Imported from Norfolk, Va.			
Small-Pox—Foreign.			
Belgium, Antwerp	October 29th to November 5th.	9	4
Italy, Rome	October 1st to 8th	..	1
Russia, Moscow	October 29th to November 5th.	12	2
Odessa	October 29th to November 5th.	3	1
Odessa	November 5th to 12th	5	1
St. Petersburg	October 29th to November 5th.	7	
Warsaw	October 29th to November 5th..	..	2
Yellow Fever—Foreign.			
Columbia, Barranquilla	October 22d to 29th	2	2
Barranquilla	October 29th to November 5th.	..	3
Mexico, Vera Cruz	November 10th to 17th	..	3
Vera Cruz	November 17th to 24th	..	8
Cholera.			
India, Madras	October 15th to 21st	..	11
Plague.			
Austria, Vienna	October 22d to 29th	..	1
Bokhara, Samarcand	November 6th	Epidemic.	
India, Bombay	October 18th to 25th	..	109

The United States Consul at Odessa, Russia, reports plague present at several localities in Central Asia, and advises restrictions on shipments of wool to the United States via Black and Caspian seaports.

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Original Articles.

THE ABDOMINAL WOUND.[1]

BY A. C. HEFFENGER, M.D.,

U. S. NAVY,

MEMBER STATE BOARD MEDICAL EXAMINERS, NEW HAMPSHIRE; NEW HAMPSHIRE MEDICAL SOCIETY, STRAFFORD DISTRICT MEDICAL SOCIETY, ETC.

IN selecting a subject for the annual presidential address, I have sought to present to you one, not only of deep interest to the abdominal surgeon, but of vital importance to the profession at large.

Modern surgical technique is undergoing constant evolution, and therefore to give skilled operative assistance, and assume intelligent charge of the after-treatment of a laparotomy case, the general practitioner should make annual trips to the metropolitan surgical centres, which, unfortunately, but a limited number can afford either the time or expense to do.

The object of this paper, therefore, is to lay before you in a plain, practical manner the methods now in vogue with the best abdominal surgeons in the country. It is not possible in a paper of this length to go thoroughly into the entire subject, or to give the individual opinions of various men, so that in the main only general principles relating immediately to the abdominal wound will be considered.

Preparation of Patient, Surgeon, and Assistants.—When it is decided that an abdominal section is to be done, preparation of the operative field is the first thing to demand our attention, and this is divided into two portions when time and circumstances will permit.

If the operation is to take place in the morning, the patient receives the preliminary preparations during the afternoon of the preceding day.

First a thorough, warm bath is given, in a tub if possible, after which a proper drying with sterile towels is effected, a clean night robe put on, and the patient placed in bed and given a hot sublimate vaginal douche.

Next a practically sterile table is placed at the bedside of the patient, upon which should be found green soap, scrubbing-brush, alcohol, ether, sublimate solution (1:1,000), razor, gauze-sponges, sterile towels, a large abdominal dressing of gauze or cotton recently steamed or baked, abdominal binder, and safety pins.

A rubber sheet is now placed under the patient, and the abdomen well exposed from the ensiform cartilage to the pubis. The skin of the exposed region is next thoroughly lathered with green soap, and all hair carefully shaved off. More soap and the scrubbing-brush are next applied, the brush being used gently, and the umbilicus well attended to. Gauze sponges wet with sterile water are then used to remove all soap from the skin. Now, before completing the preparation, the surgeon or nurse should carefully sterilize his or her hands, and with a gauze sponge finally mop the skin with alcohol, ether, and corrosive sublimate solution 1:1,000, in turn, after which the abdominal dressing and binder are carefully applied, the rubber sheet is removed, the night robe readjusted, and the patient made as comfortable as possible. Delicate patients will often require stimulants immediately after undergoing this ordeal.

The following day, when the patient is well anæsthetized and on the operating-table, another vaginal douche is given, and the temporary binder and dressing are removed. The chief surgical assistant, with sterile hands, applies green soap and water with a gauze sponge to the entire abdomen, carefully looking to the umbilicus, and watching for eczematous points which may harbor infection.

Following this, the skin is well mopped with alcohol and ether, a sterile laparotomy sheet placed over the patient, and sterile towels are placed over the chest, across the lips, and on either side of the operating-field.

While the patient has been undergoing this final preparation, the surgeon and his assistants have been making themselves thoroughly aseptic. The arms should be bared above the elbows, and, with the collar and cravat removed, the hands, arms, face, and neck should be thoroughly washed with green soap and sterile water. The hands are then again lathered with soap and well scrubbed with a nail-brush for five minutes, great care being taken to clean thoroughly under and around the nails. The hands and arms are then immersed in a strong solution of potassium permanganate, bleached in a solution of oxalic acid, immersed in alcohol, and finally rinsed in sterile water. An operating-cap of sterile cotton is then put on, and the operating-gown, with elbow sleeves, donned. If the instruments, sponges, ligatures, and sutures are all ready, the operation can immediately be proceeded with.

Position of Patient, Surgeon, and Assistants.—All operations involving the pelvis are best done in the Trendelenburg position, as the intestines thus gravitate away from the working-field, leaving a good view of and free access to the interior of the pelvis. Operating in this position, the surgeon faces the foot of the table, being on the left side of the patient. The chief assistant stands immediately opposite, while the second assistant stands near the foot of the table on the left side. The instruments are placed beside the first assistant, and the suture materials, needles, and ligatures are in charge of a special assistant near the surgeon's left arm.

The Incision.—The surgeon begins the incision within the hair of the pubis, and with quick and delicate force divides the skin and part of the subcutaneous fat with one stroke of the knife for about an inch and a half in the median line, toward the umbilicus. The second stroke of the knife lays the fat open well down to the tendon and increases the length of the incision to the extent the character of the case will probably require. In fat women a long incision is required, as the depth of the wound increases the difficulties of manipulation in the cavity. In large uterine tumors, the incision should begin much higher up, and the peritoneum opened midway between the pubis and umbilicus, as they are apt to drag the bladder high up in the abdomen where its liability to injury from the knife would be great. If more room is needed, the incision is carried up to and beyond the umbilicus, passing to the left of the navel and avoiding the

[1] Presidential address before the Strafford District Medical Society, Dover, N. H., October 12, 1898.

suspensory ligament of the liver. While dividing the tissues down to the linea alba, several small arteries are cut and are grasped with hæmostats, which are thrown to one side of the incision. The linea alba is seen as a white line between the recti muscles, and the knife should enter as nearly as possible in its course. Under the linea alba will be found the subperitonal fascia and fat, which varies greatly in different subjects. In thin, greatly distended abdomens, scarcely any will be seen, while in very fat cases there may be an inch or more encountered before the peritoneum is reached.

This is picked up by the surgeon and chief assistant with mouse-toothed forceps, and carefully divided with the knife till the peritoneum is reached. The peritoneum is then picked up by each with forceps, and moved freely to be sure that no adhesions are under the line of incision, and, when found free, is carefully incised with the knife till an opening large enough to admit the forefinger is made. The knife and forceps are then put aside, and the index finger of the surgeon is inserted into the cavity to make sure there are no intestinal or omental adhesions, and that the bladder is well out of the way. If everything is free, the peritoneum is cut, with the fingers of the left hand as a protecting guide, to the full extent of the rest of the wound. It will now be found that as a rule hemorrhage from the small vessels divided during the steps of the incisions will have ceased, and the hæmostats may be removed. If, however, there should still be some bleeding after removal of the hæmostats, small catgut ligatures should be thrown around the hemorrhagic points, and cut short.

The abdomen now being opened, we shall assume that the various intra-abdominal steps have been successfully accomplished, and the time has come to close, or partially close, the wound, as the case may indicate.

Drainage.—Before closing the wound the question of drainage must be considered; and here let me state that whenever possible the drain should be dispensed with, for it is a source of danger in itself, both while in place and upon removal. Tubal drainage immediately following operation is now condemned by practically every one, and gauze alone is used by the best surgeons. It becomes firmly adherent to the sides of the wound and to raw surfaces in the cavity, and its removal is attended with much pain and more or less hemorrhage. It has been proved that a greater mortality results in drained cases than in a similar number and character of undrained ones. The peritoneum is capable of absorbing and destroying far more germs than has been previously supposed, as the following conclusions by various investigators show, and which may be found in Kelly's book on operative gynecology.

1. Large quantities of fluids may be absorbed by the peritoneum in a remarkably short time (Wegner).

2. Minute foreign particles are carried from the peritoneal cavity through the diaphragm into the mediastinal lymph vessels and glands, and thence into the blood, by which they are transmitted to the organs of the body, especially those of the abdomen, and later appear in the collecting lymph glands of these organs (Muscatello).

3. The leucocytes are largely the bearers of foreign particles from the peritoneal cavity (Muscatello).

4. There is normally a current in the peritoneal cavity which carries fluids and foreign particles toward the diaphragm, regardless of the posture of the animal, although gravity greatly favors or retards it (Muscatello).

Drainage should be limited to infected cases, or those in which the streptococcus undoubtedly exists. Simply because large raw surfaces are left, or there is mild capillary oozing, a drain should not be used, for, as previously shown, the peritoneum is quite capable of taking care of the fluids from such sources, and if eight to ten ounces of normal salt solution be left in the cavity, there is reasonable surety that they will be kept harmless until absorbed.

Of course, all hemorrhage and oozing should be stopped, if possible, before closing the wound, and those cases in which practically only peritoneum is left, will, *ceteris paribus*, give the best results.

The manner of putting in a drain will vary slightly, according to the degree of drainage demanded. If a large area is to be drained, the pieces of gauze should be folded into ribbons about eighteen or twenty inches long and an inch and a quarter wide. These strips are loosely packed in coils over the desired area, and the free ends brought out at the lower angle of the wound. The ends should be so marked that the top ribbon may be removed first. If but a small drain is needed, the umbrella drain is best. It is made by simply folding a half-dozen layers of gauze like a folded umbrella. The apex is placed at the bottom of the point to be drained, and the raw end lies in the lower corner of the wound. In removing this drain pull out the central fold first, then the others in order, till the outside piece is left. This, being firmly adherent to the sides of the wound, must be gently twisted around to loosen it, and then pulled out.

Dressing.—The dressing over the drain and wound consists of several layers of sterile gauze and cotton, and extends well beyond in all directions. It should be removed with forceps, under strict asepsis, as often as saturated.

Closing the Incision.—The best method of suture after laparotomy is still an open question, with many strong opinions for various forms of technique. Kelly holds that all buried sutures give the best result, and advises suturing the peritoneum with a continuous catgut suture, the fascia with interrupted mattress sutures of silver wire, the fat by a continuous in-and-out catgut suture, and finally the skin by the subcuticular catgut suture. In this method there are no sutures to remove, and Kelly claims for it "a firm closure, freedom from stitch-hole abscess, diminished liability to hernia, and simplicity of after-treatment."

If the wound is aseptic, its surface free from hemorrhage, with little traumatism of its edges, and the tension of the silver sutures has not been too great, this happy outcome may be realized.

Besides this ideal closure, however, there are various other methods very popular with individual surgeons. The simple through-and-through interrupted silkworm-gut suture has a host of advocates throughout the whole country, while a continuous catgut peritoneal suture, interrupted catgut or silver-wire fascia sutures, with interrupted silkworm-gut sutures for fat and skin, is also much in vogue. On the best method of suture after laparotomy, the MEDICAL RECORD, July 17, 1897, copies from the *Indian Medical Gazette*, February, 1897, the following: "La Torre (International Congress in Geneva) says: 'A good abdominal scar depends upon three main factors: the location of the incision, the suture material, and the method of suturing.' Bantock: 'Bacteria take no part in the production of pus. They are the result and not the cause of the condition. Suppuration of the abdominal wound or of the suture tract does not originate from the introduction of germs or adult bacilli into the wound, but is the sequence of necrosed tissue in the wound and excessive tension of the sutures. The ordinary interrupted suture suffices in most cases, but in very fat subjects it is advisable to close the peritoneal cavity with continuous sutures, while the rest of the wound is united by two layers of interrupted sutures. Silk is the best material for interrupted sutures, while, for

the continuous, catgut (not chromic-acid gut) is preferred.' Byford: 'Avoidance of wound infection and injury to the tissue during operation is of prime importance. A median incision is advised. First unite the peritoneum, next fascia and muscles, and finally the skin. Use interrupted sutures of silkworm gut.' Edebohls: 'The resistance of the abdominal scar depends upon a broad surface of contact. Divide the fibrous covering of the recti and in the subsequent closure of the wound the peritoneum is first united, next the two recti muscles are sutured together, and the suturing of the fascia and skin completes the operation. Use chromic-acid catgut for all but skin sutures.' Wylie: 'Hernia in the linea alba is frequenly the result of abscesses, often caused by an excessive tension of the sutures. An exact suturing of the fascia is necessary; this should never be done by continuous sutures, which would carry infection throughout the whole wound.' Pozzi and Engström also lay great stress upon an accurate union of the same anatomical structures. Coelho considers deep silk sutures the best method, while Latzko demonstrates a series of microscopical sections of an abdominal scar which show that deep sutures unite many structures not anatomically related to each other, while a careful suturing of fascia to fascia and muscles to muscles, etc., leaves a hardly distinguishable scar."

The question of suture material might be gone into at great length, but practically silk, plain and chromicized catgut, silver wire and silkworm gut are those most generally used, and individually I am using now only plain catgut of various sizes and silkworm gut. Before tying the sutures be sure that all hemorrhage has ceased, otherwise there will be hæmatoma, with subsequent suppuration if the blood is not evacuated or absorbed. When hæmatoma is found to exist, the edges of the wound should be slightly separated at once, the blood squeezed out, and the wound then firmly held together with adhesive strips, and a compress applied. Hæmatoma is most apt to occur when the wound is sutured in layers, owing to the difficulty of firmly closing the fat adjacent to the fascia. I have called this line in laparotomy "the post-operative blood space."

In through-and-through suturing I have never seen hæmatoma, and since discarding silk, and using the non-capillary silkworm gut sutures in the skin, wound troubles in non-drained cases have been exceedingly rare.

How long a wound should remain sealed before inspection is necessary, will depend upon the nature of the case. If it is a drained case, the dressing is changed whenever saturated, or in any event after forty-eight hours. In non-drained cases, it is my custom to remove the dressings on the fifth day, and carefully inspect the stitches. If all is well, I re-dress and wait till the tenth day, when all sutures are removed, the wound is washed with sterile water, dusted with boracic acid, and a light dressing put on. If stitch trouble or infection in the line of incision is going to occur, it will probably take place between the sixth and tenth days, so that careful observation of temperature and pulse should be noted during this time, and the patient interrogated as to pain or unusual soreness in the line of incision.

Primary as well as secondary wound trouble should be carefully watched for, though it is of very rare occurrence, and is due to very septic suture material, or virulent infection of the wound from other causes. In these cases there is a rise of several degrees in temperature during the first twenty-four hours, and upon removing the stitches murky serum or forming pus will be found. The wound should be thoroughly disinfected with a 1 : 1,000 solution of bichloride of mercury, or decinormal salt solution at a temperature of 110° F., and subsequently packed with iodoform gauze.

In pulling open these wounds within the first forty-eight hours, very firm union will be found to exist in the non-infected parts. Indeed I have been surprised to find that after removing all sutures the wound not only remained firmly adherent, but quite decided force was necessary to break it apart. It would seem from this that sutures are left in as a rule longer than necessary, and that in a perfectly aseptic case they could be removed after seven days without fear of trouble, and we all know that they cannot be dispensed with too early when once their work is done. Though suppuration of stitches or in the line of incision is generally ushered in by rising pulse and temperature, such is not always the case, especially if hæmatoma has occurred, for in cases in which the dressing has not been removed for ten days, because everything apparently was going well, the wound has been found separated and bathed in pus upon its final removal. In consequence of this fact, I make it an invariable rule to remove the dressing on the fifth day, and, if all is well, re-dress every forty-eight hours till the stitches are removed and it is evident no wound trouble is likely to occur. Assuming, however, that stitch-hole abscess or suppuration in the line of incision is going to occur in a given case, we shall probably find a rise of two or three degrees in the temperature, and the pulse will run up to 100 or 120; pain in the region of the wound is complained of, and upon removing the dressing hard, brawny areas will be felt on one or both sides of the wound, which are sore upon pressure, and may or may not be red according to the depth of the septic focus. The wound should be separated at once at the nearest point to the focus, provided the induration extends fully to its edges, and pus will be found to exude. If the focus is around a stitch remote from the line of incision, the stitch is removed, being cut on the non-infected side, and pulled through toward the infected side, thus avoiding carrying septic matter across to the healthy side. This rule should be observed in removing all sutures that look tainted on one side or the other. The septic stitch having been removed, and pus found freely flowing, the hole should be well opened with the knife, and the abscess cavity evacuated and washed out. These abscesses usually form in the superficial layers of the fat from skin-suture infection, though they may occur in the muscular layers, and present a genuine abscess of the belly walls. These latter cases require free incisions, ample drainage, and frequent flushings with antiseptic solutions, such as bichloride of mercury, 1 : 3,000, or decinormal salt solution. Peroxide of hydrogen I do not recommend in wound lavage, on account of the power it has of forcing its way into the tissues, and suddenly carrying septic matter into the areolar tissue and fat before destroying it. In this manner it is liable to cause a large suppurating phlegmon.

Peritonitis resulting from wound abscess is exceedingly rare even in the most violent mural forms, owing to the simple fact that the peritoneum unites very quickly and firmly, and forms a highly resistant shield before pus is generated.

Kelly gives the following causes of post-operative wound complications: "Unnecessary handling of the wound, rough retraction of its edges and prolonged pressure with metal retractors, carelessness in checking bleeding in the incision, strangulation of large bits of tissue by ligatures, and the use of sutures penetrating the skin in closing the incision."

To these causes must be added the normal presence of many pyogenic germs in the skin, which are likely to take on active genesis when in contact with air.

Remlinger states that many of these germs are found in the deep layers, and has demonstrated in

these layers the staphylococci albus, aureus, and citreus, the streptococcus pyogenes, and the coli bacillus. When the wound is firmly healed, whether by primary or secondary union, the question of its ultimate support demands consideration.

Personally, I have never had hernia or even a weak wall occur in any case, but I think it good practice to advise the use of an abdominal supporter for six months or a year, according to the length of the incision and the character of the union. All supporters should have perineal straps to hold the front and centre well down, and should be well cut up over the hips to allow the front to come down into good supporting position.

Portsmouth, N. H., October, 1898.

A CHEAP CURE FOR APPENDICITIS.

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This paper is a protest against the current surgical theory and practice that all cases of appendicitis must be split open. This protest is based on twenty-seven years' experience as physician and surgeon, including services in three hospitals, one Western fort, five years in mining surgery, five years in railroad surgery, twelve years in general practice on the central western plateau of Minnesota, and four years in this great city, which—unique in the speed of its rise, unique in the snap of its people, unique in vast tributary territory and population—is decreed by the fates to be the hub of the earth in the near-by future.

My experience is that appendicitis and all other bellyaches for which men now operate are promptly amenable to proper medical treatment. I can recall one hundred cases treated with symptoms of this malady—or of typhlitis or perityphlitis, as it was formerly called—but I have never yet met a case of it in which I felt it was my duty to cut or which terminated fatally. Influenced by the prevailing craze to cut, time and again in coming to new cases of this kind I have thought: "Now, sir, your time has come; in this case you must cut." But, presto! simple medical treatment again availed. Later on I shall cite other unimpeachable practitioners who share my views that medical treatment avails in this malady, one showing forty-nine out of fifty-one cases successfully treated—being more than ninety-six per cent.

My treatment for appendicitis is free calomel-and-soda purgation, supplemented by hot applications, to be followed by a saline if action is too slow. Fæcal impaction of the colon is present in some instances; here the bowel must first be unloaded by suitable enemata. This unloading the bowel is in some instances a slow and difficult task. I recall a case in Shenandoah, Pa., some ten years ago, in which the colon was so severely impacted in a male student, aged twenty years, that, despite the almost continuous use of all kinds of enemata, six days elapsed before the bowel was completely evacuated. The persistent use of ox gall and olive oil finally effected it. Dr. Straub, now of Bethlehem, Pa., was my colleague in this case (it was his case), and the good doctor, if he reads this article, will remember how strenuously he advocated operation after the first few days had elapsed. This patient is now principal of schools in Cranston, R. I.

If symptoms continue after the enemata have done their work, then the calomel-and-soda purgation follows. In all cases light, hot applications, as of cloths dipped in boiling water and slightly cooled, are important adjuncts to treatment. But the main factor in treatment in the vast majority of cases is the calomel-and-soda purgation, and here is the mode of administration.

According to the age of the patient, a few powders, each containing from two and one-half to ten grains each of calomel and bicarbonate of sodium, are ordered. One powder is given every hour until the few powders are taken. That is all there is to the calomel-and-soda treatment, except that when its action is too slow a saline purge is given. Free purgation follows, and all symptoms cease. Is anything simpler? Could anything be cheaper? Certainly nothing could be more effective. The least price charged by druggists for filling a prescription is twenty-five cents, and this sum is the exact charge for these powders, so that the caption of this paper is literally correct.

Calomel, like many a good man, has suffered much for the sins of others. Through no fault of its own, but simply because some of our predecessors abused it, it had fallen under a chronic ban. But, far from needing apology, its record, rightly used, is all eulogy. It is a, or rather the, protean remedy. It fills the greatest number of indications of any remedy in the entire materia medica. "The man who still sits in the seat of the scornful" as to the virtues of this agent, but shows his own profound ignorance. I would almost say of calomel what Beecher said of "cheek"—that a thorough knowledge of its virtues is to the practitioner equal to a cash capital of $50,000. I recall one little formula alone, taken from Vogel, on "Diseases of Children," twenty-eight years ago, which certainly has been well worth from $5,000 to $10,000 cash to me. It is for the summer troubles of infants and children, and is as follows:

℞ Hydrarg. submur ..... gr. i.
Sodii bicarb ..... gr. vi
M. Div. in cht. No. vi. S. One every hour. A teaspoonful of castor oil after all are taken.

For older children the dose can be increased.

As one druggist who filled a three five-grain powder prescription for me afterward asked me if that dosage was not pretty large (his book stated the full dose to be two grains), I will now make a few brief quotations from the article on "Calomel" in the latest edition of the "United States Dispensatory":

"It is the most valuable of the mercurial preparations. . . . In the case of children it is peculiarly valuable, from the facility of its administration. . . . For children larger doses are generally required in proportion than for adults. Not less than from two to three grains should be given as a purge to a child two or three years old. . . . When given alone, it should be followed if it does not operate in six or seven hours by castor oil or some other cathartic. . . . As a purgative, from five to fifteen grains or more may be exhibited. . . . Enormous quantities may be given with impunity. . . . With a view to salivation, the dose is from half a grain to a grain three or four times a day, to be increased considerably in urgent cases. . . . In very large doses calomel is supposed by some to act directly as a sedative, and with this view has been given in yellow and malignant bilious fevers, violent dysentery, malignant cholera, etc. The quantities which have been administered in such affections with asserted impunity and even advantage are almost incredible. A common dose is one or two scruples repeated every half-hour or hour."

The protean quality of this remedy is proven by the fact that it is laxative, purgative, sedative, secernent, alterative, resolvent, tonic, anti-emetic, antiplastic, antiphlogistic, antisyphilitic, antiseptic, and, by removing the cause of pain, anodyne, as illustrated by the

class of cases under discussion in this paper. A meeting of the British Medical Society, held at Belfast some ten years ago, was a continuous eulogy of this remedy. Those who wish to know the facts should procure that report.

A few illustrative cases:

I was called in consultation with Dr. W. C. Bedford, now of Salt Lake City, to Mrs. Charles B——, aged thirty-five, six months pregnant, with urgent symptoms of this malady. On retiring to consult, I asked the doctor if he had given any calomel, to which he replied: "Yes; six grains." I asked him if he thought that was enough. He said: "Yes." "Well," I replied, "we will let it go at that for to-day." Next morning early I was called to the case again. I first went to the doctor's office, and told him I would not accompany him to the case except I be allowed something to say in the treatment. He agreed that I should. We found the patient in a most serious condition. I prescribed four powders, each containing ten grains of calomel and ten grains of bicarbonate of sodium, one to be taken every hour until free purgation occurred. Soon after two or three of the powders had been administered all symptoms subsided.

One evening, while I was driving rapidly home from a call on the borders of Dakota, a young farmer, living three miles from town, called me in to see his son, who had all the urgent symptoms of this ailment. I have already stated that time and again I have been called to cases in which I felt myself that "very likely I must operate in this case." I distinctly recall that in this instance, after dealing out four calomel-and-soda powders and directing this father how to administer them, I added: "I will be back in the morning, Jim, and if this treatment don't do, I may have to do something else." Next morning the boy was well, no trouble whatever remaining.

On the 29th of September (five weeks ago) I was called post haste to a barber shop here, to see a burly young man, aged eighteen—Gus Weber—who had been taken suddenly ill in the Piano Manufacturing Company's Works. He was so seriously ill that he could not be removed six or eight blocks to his home, but was dropped in at a relative's in this barber shop. He was suffering extreme pain, so that he could scarcely speak, and when I asked him where his trouble was he simply planted his hand over his right groin. Some of the shop hands who accompanied him asked if it was not appendicitis, and my own *alter ego*, like *Gobbo* and *Bottom* and the rest of Shakespeare's witty fools, kept whispering to me: "Stuck, at last; go home and get your cutting-machines." But I did nothing of the sort. I ordered folded towels dipped in boiling water to be applied to the seat of the pain, and three powders, five grains each of calomel and soda, given one every hour. I made five hourly calls that evening, and at six o'clock next morning this patient opened the barber-shop door to let me in. He was all right.

At 9 P.M., October 12th, I was called to see a boy, aged thirteen. The young man who called me stated that he was a medical student past eighteen months and was the son of a physician. He said this boy was very ill, either with typhoid fever or appendicitis—he could not make out which—and begged me to do my very best for him. The boy had high fever, rapid pulse, and severe pain, extending from the liver down to the right groin. I ordered two powders, each containing two and one-half grains each of calomel and soda, one to be given at once, the other an hour later, and that a report of his condition be sent me next morning. At 8:45 next morning the boy himself called on me, to know if he could go to school that day.

My neighbor, Mr. Gilmore, states that his son had appendicitis, and consulted separately Drs. S—— and H——. Each stated emphatically that he must be operated on, and each went so far as to state the fee—$100. The young man, however, did not take the advice of these surgeons, but consulted Dr. N. S. Davis, Jr., whose treatment cured him without operation. Why should not medical treatment cure inflammation of this organ as well as that of any other organ? Do we remove all inflamed organs? If not, why this one?

Let me quote, from the *Medical Times*, Dr. Terry's medical treatment for appendicitis: "Dr. M. O. Terry, surgeon-general of the national guard of New York, advocates the use of oleaginous cathartics for the treatment of appendicitis, declaring that of fifty-one cases under his personal supervision forty-nine were successfully handled without operation. This treatment is as follows: At first cathartics of castor oil and sweet oil followed by hot water are given, until the bowels are thoroughly cleaned out. This treatment is followed by enemas of glycerin and sweet oil. Flaxseed poultices soaked in sweet oil are kept on the abdomen. The diet is restricted to very light, easily digested foods. The oil treatment, Dr. Terry says, removes the friction of the inflamed tissues and relaxes them during resolution. In this way, he says, he has cured cases of chronic recurrent appendicitis. To prevent a return of the trouble, after the original treatment he prescribes a tablespoonful of sweet oil followed by a glass of hot water before each meal for several weeks."

Evidently Dr. T. J. Happel, vice-president of the American Medical Association, is also like-minded with me on this question. I quote from his article, entitled "Fuss, Feathers, and Foolishness," which appears in *Leonard's Illustrated Medical Journal* for October, 1898: "At the outset I would disclaim any personalities or intention to ruffle in the least the feelings of any one, but offer the paper with the hope that it may serve as a balance wheel for a machine that for the last few years has been going, as I believe, at a breakneck speed. . . . The operation for appendicitis still has its headquarters in ——. Any case of colic or bellyache occurring in a pauper, if picked up in the streets, is at once transferred to the —— Hospital, and as soon as the patient can be boiled and cleaned with bichloride he is placed upon the operating-table and the useless appendage removed. If he recovers, all right—a record is being made; if he dies, there is one pauper less in the city and the operation is not counted. The favorable record must not be broken by counting this one fatal case."

And again: "The pell-mell rush into the field of specialism by half of the college students of the day accounts to me in a satisfactory way for much of the present state of affairs. Many . . . desire to enter upon the field of surgery . . . forgetting and ignoring the fact that a knowledge of general medicine is necessary to and must precede the successful prosecution of specialties. . . . The specialists in abdominal surgery, more than in any other line, have been looking more to making records than to the pathological condition of the cases brought before them; and too many [patients] have been subjected to the cold argument of a sharp knife, more than can be justified by any course of ratiocination."

Acute Urethritis in the Male.—From a specially conducted experience with potassium-permanganate irrigations I would conclude that while the duration of the discharge is thereby limited, and the evidences of the inflammation are rapidly reduced, the ultimate recovery of the mucous membrane is not only not hastened, but its course is not spared the usual disappointing relapse.—JAMES PEDERSEN.

ELECTRICITY IN DEAFNESS AND STRICTURES OF THE EUSTACHIAN TUBE.[1]

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If specialists had a sure cure for chronic middle-ear diseases with deafness, this paper would not have been written. The usual routine of aurists keeps some patients deaf who would be benefited, perhaps cured, if electricity had been employed.

In the month of April, 1868, I had a patient, Mrs. M. C——, widow, who had been deaf for eight years. Several aurists of the highest standing found deafness due to cartilaginous growth over the left tympanum, etc. The routine treatment did not improve her condition. The writer was then induced by Dr. Neftel to give galvanism, which improved the hearing considerably, so that the patient could hear all noises and music in the street and conversation carried on only a little louder than normal. While she never was cured, yet she was made entirely comfortable, and on bright, clear days could hear very well.

In February, 1874, she had a pain at the lower part of the humerus, in the bone and muscles.

March 27th. At the dinner table, without anybody touching her, she felt a snap on the arm, and a distinct loud sound was heard by everybody at the table. One hour later the writer saw the patient and found a complete fracture of the humerus, which diagnosis was verified by authorities. Union and recovery took place in due time. She has had several ailments during several years, and could hear pretty well.

About 1890 the deafness increased, and as she had not had treatment it grew worse, so that in 1896 she was almost as deaf as years ago.

In 1897 she grieved about the death of her daughter.

In April, 1898, she came again for treatment for aneurism of the brachial artery, with distinct calcification and atheroma. External galvanic applications, particularly over the calcifications, absorbed the latter and improved the circulation. She has not come regularly for treatment, but is materially benefited; she is not cured, and never will be. Galvanism has ameliorated her deafness, so that for over twenty years she was comfortable, but at the present time she is very deaf again.

Deafness Improved by Galvanism.—Many years ago the writer used galvanism in different stages of deafness, and always on patients who were not benefited by specialists; in fact, they were told that they were incurable. In some instances such patients told the specialist that the writer treated them with electricity, and received generally the answer that electricity probably would not hurt them; they might be amused by it. Those specialists were my friends! Patients were always benefited by the galvanic applications, and some very much improved. As all the patients were under treatment for other ailments, and the deafness was treated only as an intercurrent malady, no regularly detailed notes were kept; but it is certain the electricity benefited, though given in an experimental manner. All these cases were treated during the period of 1868 to 1874, and are mentioned here only to show that electricity is a therapeutic measure which should be cultivated by specialists. Progress has been made gradually, and many benefits in the treatment of deafness have been originated by the efforts of members of this society.

Dr. Edward C. Mann has reported the treatment of blindness and deafness resulting from cerebro-spinal meningitis,[1] a disease generally considered incurable. He believes that in the constant current we have a means more powerful than any other of modifying the nutritive conditions of parts that are deeply situated. I believe that the results of our investigation in this direction will lead us to be able to class blindness and deafness resulting from cerebro-spinal meningitis among the curable forms of diseases of the nervous system.

From Vienna I hear from Dr. H. L. Morse that electricity is used there for the relief of tinnitus. A weak current of galvanism is used, sometimes followed by the faradic induced current. The results vary. Urbantschitsch uses electricity for otalgia.

Hysterical Deafness.—This form has been cured by electricity. Cases have been published by M. Ouspenceky, of Moscow,[2] in the *Annales des Maladies de l'Oreille*. The electrical examination and diagnosis of the ear have been treated by our fellow, Dr. W. F. Robinson, in section B, page 56, in the "International System of Electro-Therapeutics." Cataphoresis in labyrinthine deafness has been used by Dr. Gagney of London,[3] and reported November 7, 1889, at the Harveian Society. He used Lugol's solution. Nervous deafness has been successfully treated by Erb, Brenner, and De Watteville, by excitations of the auditory nerve by galvanism with interruptions.[4] Automatic instruments of electricity have also come into existence. Dr. Henry C. Houghton, of New York, has constructed one, and has described it in a paper, "A Phono-Faradic Massage Battery for the Treatment of Aural Cases."[5] Mechanical massage by electricity is indicated in thickening of the drum, partial paralysis of the nerve, or ankylosis of the ossicles, etc. A weak faradic current will help to break up the adhesions between the ossicles in subacute catarrhal otitis media, a disease very difficult of treatment.

Deafness from Strictures of the Eustachian Tube.—As strictures of the Eustachian tube are formed in a manner similar to that producing stricture of the urethra, it is very plausible that they should be cured by electrolysis, like other strictures formed after chronic inflammations. Others have argued to the same effect and made cures accordingly. In a paper read in Brooklyn at the first meeting of the fifth district branch of the New York State Medical Association, October 13, 1885,[6] the writer mentioned cases of M. Mercier and M. Garricon-Desarines.[7] Their operation consists in passing a fine silver sound into the Eustachian tube and a small olive-shaped electrode into the external auditory meatus. A feeble current is then passed, the sound is gradually pushed on, and the stricture disappears.

In 1890, while I was in London, Dr. W. E. Steavenson communicated to me his treatment of Eustachian obstructions at St. Bartholomew's Hospital. This he conducted in collaboration with the aural surgeon, Mr. Cumberbatch. The first seven cases were reported[8] in Steavenson's "Electrolysis in Surgery," and the writer has mentioned these cases in his section M, page 46, "International System of Electro-Therapeutics." The operation had then been performed a large number of times without any unpleasant experience; nor had the treatment anything more than very temporary discomfort for the patients. In those cases in which the deafness has been due to a simple obstruction of the Eustachian tube, the results have been most encouraging.

[1] Read at the eighth annual meeting of the American Electro-Therapeutic Association, in Buffalo, September 14, 1898.

[1] New York Medical Abstract, January, 1881.
[2] Cincinnati Lancet-Clinic, April 8, 1898.
[3] British Medical Journal, November 16, 1889.
[4] Leszynsky, sect. K, "Intern. Syst. Elect.-Therap."
[5] Journal of Electro-Therapeutics, April, 1898.
[6] Gaillard's Medical Journal, December, 1885.
[7] Academy de Médecine de Paris, March 11, 1884.
[8] The Lancet, November 24, 1888.

Other electro-therapeutists have followed, and it is pleasant to state that some specialists use now with success electrolysis in stricture of the Eustachian tubes. Among the latter is particularly Dr. Arthur B. Duel, of New York, whose report has been mentioned in several journals. It may be of general interest to quote from an article in the *Journal of Electro-Therapeutics* of March, 1898.

"Dr. Arthur B. Duel says that one of the chief causes of deafness and tinnitus aurium is the narrowing of the lumen of the Eustachian tube by hypertrophy of the submucous tissues surrounding it, thereby preventing the maintenance of the normal air pressure behind the tympanic membrane. He recommends the following method: For the purpose of conducting the current he has had four copper bougies, varying from No. 3 to No. 6 (French scale), mounted on No. 5 piano wire. These are passed through small, insulated, pure silver catheters, and drawn back until the bulging portion of the bougie fits tightly in the mouth of the catheter. The other end of the wire is fastened an inch and a half from the funnel-shaped end of the catheter to the handle, which connects it with the negative pole of the battery. The positive pole is connected with the patient's hand by means of an ordinary contact electrode. The battery should be supplied with a perfect rheostat and milliampere meter. The bougie is passed through the tube in the usual manner, the tip being pushed forward until it is felt to be obstructed by the stricture. The current is then slowly turned on until from two to five milliamperes are used. It is never necessary to use more than this, and probably the best results are obtained by a longer contact with a small amperage than *vice versa*. After a contact of from two to five minutes, the bougie is felt to pass on through the softened stricture with a slight pressure. The bougie is then slowly withdrawn and the current gradually turned off before the catheter is removed. The current should never be opened or closed suddenly."

The whole procedure of Dr. Duel's is very sensible, arranged according to the rules of aural surgery and the laws of electro-therapeutics, and meets fully the writer's rules for the application of electrolysis in the treatment of strictures. Reports say that Dr. Edward B. Dench, aural surgeon of the New York Eye and Ear Infirmary, also uses electrolysis with success in strictures of the Eustachian tube. Statistics could not be procured directly, as the doctor was in Europe when this paper was written. Sometimes patients have been sent to the writer for the treatment of Eustachian obstructions by electrolysis, who have had professional care by the best specialists in the country, without success. Knowing how difficult such cases are to handle, and not being a specialist for ear diseases, in some cases I have had the assistance of Dr. Edward S. Peck, of New York, who has taken part in these operations and helped to devise a new instrument. We have had considerable success, and the details of a few cases will be given here for illustration.

Case I.—December 30, 1894. Mr. J. E——, aged thirty-five years, was sent to me from Chicago by Dr. Nieswanger. He was almost deaf; had been suffering from catarrh for a long time. Five years ago he began to feel that hearing was a little impaired, first on the right side. An excellent specialist of St. Louis examined him and made the prognosis that the hearing would grow gradually worse. He had a musical education, and could distinguish discords in singing or on musical instruments. Hearing became gradually worse, and unpleasant noises in the ears troubled him. One year ago an authority in New York had found on examination that the anatomical relation of the ears were normal, but hearing nevertheless was much impaired; no treatment would cure or improve him. He had been treated in Hot Springs and other localities in various ways. Operation on the turbinated bones improved breathing; galvano-cautery and inflation by Politzer's method, however, did not help at all. He still had catarrhal discharges and his hearing was much impaired. The left nasal canal is smaller than the right; partial deafness is greater on the right side.

December 31st, Dr. E. S. Peck made a careful examination in consultation with me. We found the relations of the ears normal; the passages, however, were full of catarrhal secretions, and there were strictures in both Eustachian tubes.

January 2, 1895. Electrolysis in right Eustachian tube. The catheter was introduced till arrested by the stricture and then connected with the negative pole of a galvanic battery. An electrode pad in the hand was used as the positive pole. The current, from two and one-half to three and one-half milliamperes, was used for five minutes, during which time the movable point of the catheter advanced four-tenths of an inch in the stricture. No unpleasant symptom was experienced.

January 4, 1895. Patient considered his hearing improved. Electrolysis was used in the right ear in the same manner as before.

January 6th. Electrolysis repeated. Right ear, five milliamperes for six minutes; the movable electrode advanced three-tenths of an inch. Left ear, four milliamperes for three and one-half minutes; electrode advanced four-tenths of an inch. Patient felt better and had no unpleasant symptoms. After two more *séances* the patient felt so much improved that on account of urgent business in Chicago he left for home. The time allowed was too short to expect an entire cure, but he felt content with the improvement, and all that could be learned afterward was favorable.

For future use we constructed an improved electrode, which may be described as follows: The instrument consists of a hard-rubber Eustachian catheter, shortened one inch. Of course the hard rubber is an insulator. Through the hollow tube is inserted a metal electrode, the end emerging from the open catheter as a small egg-shaped bulb or olive, like the bulb in the writer's electrodes for the urethra. From the exterior end of the catheter emerges a conical cylinder, which is divided into ten equal rings, each representing one-tenth of an inch. On the outer side is a binding screw, for the attachment of the rheophore to the negative pole of the battery. The rod can be pushed forward by one-tenth of an inch at a time to one full inch, so that when the rod is pushed inside the catheter the whole instrument is just as long as any Eustachian catheter; the one-inch conical piece making up for the one inch taken off the catheter. The *modus operandi* is similar to the treatment of an urethral stricture. The catheter is introduced into the Eustachian tube with great care, till the stricture arrests its progress. When it is attached to the negative pole of the galvanic battery the patient takes in his hand as a positive pole a moistened pad or handle. The current is from zero very slowly increased, according to the toleration of the patient, but as a rule should not be stronger than five milliamperes. The operator very gently guides the inner tube as the electrode, and pushes it forward only when the electrolytic current has absorbed the obstructions, and must never do too much in one *séance*. Undue force must never be used; the electrolysis must do the work of absorption. The milliampere meter is a necessity. The current must be steady, slowly increased, and before removal of the catheter slowly decreased to zero. Otherwise all rules should be observed which the writer has given for the treatment of urethral strictures by electrolysis. Another case will demonstrate the details and progress of the treatment.

Case II.—Twelve years' aural catarrh, two years'

deafness. November 9, 1897. Mrs. J. M——, aged forty years, married, has had catarrh for twelve years, for which she has been treated off and on. Hearing has been affected, but the real deafness is two years old. She has been treated in the South, in St. Louis, and in New York by very competent authorities, in the regular routine manner. She complained of much trouble from dyspepsia, meteorism, poor appetite, and getting tired easily. The bowels were somewhat constipated; the tongue was clear.

Consultation with Dr. E. S. Peck, who examined and treated the patient together with me. A.D., watch heard feebly in all regions; A.S., watch heard much better in all regions. Slightly loud-spoken voice at six feet and for right ear the same at three feet.

November 19th. Electrolysis. Eustachian catheter inserted as negative pole; positive electrode, pad in hand. Five milliamperes for five minutes, during which time the electrolysis advanced the catheter four-tenths of an inch.

November 21st. Electrolysis by Eustachian catheter as negative pole; positive in hand. Five milliamperes for five minutes; advanced six-tenths. Electrolysis to left side of Eustachian tube. Positive pad behind mastoid. Three milliamperes for four minutes; catheter advanced four-tenths. A.D., voice slightly raised at two and one-half feet. Cutaneous surface very sensitive to the electric current.

November 23d. A.D., Eustachian catheter, five milliamperes for five minutes; six-tenths. A.S., Eustachian catheter, six milliamperes for five minutes; two-tenths.

November 25th. General galvanization. Positive in hand; negative behind ear and over mastoid; five milliamperes. Skin very sensitive. Five milliamperes reddened skin, caused a metallic taste, and only a fraction of a milliampere caused dizziness.

November 26th. Electrolysis with Eustachian catheter as before. A.D., six milliamperes for six minutes; seven-tenths. A.S., six milliamperes for four minutes; two-tenths.

November 28th. A.D., electrolysis, Eustachian catheter. Eight-tenths in five minutes; five milliamperes. A.S., electrolysis, Eustachian catheter. Three-tenths in four minutes; five milliamperes.

November 30th. A.D., electrolysis, Eustachian catheter. Nine-tenths in five minutes; five milliamperes. A.S., electrolysis, Eustachian catheter. Three-tenths in four minutes; five milliamperes.

December 3d. A.D., electrolysis, Eustachian catheter. Ten-tenths in five minutes. A.S., electrolysis, Eustachian catheter. Seven-tenths in five minutes.

December 5th. A.D., electrolysis, Eustachian catheter. Ten-tenths in five minutes; six milliamperes. A.S., electrolysis, Eustachian catheter. Seven-tenths in five minutes; five milliamperes.

December 7th. A.S., electrolysis, Eustachian catheter. Eight-tenths in five minutes; five milliamperes.

December 15th. A.D., electrolysis, Eustachian catheter. Ten-tenths in five minutes; five milliamperes. A.S., electrolysis, Eustachian catheter. Seven-tenths in five minutes; five milliamperes.

December 19th. A.D., electrolysis, Eustachian catheter. Ten-tenths in six minutes; six milliamperes. A.S., electrolysis, Eustachian catheter. Eight-tenths in six minutes, five milliamperes.

December 24th. Electrolysis, Eustachian tube advanced on both sides to its full length. Ten-tenths in six minutes; with six milliamperes.

December 29th. Electrolysis as before; on both sides full length. Ten-tenths of catheter.

During January, 1898, the same treatment was continued and eight *séances* were held. When the patient went home she was very much improved. The strictures of the Eustachian tubes have been cured by electrolysis, but the patient suffers from other ailments in the auditory anatomy, which specialists have not removed.

The object of this paper was: 1. To show that electrolysis can cure strictures of the Eustachian tube. 2. To induce the profession, and particularly the aurist, to add electro-therapeutic measures to the treatment of the ear in deafness, and particularly when other means will not cure.

A CASE OF PRIMARY TUBERCULOSIS OF THE CERVIX UTERI.

By FRANK S. MATTHEWS, M.D.,

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Since the publication of the work of Williams[1] and of Penrose and Bryen,[2] much work has been done and many articles have been written to show the frequency of tuberculosis of the female genital tract. Williams' investigations showed eight per cent. of all tubes removed for inflammatory disease to be tuberculous. Penrose and Bryen, in a routine examination of all tubes removed by them for inflammatory disease, found nine cases of tuberculosis of the tubes in fifty-two cases, or seventeen per cent. A fact to which they call special attention is that in a large percentage of their cases neither from the clinical history nor from macroscopical appearances could a diagnosis of tuberculosis be made.

Tuberculosis of the endometrium is also encountered in a considerable number of cases. In most of them the process has extended to the endometrium from the tubes. In a small number of cases the tuberculosis is primary, so far as the genital organs are concerned, in the endometrium. But whether the uterine mucosa be involved primarily or secondarily, the cervix uteri very often escapes the infection. It has been suggested that the solutions of continuity occurring with menstruation and labor render the body of the uterus more prone to tuberculous infection than the cervix. A number of cases, however, have been reported, in which the cervix uteri was primarily infected. J. D. Williams[3] reports two cases. Emanuel[4] and E. Frankel[5] each report a case. In all of these cases there were extensive tuberculous lesions in distant organs.

Brief reviews of these cases may be found in the volume on "Tuberculosis of the Genito-Urinary Organs," by Nicholas Senn.

More recently a case has been reported, in which the lesion in the cervix was the sole tuberculous one. The following review of the case is taken from the *Centralblatt für allgemeine Pathologie u. pathologische Anatomie*, October, 1898.

"E. Kaufmann:[6] Autopsy on a woman, aged seventy-nine. The cervix was eroded, showing infiltrated growth with necrosis of tissue and formation of polyps.

"Microscopical examination showed epithelioid and giant cells, with granulation tissue and cheesy degeneration. Tubercle bacilli were demonstrated. The autopsy showed this to be a case of primary isolated tuberculosis of the cervix uteri. The uterine body was small. The tubes, ovaries, and lymph nodes were normal."

We add the following case of tuberculosis of the cervix, with, so far as could be clinically determined, no other tuberculous foci. In spite, however, of absent clinical evidence, the probabilities would be strong of the existence of other foci.

[1] Johns Hopkins Reports, vol. iii., 1893.

[2] American Journal of the Medical Sciences, November, 1894, and March, 1896.

[3] Medical Press and Circular, September 5, 1894.

[4] Zeitschrift f. Geburtshülfe u. Gynäkologie, Bd. xxix., S. 135.

[5] Centralblatt f. Gynäkologie, No. 39, 1896.

[6] Zeitschrift für Geburtshülfe u. Gynäkologie, Bd. xxxvii., S. 119.

E. H——, negress, single, aged twenty-two years. The patient was admitted to Roosevelt Hospital, service of Dr. George M. Tuttle, April 18, 1897. She menstruated first at fifteen, at first irregularly; later every three weeks. The duration of flow was one day, and it was scant. There was considerable dysmenorrhœa. She was never pregnant.

Present illness: Dysmenorrhœa has been increasing for the past three years, and during the same time she has suffered from colicky hypogastric pains. She has a profuse muco-purulent and blood-stained discharge. She now suffers from headache, backache, and lack of energy. The bowels are costive. Temperature, 99.6° F.; pulse, 90. Urine, acid; specific gravity, 1.023; contains a faint trace of albumin.

Examination: The cervix is large, worm-eaten, and its cavity is excavated. It bleeds easily. The growth has extended to the vagina and involved it, especially on the anterior wall. The left tube and ovary are easily felt and appear normal. The right appendages are slightly enlarged. The broad ligament is thickened. The fundus is enlarged and movement restricted.

On April 26th, under ether anæsthesia, the ovaries, tubes, and uterus, together with the diseased portion of the vaginal wall, were removed by vaginal hysterectomy. Previous to the hysterectomy the cervical cavity was curetted and packed with gauze. The broad ligament was ligated with catgut. Adhesions were found between the appendages and intestines. The pelvic cavity was packed after Mickulicz's method.

Convalescence was retarded by a severe secondary hemorrhage on the following day.

May 2d, the wound was free from infection.

May 6th, the sinus was two inches deep.

May 20th, the patient was allowed up.

May 31st, a granulating spot appeared at the vaginal vault.

June 14th, the patient was discharged healed.

Pathological report: The broad ligaments are thickened; ovaries, small and adherent; the right tube is distended to above the size of a lead pencil; left tube of normal size. The uterine body is not enlarged. Its cavity contains a dark bloody material. The cervix is enlarged to at least twice its normal size, and contains a cavity as large as a hickory nut—the result of curetting as a preliminary step to the hysterectomy. The mucous membrane of the vagina adjacent to the cervix and removed with it is deeply ulcerated.

Microscopical examination shows the interior of the cervix to be the seat of a diffuse tuberculous inflammation. There are tubercle tissue, cheesy degeneration, and giant cells. Deep in the muscular wall of the cervix there are discrete miliary tubercles. The broad ligament shows œdema and moderate exudative inflammation, but no tubercle. The body of the uterus has a slightly enlarged cavity distended with blood and débris. Its mucous membrane is thinner than normal and almost entirely destitute of glands. The epithelial lining is fairly well preserved, and there are no evidences of tubercle above the internal os. The right tube shows a similar condition—a cavity distended with blood and débris, a mucous membrane whose folds have disappeared at its inner end and whose lining epithelium is well preserved. The right tube and ovary contained no tuberculous lesions. The left tube, which was not preserved for microscopical examination, was said not to have been enlarged and distended, as was the right.

77 West Fiftieth Street.

Amyl Nitrite in Diabetes Insipidus.—Dr. Ernest F. Clowes, house physician of the Royal County Hospital, Winchester, reports the successful treatment of diabetes insipidus with this drug. There was a gain of ten pounds in weight.

PRELIMINARY COMMUNICATION ON THE BIO-CHEMISTRY OF THE BACILLUS TUBERCULOSIS.[1]

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After the certain specific microbes for different diseases were found, the question arose, How do they produce the disease? And the chemical theory was to become the prevailing one. The microbes are not simple parasites that are robbing an organism of its nourishment; they are attacking by means of poisons —toxins. What is the nature of those toxins? Where do they originate? were the next questions of pathologists.

The products of metabolism of the micro-organisms were the first to attract attention of students, and a number of toxic substances of different chemical natures were soon discovered among them.

Soon, however, facts were established which showed that the body substance of micro-organisms is toxic *per se*. Thus Wissokowitz found that the substance of anthrax bacillus produced abscesses. Buchner saw the same effect of the pneumo-bacillus. But most interesting and striking were the observations of Professor Prudden and Dr. Hodenpyl, that the dead tubercle bacilli are able to produce in the organism of animals formations very similiar to those in ordinary tuberculosis. The same experiments were then repeated by Straus and Gamaleia and by a good many investigators in Germany, and the main conclusions were corroborated by all the authorities.

This fact being established, the next question was, what chemical part of the micro-organism was it that was toxic? Buchner was first to answer the question *a priori*, naming the proteid matter of the micro-organism as the cause of their toxic effect. But if so, why do only these proteid bodies, in distinction from all other proteids, possess such a peculiar action? Are they different in their chemical nature? Nencki and his students were the first to investigate the question, and they found some substances of proteid nature that differed considerably from all other proteids, and which they called mycoproteids. But the methods they employed were such as would change the true nature of any proteid, and their conclusions leave enough room for objections. The opinions of later workers were contradictory to those of Nencki. Of all of them, however, only very few succeeded in obtaining true genuine proteids from the body substance of bacteria. Hellmich, in Franz Hoffmeister's laboratory, was the first to obtain a coagulable proteid from a water bacillus, and later Hoffman precipitated by means of alcohol a proteid from the water extract of tubercle bacilli.

Nishimura in Rubner's laboratory was investigating the nature of the nucleins of microbes, but failed to extract the nuclein itself and had to limit his work to the products of their decomposition, the nucleobases. This work was important, in so far as thereby to establish the fact that by the nature of their nucleins the bacteria do not differ from any other living cells. Finally Gileo-Galeotti succeeded in extracting from different bacteria, by means of weak alkali, a nucleo-proteid with one per cent. of phosphorus and twelve per cent. of nitrogen.

It was our task to examine the chemical and toxicological nature of the proteids of tubercle bacilli, and this work, the result of which I intend to report briefly, was carried out during the past summer in the Saranac laboratory of Dr. Trudeau, in collaboration with Dr. E. R. Baldwin. Our first aim was to use

[1] Read before a meeting of the New York Pathological Society, on November 9, 1898.

such methods in our work as to attack the original nature of the body substance as little as possible. Further, in order to be certain that the proteids that we were to obtain were not contaminated with those of the media, we used mineral media, taking for the necessary supply of nitrogen to the bacilli asparagin, and for the carbon supply mannite and glycerin. The growths were transferred directly from the flasks on a suction funnel, the culture media filtered off and the residue was washed several times with very small quantities of water. It was then dried in vacuo over sulphuric acid, to dryness. The dry bacilli were then weighed and placed in a porcelain mill and left there to be ground for two or three days. The object of grinding the bacilli was the same as Koch's, namely, to crush as much as possible the membrane of the micro-organism and thus facilitate extraction. We must, however, remark that, even after prolonged grinding, we never succeeded in total disintegration of the bacilli, and we could always find in the test specimens numbers of tubercle bacilli taking their usual stain. The very fine powder obtained after grinding was extracted with eight per cent. of ammonium chloride solution for about two days. To avoid contamination as much as possible, the flask was always kept sealed with chloroform. The extraction was then repeated several times, and the extracts were analyzed.

It proved to contain three different proteid substances of the coagulation points: 50–64° C.; 72–75° C.; 94–95° C.

These proteids differ further in their relations to neutral salts.

1. Thus, fifty per cent. of magnesium sulphate will precipitate only the first one, and eighty-five per cent. of the same salts will complete the precipitation of the first proteid. Magnesium sulphate to saturation precipitates the second proteid, but does not precipitate the third.

2. Sodium chloride to saturation precipitates only the first one, leaving in solution the other two.

3. Ammonium sulphate precipitates all the three.

Their relations to acids seems also to be somewhat different, inasmuch as it requires less acid to precipitate the first proteid than the last; but on addition of hydrochloric acid diluted to 0.2 per cent. all the three proteids are precipitated.

In order to obtain each proteid in purity the following method would be advisable: Saturate the ammonium chloride extract with magnesium sulphate. The precipitate will contain the first and second proteids, the filtrate the third (Solution A). Wash the precipitate with fifty per cent. of magnesium sulphate; the first proteid will remain insoluble, the second in solution (Solution B). Saturate this solution (Solution B) again with magnesium sulphate and wash repeatedly with eighty-five per cent. of magnesium sulphate = proteid 2. Saturate the first filtrate with ammonium sulphate = proteid 3. Dialyze out the salts of each of the proteids and they will be obtained in purity.

The largest quantity we had for analysis was twenty drachms of dry material.

The magnesium sulphate precipitate was too small to separate the first two proteids one from another. The entire magnesium sulphate precipitate was then purified and tested for phosphorus with positive result.

The third proteid was obtained by means of coagulation, and proved to be much richer in phosphorus than the first two. Another point of difference between them was in the color reactions; the first two gave a positive Biuret's, while the second gave a negative one.

The residue of the ammonium chloride extract was freed of the greatest part of salt by repeated washing with water and then digested in pepsin with hydrochloric acid; the residue was filtered, washed, and extracted with 0.5 per cent. of aqua ammonia and the extract treated with diluted hydrochloric acid of about 0.1 to 0.2 per cent. A precipitate was formed. This precipitate gave xanthoprotein and Biuret's reactions. Part of it was treated for determination of bases, but the quantity was not large enough to separate the individual bases.

To sum up our results, we can say that the body substance of tubercle bacilli does not contain any proteids of the albumin nature; that as the nucleus of cells it consists mostly of nucleoproteids; that one of the nucleoproteids differs from all the other nucleoproteids inasmuch as it is not precipitated by magnesium sulphate (and in this point resembles nucleohiston), and does not give the Biuret's test; that it contains nuclein or nucleins as such.

Another point worth noticing and further investigating is the coincidence of the coagulation point of the first proteid and of the sterilization point of the tubercle bacilli; both are about 70° C. It would be very interesting to investigate other bacteria in the same direction.

I wish also to remark here that I tested the sample of tuberculo-plasmin prepared by Drs. E. L. Trudeau and E. R. Baldwin, after Buchner's method. The sample proved to contain only the first proteid.

The toxic effect of the different proteids we are not as yet ready to communicate. This part of the work is being studied at present by Dr. E. R. Baldwin.

We hope to be able to continue during the coming winter our studies on the chemical side, so as to be able to work up the quantitative composition of the different substances.

In conclusion I wish to express my sincere gratitude to Dr. E. L. Trudeau, who took great interest in the work. His private scholarship enabled me to carry out this very expensive investigation. Dr. E. R. Baldwin very kindly collaborated in the entire work, and I desire to express my thanks and indebtedness to him.

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A CASE OF HODGKIN'S DISEASE TERMINATING WITH LEUCOCYTOSIS.

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The patient was A. F——, female, aged thirty-one years. She was born in Hungary, of Jewish parentage. She entered Bellevue Hospital on September 27, 1898, during the service of Dr. Nammack, to whom I am indebted for the following notes.

The condition of the patient was such that no previous history could be obtained from her, and the relatives were able to state only that the patient had been sick for a long time and that she had been treated at various city dispensaries.

"Physical Examination.—Patient was very poorly nourished. There was extreme subjective and objective dyspnœa. The expression was anxious; the lips were blue. There was great restlessness; skin cold and clammy; abdomen somewhat enlarged. The legs

were œdematous, and the inguinal and cervical glands enlarged.

"Lungs: Auscultation was difficult on account of loud fluid râles over the entire pulmonic area. The breathing and voice are broncho-vesicular behind, and the same but less in degree anteriorly. There is dulness on percussion over the posterior region.

"Heart: The apex beat is hardly visible, but on auscultation it is found in the fifth space, nipple line. There is a faint systolic murmur heard at the apex area. The pulse is rapid, soft, and weak. Considerable arterial change is evident.

"The liver dulness is increased, extending down to near the umbilicus. The inferior border is palpable and is found to be smooth and sharp. The area of splenic dulness is enormously enlarged, and extends down to the left iliac crest. Palpation shows the tumor to be smooth and regular in contour.

"The temperature was 101.2° F.; pulse, 88; respiration, 34.

"The urine was amber colored, cloudy; specific gravity, 1.023. There were granular casts and non-characteristic epithelial cells. There were no albumin and no sugar.

"The patient's distress and dyspnœa were controlled by means of morphine. The temperature varied from 100.5° to 102.7° F. She became very restless and noisy, and finally died on September 30th."

Some time after the death of the patient I found that, previous to her admission to Bellevue, she had been under treatment at one of the dispensaries, where several examinations of her blood had been made, and the two following blood counts were furnished me through the kindness of Dr. William Berkeley:

May 10, 1898: Leucocytes—polynuclear neutrophiles, 32.5; large lymphocytes, 41.5; small lymphocytes, 24.8; eosinophiles, 1.2.

May 12, 1898: Red blood cells, 2,900,000; leucocytes, 6,700.

The autopsy was made October 1, 1898.

The body is poorly formed, and it is more of the masculine than feminine type. The feet and ankles are œdematous. The thorax is bell-shaped. The abdomen is slightly distended. Emaciation is marked. The pupils are equally dilated. The skin, which is apparently very thin, is of a peculiar whitish-blue color. The mucous membranes are anæmic. Rigor mortis is absent.

Section.—The amount of panniculus adiposus is small, and it is of a grayish-yellow color. The marrow of ribs is light in color, but presents no particular gross abnormality. The lymph nodes along the course of the internal mammary arteries are enlarged somewhat. There are dense old adhesions of both pleural cavities. The pericardium shows thickened patches, especially over the right auricle and ventricle. The heart is enlarged. The left ventricle contains a small amount of post-mortem clot. The right auricle and ventricle are distended with a cast of ante-mortem clot. Both of the right chambers show evidences of considerable long-standing dilatation. The heart muscle is fairly firm, but it is somewhat elastic and of a light-brown color. The aortic segments are slightly thickened; otherwise the valves of the heart are in a very normal condition, save that the orifices are in general distended. The coronary arteries show a moderate thickening of the intima. Otherwise the examination of the heart is negative. Weight of heart, thirteen ounces.

The lungs are enormously congested posteriorly, while the anterior portions are emphysematous. The connective tissue is greatly increased throughout the entire lung structure, especially in the lower lobes. The right middle lobe shows complete atelectasis, apparently entirely due to the enormous increase of its connective-tissue elements. There is a calcareous nodule, one centimetre in diameter, situated in the left apex; it is surrounded by a dense capsule of connective tissue, and is the only lesion which could be taken as of tuberculous origin in either lung. Certainly, then, the extensive fibroid changes are due to some other cause than a chronic or residual pulmonary tuberculosis.

The mucous membranes of the trachea and bronchi are congested, and the lumen of the tubes contains a considerable quantity of muco-purulent secretion. The thyroid gland is small, and its tissues show nothing abnormal. There are no abnormalities in the configuration or structure of the tongue, epiglottis, or larynx.

The lymph glands of the cervical chains, especially those located just at the root of the lungs, are greatly enlarged, sufficiently so to interfere to some slight degree with the normal lumen of the trachea and the larger bronchi; the peribronchial lymph nodes following into the substance of the lungs are also more or less enlarged. On section these enlarged nodes are found to be generally of a reddish-gray color, though some of the larger ones are more of a purplish hue, being moderately congested; still others show a quite extensive anthracotic pigmentation. The tissue of the nodes shows a very considerable interstitial increase, so that the cut surface of the gland is firm, and the substance is scraped off with difficulty. The nodes contain no necrotic or tuberculous areas, and the enlargement is plainly not of an acute inflammatory nature.

The capillaries of the peritoneum are congested, but the surface of the membrane is glossy and there are no evidences of acute inflammatory changes. The omentum is thickened and retracted. The mesenteric lymph nodes are enlarged, some to a considerable degree. Their structure presents the same characteristics as those already noted in the peritracheal nodes.

The liver is enlarged. It weighs six pounds six ounces. The capsule is thickened and opalescent; it has the appearance of being under tension, and when it is incised the liver tissue rolls out from the line of section. The liver tissue itself is firm and solid. The lobules are plainly marked, being of a yellowish-gray color, while the interlobular substance is congested and deep purple in its color. The paths of connective-tissue stroma are apparently considerably thickened.

The gall bladder contains about two hundred cubic centimetres of slimy, burnt-umber-colored bile. The duct is patent.

The spleen is greatly enlarged. It measures thirty centimetres in length, twenty centimetres in breadth, and has an average thickness of eight centimetres. The capsule is thickened and is under considerable tension. The tissue is very firm and is dark brown in color. The Malphigian tufts are not evident. The blood-vessels are very much congested, but the cut surface does not drip blood or serum. The splenic tissue is not easily removed on scraping the cut surface. Apparently the increase in size is mostly, at least, dependent on the great hyperplasia of the connective-tissue elements of the organ. The weight is four pounds ten ounces.

The pancreas is small and its tissue presents no evident pathological lesion, save that the lymph nodes along the course of the main artery are enlarged.

The adrenal bodies are small. They are deeply pigmented and the medulla is soft.

The kidneys are somewhat enlarged. The capsules are generally adherent. The cortex is thin and irregular. The medullary portions show a quite marked congestion, and the general color of the tissue is a purplish-gray, but in the cortical portions numerous

yellowish blotches are seen. The consistence is firm. The main branches of the renal arteries show a quite marked degree of arterio-sclerosis, and the smaller vessels show a marked proliferation of the surrounding connective tissue. United weight of the kidneys, ten ounces.

The ureters are natural.

The bladder is contracted, but contains a few cubic centimetres of purulent turbid urine. The cystic mucous membrane is greatly congested, and shows in places a loss of substance.

The stomach is dilated. It contains a small amount of fluid. The mucous membrane is greatly congested and in places atrophic.

The small intestine contains a soft fecal material. Its mucous membrane is generally congested, and the solitary follicles and Peyer's patches are enlarged, but not inflamed.

The caput coli shows no abnormality. The vermiform appendix is about of the usual size; it has a complete mesentery and presents no lesion. The large intestine is collapsed, and contains but a small amount of soft, normal fecal matter.

The ovaries are small and atrophic. Their gross structure shows no variation from the usual; recent ruptured follicles are not to be seen. The tubes and the pampiniform plexuses are normal. The uterus is small, measuring but six centimetres from fundus to cervix. The cervix presents the scars of an old stellate laceration. The arbor vitæ of the cervical canal is indistinct. The mucous membrane of the uterine cavity is anæmic and atrophic. The vagina shows nothing aside from ordinary atrophic changes.

The intima of the large arterial trunks of the abdominal and pelvic cavities shows a quite extensive arterio-sclerosis.

The retroperitoneal lymph glands are enlarged, and show the same changes already noted. The nodes situated about the saphenous opening are also enlarged to a considerable degree, but below this point the lymphatic enlargement appears to be very slight.

Anatomical Diagnosis.—Interstitial pneumonitis; hypertrophic nephritis; hypertrophic hepatitis; chronic lymphangitis and acute cardiac dilatation, the last named being probably the direct cause of death. The possible diagnosis of Hodgkin's disease was made, but was not substantiated until the microscopic examination had been made.

Microscopic Examination.—Lymph nodes: Sections of the enlarged lymph nodes show the enlargement to be due to a vast increase of the cellular elements of the tissue. The arrangement into cortex and medulla, seen in normal lymph glands, is obliterated, and compact masses of lymph cells are found filling the entire section. Mingled with the small mononuclear cells are found a good many cells, spherical in shape, about four or five times the diameter of lymphocytes, and containing a small round nucleus. The protoplasm of these cells is frequently loaded with coarse brown pigment granules. Vessels are very numerous in the sections, and they are, as a rule, packed with blood cells. In some, but not all, of the sections extravasations of red blood cells are found. All the sections show a very marked increase in the connective-tissue elements of the nodes.

Spleen: The sections of the spleen show the spaces normally found between the Malphigian tufts to be so infiltrated with lymph cells as to render the detection of the tufts almost impossible. The sections also show a considerable congestion of the blood-vessels and spaces. There are a great many young connective-tissue fibres seen everywhere throughout the sections.

Lungs: The sections show an enormous increase in the connective tissue, which has resulted in the complete obliteration of the pulmonic structure in large areas. In some places air vesicles are still to be seen, but with greatly thickened walls and filled by an exudate of cells, the cytoplasm of some of which is filled with pigment substance. Areas of lymph-cell infiltration are quite numerous, and are found in every part of the section. The numerous large blood-vessels which are included in the section are for the greater part filled with blood cells, among which it is seen that the white blood cells are in large proportion, and that of these the small mononuclears make up over fifty per cent.

Heart: The connective tissue of the heart is increased. The muscle cells are atrophied and their nuclei are irregular in shape and show occasional mitotic figures. The striation is quite evident in most of the cells, but the protoplasm in many contains a large amount of coarse brown pigment substance, which is found for the greater part in the immediate region of the nucleus. There are a few small areas of lymphatic infiltration, mostly located in close proximity to the blood-vessels. The vessels included in the heart sections show the same preponderance of the lymphocytes.

Liver: The liver shows an increase in its connective-tissue elements, though not of great degree, excepting in the immediate region of the interlobular structures, where the proliferation is much more marked. The liver cells are in general atrophied, and the cytoplasm of nearly all shows a parenchymatous and fatty degeneration. The nuclei of most of the cells are intact. Scattered throughout the sections, sometimes in the neighborhood of vessels and sometimes not, are found small groups or patches of lymph cells. These nodes are not surrounded by any evidences of acute inflammation, though the connective tissue in such areas is usually more increased than elsewhere, and is frequently seen to have a somewhat capsular arrangement. The blood-vessels found in these sections show a great proportionate increase of the leucocytes, with the lymphocytes in by far the greatest preponderance.

Pancreas: The stroma of the pancreas is moderately increased, and a few patches of lymphoid infiltration are found in it; otherwise the structure appears to be normal.

Kidney: The kidney sections show an extensive parenchymatous degeneration of the cells of the convoluted tubules. In many places this is combined with a fatty degeneration of considerable degree, and the cells of a good many of the tubules are almost completely destroyed, the lumen of such tubules being filled with cell débris. There are a few small patches of lymphoid infiltration in the neighborhood of the columns of Bertini, but they are neither numerous nor particularly characteristic. The perivascular connective tissue shows a moderate hyperplasia. The blood-vessels here show the same picture as those already described in the other viscera.

The extent of the post-mortem investigation was somewhat restricted by the demands of relatives, and as the autopsy was not obtained until twenty-four hours after death, when post-mortem infection might have become extensive, no bacteriological examination was made; hence the case is of no importance, in so far as tending to prove or disprove the very probable infective theory of the causation of Hodgkin's disease.

The case represents a fairly typical one of the disease, though the involvement of the viscera by the lymphatic infiltration is of rather less degree than I have seen before in cases presenting so marked an anæmia, and so extreme symptomatic manifestations of the disease as did this case.

The symptoms present just before death, and the mode of death, together with the general pathological

findings, seem to be those commonly present in the condition.

The chief point of interest presented by this case is the fact that the diagnosis of Hodgkin's disease was made on May 12th, when the glandular enlargement was already quite pronounced, on the sole differential point between Hodgkin's disease and leukæmia, that the number of leucocytes present in the blood at this time was not above the normal, and that the relative proportions of the leucocytes one to another was practically normal. Yet in the arteries examined after death it was found that a considerable lymphatic leucocytosis was present, which must have developed between the date of the last blood examination and the time of death. It is to be very much regretted that no blood examination was made when the patient first entered our wards at Bellevue, but circumstances were such at the time as to preclude this, and as death took place before it was expected this important link in the history was lost; nevertheless the pictures presented in the sectioned blood-vessels seem to render the presence of a small, mononuclear leucocytosis beyond question.

Cases of Hodgkin's disease terminating with leucocytosis are not so very uncommon; instances are reported by Troje, Cohnheim, and many others, who then conclude that since leucocytosis is sometimes or even often found as a symptom of Hodgkin's disease, it is hardly logical to consider Hodgkin's and lymphatic leucocytosis as distinct conditions.

The general symptomatic and pathological manifestations of the two diseases are the same, and an absolute differentiation on the single and variable symptoms of leucocytosis which may be present or absent in either, or present at one time and absent at another, is far from logical.

Lympho-sarcoma is now quite commonly thought to be but a more active and virulent form of the same general disease of which we consider Hodgkin's to be a type; indeed, it seems very proper that Hodgkin's disease, lympho-sarcoma, and lymphatic leukæmia should all be classed as one disease, differing one from another only in the prominence given to some symptoms or set of symptoms. Accepting the unity of these processes, as many do, it would seem well to apply to the general conditions the name—first, I think, used by Trousseau—of "adenie."

THE ETIOLOGY OF GENERAL PARESIS.[1]

By WILLIAM STEINACH, M.D.,
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The name general paresis, or paralytic dementia, is given to a disease of the brain characterized by progressive dementia, with periods of exaltation or depression coupled with a gradually progressing weakness and a muscular inco-ordination.

The disease has often been regarded as of comparatively recent origin. However, indistinct descriptions of the disease appear in the writings of Willis as far back as 1672, and subsequent authors, as Haslem in the beginning of the present century, as well as Pinel, Esquirol, and Georget, described the disease with more or less distinctness. To Bayle, who in 1822 clearly described the condition, however, belongs the honor of having discovered the disease, if such a term may be applied to a recognition of a condition as a clinical entity which previously had been shrouded in obscurity. Parachappe in 1838 went so far as to regard the condition as a distinct form of insanity. Previous observers, while recognizing the clinical features of the disease, regarded the motor symptoms and dementia as complications arising in the course of any of the types of insanity; hence the name general paralysis of the insane, which it bears even to this day.

Forty years ago a case of general paresis was regarded as more or less of a rarity, while to-day it is one of the commoner diseases appearing in a hospital for the insane. The frequency of the disease varies considerably, according as statistics are taken from the cities or from the rural districts. It is estimated that from five to twenty per cent. of all admissions to hospitals for the insane are of paretics. Thus among 39,097 cases of insanity admitted to all of the State hospitals in New York, for the period from October 1, 1888, to September 30, 1896, there were 2,469 cases of general paresis, or about six per cent. of all admissions. This is, however, very much smaller than the actual percentage of paretics, because during the above period the county houses were cleared of insane; their population was mostly made up of terminal dements which had accumulated there for a number of years. Thus during the year ending September 30, 1896, there were admitted to all State hospitals of New York 5,563 patients, of whom 399 suffered from general paresis, or about seven per cent. of the cases. During the previous period of eight years there were admitted to the Manhattan State Hospital 12,596 patients, of whom 1,229 were paretics, or about nine per cent. In our own hospital at Willard during about the same period there were admitted 3,175 patients, of whom 87 were paretics, or only about two per cent., thus showing an overwhelming preponderance of cases in the city asylums as against those drawing their population largely from the rural districts.

That the disease is increasing as years go on is so self-evident that statistics are unnecessary. Where one paretic was admitted a number of years ago, a goodly proportion are now paretics. In the Charité at Berlin in 1891–92, Kraepelin reports that no less than 45.6 per cent. of all the men patients were paretics.

The sexes are very unequally liable to the disease, and it appears among men anywhere from three to five times as often as in women. During the period from October 1, 1890, to October 1, 1898, there were admitted to the Willard State Hospital 3,580 insane patients, of whom 1,753 were women and 1,827 were men. In this group there were 114 cases of general paresis, or 3.2 per cent. of all the cases. Of these there were 95 men, or 5.2 per cent., and 19 women, or 1.08 per cent., showing that in this neighborhood the disease appears to be about five times as frequent among men as among women.

The pathology underlying the disease, as will be brought out at length by a succeeding paper this evening, is a degeneration of the cerebral cortical cells, together with a new growth of connective tissue in the cerebral cortex and meninges, as well as more or less marked changes in the arterial walls. Bearing these facts in mind, we can sum up the causes of general paresis in any conditions which cause continued hyperæmia of the cortex, together with excessive and prolonged fatigue of the cortical cells. This condition of hyperæmia and exhaustion of the cerebral-cortex cells, when kept up for a long while, is very apt to give rise to the disease. In fact, all the causes which are credited to paresis have the above features in common. Of the 114 cases above enumerated, admitted to the Willard State Hospital, intemperance was assigned as a cause 29 times; syphilis, 14; insolation, 4; overwork, 3; worry, 3; trouble, 5; apoplexy, 2; and traumatism, 2. A variety of other causes were given in one or two cases, but were always conditions which cause great exhaustion of the system, as typhoid fever, imprisonment, gunshot wounds, etc. Regarding the occupations of those

[1] Read before the Willard Medical Society, Wednesday evening, October 12, 1898.

affected with general paresis we find that it generally affects those in the higher walks of life; all those whose occupation is such as to cause great worry or mental strain. Thus we find that those affected with the disease are mostly clerks, railroad engineers, merchants, brokers, lawyers, physicians, and others in the higher and better classes of society. It does, however, occur in the lower walks of life, but with these it is almost invariably associated with alcoholic or sexual excesses. We find that a goodly number of our patients affected with general paresis are locomotive engineers, and it is quite natural, as these are subject to great strain for long periods, without proper recuperation of the nerve cells.

Among 89 men affected with the disease, admitted to this hospital, 64 were married, 17 single, 6 widowed, and 2 divorced, thus showing that the disease is about five times as frequent among married men as among single ones. This is not to be wondered at, for there are about twice as many married men in the world between the ages of thirty and fifty, when paresis mostly occurs. And then, too, the conditions and stress of life fall more heavily upon married men than upon single ones. All of our women were married. In some places the statistics are different regarding the civil condition, and Kraepelin says that single persons are more often affected. Mickle, however, says that there is an overwhelming majority of married general paretics, and in 54,642 admissions 3.6 per cent. of the single and 12.1 per cent. of the married insane population were affected with general paresis.

Most cases of general paresis occur between the ages of thirty and fifty-five. It occasionally occurs in earlier life, and then especially around the period of puberty, and is apt to be in cases with strong hereditary taint, whereas in ordinary cases heredity plays but a very subordinate part. It has been observed quite young in life. Dr. Köhler, quoted by Mickle, says that he saw it in a girl, six years of age; Krafft-Ebing's and Régis' youngest subjects were twelve years of age. Kraepelin has occasionally seen it between the ages of nine and eleven, and Clouston's youngest subject was sixteen. Mickle's youngest was twenty-one years of age. Among women it occurs later in life and is apt to be of longer duration.

Of the relation of syphilis to general paresis the views of different writers are very discordant, some saying that seventy-seven per cent. of all paretics have syphilis, while others maintain that only eleven per cent. have it. In our own cases in the country, where syphilis is comparatively infrequent, we have it given as a cause in fourteen out of one hundred and fourteen cases, or in about thirteen per cent. Kraepelin found it in his experience in about thirty-four per cent. of the cases. Rieger maintains that a person infected with syphilis is sixteen or seventeen times more liable to the disease than are ordinary individuals. In this connection it may be stated that the majority of French alienists believe that syphilis is very infrequently the cause of general paresis. Régis, however, takes the side of the minority in France, and says that in his experience it occurred in from sixty to ninety per cent. of the cases.

Kraepelin regards general paresis as a disease of infective metabolism and the expression of a species of intoxication, and classifies it with disorders of metabolism. He says: "We have to do with a poison, which, from its extensive action, must circulate in the blood." From faulty metabolism and improper methods of life by-products are produced, which are poisonous and affect equally the ganglion cells with the muscularis of the arterial wall, which still further augments the mischief by causing irregular blood supply to the brain.

The vessels are very frequently found atheromatous, and also the kidneys, liver, and heart appear diseased in general paresis. It is after all but another expression of the same gouty or connective-tissue diathesis which appears in the brain and gives rise to cirrhosis of the liver, or kidney, or fibrous degeneration of the heart. All are due to the same kind of causes, and general paresis is no exception; and it is, indeed, found in the same class of cases. Looked at from this view, which appears very logical, it is simply a cirrhosis of the cerebral cortex.

With reference to its toxic nature, some little experimentation has been done. Abundo, an Italian alienist, in 1892 injected the blood of paretics into rabbits and found it to poison them. Kraepelin regards the disease as being of the same nature as myxœdema and diabetes, and likens the convulsions of paretics to the uræmic convulsions in kidney disease. Everything points to a strong similarity between general paresis and the intoxication brought about by the various poisons. While this may be a new idea, it certainly appears quite logical, and whether it is sufficiently founded on fact time alone can tell.

Progress of Medical Science.

A Case of Primary Purulent Inflammation of Both Suprarenals.—The patient, twenty-five years of age, married, was admitted to the hospital March 3d. She had had small-pox, typhus, and scarlatina in childhood. Her present illness began thirteen weeks previously with an attack of severe chills, reappearing at intervals for several days, and severe pain at the lower half of the right chest. The pain soon became constant, and extended to the right half of the posterior and lateral surface of the chest and to the upper extremity. There were also vomiting and loss of appetite. Present condition: A middle-sized, well-nourished woman, pregnant seven months. The sclerotics are slightly icteric. The skin also shows a yellowish discoloration. The pulse is small and accelerated. The respiration is accelerated and superficial. The skin of the right half of the chest is œdematous and so painful that the patient cannot lie on that side. The diagnosis was made of right-sided purulent inflammation of the pericellular tissue of the kidney. Operation showed the presence of pus in the region of the upper part of the right kidney, between the adipose and fibrous capsules. The patient aborted just after the operation and died within an hour. The post-mortem showed changes only in the suprarenals. Of these only the capsules remained. They were filled with very foul-smelling yellowish-green pus. Small portions of the suprarenals in the form of black masses were distributed throughout the pus. The kidneys were normal, with the exception of the above-stated accumulation of pus between the capsules. The writer considers the purulent degeneration of the suprarenals, primary in origin, a condition very rarely met with.—Janowski, M.D., *Gazeta Lekarska*, 14.

The Modern Cystoscope; Its Use in Bladder, Urethral and Kidney Lesions.—Dr. B. O. Coates (*Medical Times*, November), in an article on the above subject, makes the following statements: That the diagnostic range of the modern cystoscope is not confined to diseases of the bladder, but extends in many cases to those of the kidney with considerable exactness, is an established fact. Not only are we able with its help often to localize the seat of the trouble—"negative vesical evidence giving a positive diagnosis of renal disease"—but also to distinguish whether there be two "working kidneys," or whether

one or both be affected. It may be said that the cystoscope fails under certain conditions. To some extent this is true, but by keeping in mind three essential points necessary for its employment we may overcome difficulties to a great extent which would otherwise appear to obstruct its use. (1) It can rarely be passed without undue violence in patients with irregularly enlarged prostates and when the prostatic canal is very devious, as blood becomes smeared on the windows and mixed with the urine in the bladder. An ordinary enlarged prostate offers but little resistance. (2) In stricture of the urethra. This should be dilated or cut. If the meatus is too small to admit of a No. 22 French gauge sound, incise under cocaine with a blunt-pointed bistoury. (3) If blood or pus is sufficient in quantity to render the urine non-transparent, this may be removed by washing out the bladder with distilled water, or, better, a boracic solution, and refilling with distilled water. (4) In contracted bladders, or in those in which the capacity has been diminished by pressure from without. (5) With spasmodic contraction of the bladder, more especially in tuberculosis and other ulcerations. A two-per-cent. cocaine solution usually overcomes this. (6) In certain deformities, such as ankylosed hip, a rickety pelvis, or a kyphotic spine. A little adjustment of the head is needed in these cases to obtain a good view.

Angeio-Neurotic Œdema of the Larynx.—Dr. Samuel G. Dabney (*Medical Times*, November) reports the following case: The patient, a lady, aged forty-two years, was seen in consultation. She had been having some cough, and for several days had been coughing up blood, and this occurred just at the time of her menstrual period. She had lost her voice also. There was no pain in the larynx or elsewhere, but a little difficulty in breathing from obstruction. An examination showed that there was considerable swelling of the larynx above the vocal cords, in what are called the false vocal cords; also considerable redness there. From the appearance of the mucous membrane of the larynx it seemed that vicarious menstruation had occurred from this structure. The case is also interesting from another standpoint. She gave the history of repeated attacks, with great shortness of breath and impairment of voice, coming on quickly, accompanied always by great nervous excitement. It would last several hours, and was usually attended by some hoarseness. In my judgment this is a rather rare trouble, angeio-neurotic œdema of the larynx, and at the time I saw the case it was attended by vicarious menstruation. A diagnosis of this affection is said to depend on the presence of lesions in the skin, attended with an irritable nervous system and often gastric disturbance. In this case, however, I believe I am warranted in the diagnosis from the suddenly occurring laryngeal œdema, attended with symptoms of nervous irritation. It is important to state that the kidneys and the heart were carefully examined with a negative result. All the symptoms subsided in a few days. As to the pathology of angeio-neurotic œdema, it is thought to be due to a disturbance of the vasomotor nerve centre, possibly due to peripheral irritation, more frequently occurring from the stomach than elsewhere. Such cases are apt to be attended by some systemic disturbances.

Clinical Chips.—In mumps during pregnancy, pyæmia or polyneuritis may supervene. . .In intubation the removal and reintroduction of the tube will sometimes save life which would have been lost by allowing the tube to remain or by failing to replace it. . . . A bridle has been invented for the control of mouth-breathing. . . .Infectious endocarditis may be due to the gonococcus without any other microbic involvement. . . .Hartmann and Reymond have collected and published fourteen cases of torsion of the Fallopian tube. . . .Tuberculosis of the skin, keloid growths, and warts have been successfully treated by compression with a rubber band. . . .Klein treats vomiting of pregnancy by an exclusive liquid diet, with no alcohol, tea, or coffee, and the patient is put to bed and kept there, in isolation, until at least three days after the vomiting has ceased. . . .Retinal hyperæsthesia may result from irritation as well as from inflammation of the uterus and the ovaries. . . .Rüdel reports a case of athetosis cured by the expulsion of a tapeworm.—*The Clinique*, October.

Formalhyde Douche.—Dr. Wallace A. Briggs, of Sacramento (*American Gynæcological and Obstetrical Journal*), advises vaginal douches (1:500) in puerperal sepsis without uterine infection. When the uterus is infected he uses intra-uterine douches of the same strength every twelve hours, followed by hydrogen peroxide applied with a piston syringe. He then fills the uterus with antiseptic glycerin, *i.e.*, formaldehyde 1, alcohol 100, glycerin 400. He then leaves the patient in the exaggerated Sims position for at least an hour, so that the glycerin will remain in the uterus. After the fourth injection he substitutes a two-per-cent. lysol solution.

Medical Hemorrhage.—Dr. Frederick J. Smith includes under this title all intracranial hemorrhages not due to violence; those from the mouth or nose, from spongy gums or pharyngeal varicose veins; aneurism of the aorta; from the lungs in bronchitis, pneumonia, phthisis, emphysema, malignant disease, etc.; from the stomach or duodenum; from the anus either as blood or melæna, or in typhoid fever and other forms of ulceration, *e.g.*, tuberculous or dysenteric; gastric hemorrhage if not vomited; hemorrhage from piles, internal and external; from the urethra, bladder, or kidney; from the vagina, and subcutaneous hemorrhage, as in purpura and scurvy. A mixed class is due to serious disease—leucocythæmia, acute yellow atrophy of liver, some other forms of blood poisoning, and hæmophilia. Ergot is condemned in all arterial bleeding. The following propositions are made: (1) Most cases of medical hemorrhage cease spontaneously and are essentially not dangerous to life from loss of blood. (2) Active treatment by ice-bags and ergot frequently defeats its own purpose; if the bleeding ceases it does so in spite of treatment. (3) Where experience of morbid anatomy or the profuseness of the blood loss makes an arterial source certain ergot is distinctly contraindicated. (4) Complete rest, opium, and iodide of potassium are our most powerful and most trustworthy agents for the emergency, except in certain special cases, *e.g.*, from the stomach, where additional treatment by astringents should be applied. —*Lancet.*

Twin Bearing and Prolificacy.—Dr. J. W. Ballantyne recently read before the Edinburgh Obstetrical Society a paper on "The Causation of Twins as Illustrated by some Clinical Histories." After giving the history of several cases he mentioned that of a woman who was one of a family of seventeen, no twins; one of her sisters had had triplets and another twins; she herself had had twenty-two children in eighteen confinements, viz., four times twins and fourteen single births. In all the cases referred to there was good evidence to show that the twins were of the binovular or dichorionic kind. He mentioned the association of twin-bearing and prolificacy, and deduced that the daughters of a woman who has borne twins are usually highly prolific, and conversely the mothers of twins are usually the daughters of specially prolific women. He mentioned the theory that the ovaries of the twin-

bearer resemble those of the fœtus in the great number of Graafian follicles they contain. Plural pregnancies result from the simultaneous rupture of several ovisacs, and this is a consequence of the existence of a relatively or absolutely large number of ova in the ovaries. Dr. Haig Ferguson mentioned at the same meeting the case of a woman who had seven children in three years, twice twins and once triplets. Dr. James Ritchie referred to a mother who had borne thirty-two children. The fact had been mentioned in an application for life insurance and he had verified the statement.—*Journal of the American Medical Association.*

A Further Account of the Treatment of Aneurism by the Conjoint Use of Galvanism through Introduced Coiled Wire.—In an original article under the above title, Dr. D. D. Stewart (*Philadelphia Medical Journal*, November 12) briefly outlines the newer method, which he regards as a most decided advance over the older plans of treatment of aneurism by the mere introduction of filiform material. It consists in the introduction into the sac, under the strictest antiseptic precautions, of fine coiled wire, previously so drawn that it may be readily passed through a thoroughly insulated needle of somewhat larger calibre than the wire, and which will, after introduction, assume snarled spiral coils. With a moderate amount of wire the entire calibre of the sac will be occupied, unless the cavity be already filled with coagula or the sac be of unusual size. The wire must not be too great either in amount or in calibre, nor too bulky nor too highly drawn, in order that the results desired be not interfered with; nor should the wire be of such brittle material as steel, nor of hard drawn iron, lest fracture occur in the process of contracture of the sac, with danger of rupture. For a globular sac of approximately three inches in diameter the writer regards from three to five feet as sufficient; for a sac of from four to five inches eight to ten feet are required. The anode or positive pole should invariably be the active electrode. This is connected with the wire, and the negative rheophore, a large clay plate or an absorbent cotton pad of equal dimensions, made after the method of Massey, is placed upon the abdomen or the back. The current is slowly brought into circuit, and its strength is noted by an accurate milliampere meter. The increase is gradual for a few moments until the maximum strength supposed to be required is reached. It is maintained at this until the approach of the end of the session and then gradually diminished to zero, after which the wire is separated from the battery, the needle carefully withdrawn by rotation and counter-pressure, and the released external portion of the wire gently pulled upon and cut close to the skin, the cut end being then pushed beneath the surface. The strength of the current must be high—from forty to eighty milliamperes—and the session long—from three-quarters of an hour to one and a half hours—resulting in consolidation by virtue of clot formation. The consolidation is rapid and is generally manifest before the end of the electrical session, through changes apparent to the eye and hand in the pulsation and the degree of consistence of the sac-wall. These changes become more marked in the course of a few days, until after a time, in the most favorable cases, a hard nodule, with a communicated pulsation, replaces the previous expansible tumor. The writer also emphasizes the fact that through portions of the coils of wire, which must in small sections lie in direct contact with the sac-wall, an electrolytic effect is, under the current's influence, produced on the endothelial lining of the sac, such as Macewen has demonstrated is highly favorable to the subsequent deposition of leucocytes derived from the vessel-wall and by segregation from the blood stream, resulting in the formation of organizable white thrombi, from which vascularized fibrous tissue readily springs. From these wall-thrombi, which in a fair number of cases, if not in all treated by this method, are likely to result, organization may rapidly extend to the red thrombi formed directly about the centrally disposed wire, and thus solidification and organization of the sac promptly occur.

Extra-Uterine Pregnancy; Extirpation by Abdominal Section of the Fœtus, which had been Dead Four Years.—An unmarried woman, aged thirty-four years, when admitted to the hospital, showed upon examination the presence of a tumor in the left side of the abdomen. The patient, either through ignorance or deceit, did not give any previous history. The tumor was considered fibromatous in origin and connected with the uterus. Laparotomy was performed, and extra-uterine pregnancy was discovered. The sac was made up of the uterine appendage and the broad ligament. The fœtus was forty-six centimetres long and weighed two and a half kilograms. It was found to be very dry. The patient, when cured and discharged, admitted that she knew she carried the fœtus in her abdomen. She had become pregnant five years previously. Pains had appeared at the proper time and lasted three days. After the discharge of a fleshy mass, with profuse hemorrhage, the pains as well as the fœtal movements disappeared. She had resumed and continued at her work until a fall resulted in severe pains and caused her to seek relief.—Dr. Bastian, *Rev. Méd. de la Suisse Romande*, August.

The Iodides in Chronic Parenchymatous and Creosote in Suppurative Nephritis.—Dr. Leonard Weber (*The Post-Graduate*, October), concludes as follows: After sufficient clinical observations of the good influence of small doses of the iodides in certain forms of chronic nephritis during the last eighteen years, and the value of creosote in the medical treatment of inoperable surgical kidney in the past six years, I believe I am justified in drawing the following conclusions: (1) The iodides given in relatively small doses, three or four times daily, and continued for many months and even years, have the power to retard, modify, and improve subacute and chronic inflammatory processes concerning the connective tissue of parenchymatous organs like the kidneys, the liver, the lungs, and particularly so the sclerotic disease of the arterial vessels. (2) It appears that this salutary effect is brought about by direct inhibition of the proliferation of the connective tissue, as well as by subsequent induction of disintegration and fatty metamorphosis of infiltrated corpuscular elements and the removal of the same. (3) It is reasonable to hold that the drug manifests and develops its activity through the lymph channels and spaces of the affected organs by direct action upon the irritating substances, by stimulating the vasomotor nerves and increasing the functional activity of the parts. (4) The favorable influence of the iodides can be clinically demonstrated, and is more decided in arterial sclerosis than in similar disease of parenchymatous organs, and will show itself frequently, whether the underlying cause is gout, alcoholism, or syphilis. In cases with a syphilitic history, however, it is well to give larger doses of the iodides for a while, *i.e.*, from ten to fifteen grains, t.i.d. (5) Creosote in doses from two to four to six grains, t.i.d., steadily administered, I can recommend as a safe and trustworthy remedy in suppurative disease of the urinary organs. Guaiacol-carbonate in similar doses will do as well, and may be used when creosote is not borne by the stomach. I have found them to reduce suppuration and fever considerably, improve nutrition, and help the patient greatly in cases which had passed the limits of surgical interference.

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THE NAVY MEDICAL DEPARTMENT AND THE LATE WAR.

THE work placed upon the shoulders of the naval medical department before and during the late war cannot, of course, be compared with the strain to which the army medical department at the same period was subjected, and under which to a certain extent it broke down. But, although the naval authorities had not the difficulties to contend with which it was the somewhat unlucky fate of their brothers in arms to meet, yet their way cannot be said to have been all plain sailing. The report of the surgeon-general of the navy, which has just been given to the public, discloses in the clearest manner one conspicuous fact—that the preparations made to meet any possible contingency were distinguished not only by the promptness with which they were carried out, but also by their thoroughness. Nothing was left to chance. Almost as soon as the mournful news of the blowing up of the *Maine* was flashed across from Havana, and when it had become apparent to every reasoning person that war would certainly follow that deplorable incident, those at the head of naval affairs made it their duty to see that the commencement of hostilities should find them ready at every point. In the words of the report itself: "The naval hospitals were equipped to their full capacity; plans were prepared for building pavilion wards on the hospital grounds, to give accommodation to any number of sick and wounded that the bureau might be called upon to care for. The director of the naval laboratory prepared to furnish medical and surgical supplies in any quantity, at any place, and immediately. No additional expense was incurred until war seemed imminent; then the vessels that were likely to be engaged were supplied with a full outfit of supplies for war. In anticipation of a large number of additional vessels being taken for service, medical and surgical outfits of a kind suitable for the various classes of vessels were bought, assembled, and boxed, ready to be shipped anywhere as soon as called for. There has not been an instance during the war of any vessel having had to wait for her medical stores."

But the crowning triumph of the war just over—that is, so far as the medical department is concerned—has been the successful solution of the long-considered problem as to the best means of transporting the sick and wounded. Many points relating to naval warfare, which it was thought would have been elucidated in the late sea fights, still remain obscure; but at least the great value and efficiency of the ambulance ship have been amply demonstrated. The inception and consummation of the idea and the work done by the ships have already been so fully described in the pages of the MEDICAL RECORD, within the past few months, that further lengthy comments on the subject would be superfluous. Suffice it to say that our navy has in this respect shown the way to the rest of the world. Foreign nations have already followed the lead given them by America, and it may be taken for granted that in future the hospital ship will be regarded as an absolutely necessary complement to a naval squadron, in time of war at all events. The duties pertaining to the regular medical officers of the navy, though in the nature of things not so arduous as might have been expected, were fulfilled in a most satisfactory manner, and the medical officers of the naval reserves who were transferred to the service with the reserves from their States ably supplemented these efforts. The ten women who volunteered their services as nurses were assigned to duty at the naval hospitals at Brooklyn and at Norfolk, Va., and gave the fullest satisfaction. In short, there has been ground for little or no adverse criticism of the management of the naval medical department throughout the war. This happy state of affairs was doubtless partly owing to the fact that no excessive pressure was at any time placed on the department. This, however, should detract in no way from the merit of anticipatory performance. Its members did all that was required of them, and, judging from the manner in which their duties were discharged, there would seem to be no reason to doubt that they would have been equal to any emergency. The general health of the navy during the war was exceptionally good. Yellow fever broke out at Key West, and, owing to the unsatisfactory condition of that station, gave rise to some uneasiness on the part of the department. Thanks, however, to the prompt measures adopted by the medical officers in isolating the sick, in disinfecting their quarters, and in removing those who were well to a place beyond danger of infection, the disease was most successfully localized. History may be ransacked in vain to find a parallel in sea warfare to the Spanish-American conflict, both as regards its successful issue and the small loss of life.

A PARASITIC TRIUMVIRATE.

MANY institutions in the social sphere are characterized by their great complexity, and in the realm of disease a like intricate nexus of causes and events is often appreciable. In many of the so-called organic diseases this complicated interwoven mass of causes defies ultimate analysis, and it is with a feeling of relief that the scientific mind contemplates the germ theory as a definite factor in the production of a number of ills. In these an appreciable entity is known and grappled with. But even this light has commenced to

grow less distinct and has lost its former clear-cut outlines, since it is becoming manifest that other classes of organisms than bacteria might be causative of disease, and, on the plant side, bacteria, yeasts, and moulds are seen seeking to live on the lord of the universe. The lowly animal, man's ancient, very ancient progenitor, the amœba, in several forms, takes refuge in his descendants' intestinal tract; and a score of others are recognized in the war with man's life and happiness. And now we are brought face to face with the fact that the pestiferous fly and the gnat and the buzzing mosquito, in addition to their other undesirable qualities in general, may be the means of the transmission of typhoid fever or of malaria. Perhaps the latest, up-to-date, *fin-de-siècle* movement on the part of the enemies of human kind in their own struggle for existence, is the coalition of the rat and the flea and the microbe in the propagation of the bubonic plague. That all of these enter into the matter is the conclusion drawn by Dr. P. L. Simond, *Annales de l'Institut Pasteur*, vol. xii., 1898, p. 625, "La Propagation de la Peste." Here the author has given an extended geographical study of the results of the spread of the plague, and a series of experimental researches, all of which point to the following general conclusions:

1. He shows that the plague was spread by two main agencies, the rat and man. For long distances man is the chief contributor to this transmission, while for short distances, from place to place in the near vicinity, the rat is the main agent, and from the practical point of view this animal is more to be feared.

2. The introduction of infected rats into any healthy district is generally followed after a brief delay by epidemic cases in man. The importation of an infected man into a healthy community is not followed by indigenous epidemic cases; indeed, it seems necessary for a certain time to elapse, long enough for rats to become infected, before the disease commences to appear in man in epidemic form.

3. The gravity of an epidemic among human kind is in proportion to the gravity of the epidemic among rats. Its progression in a village follows the paths chosen by the emigrating rats.

4. The influence of the seasons seems to be but little marked in the development of the plague. In India the epidemics have appeared at all seasons; otherwise, however, the epidemics have always been at their height in the warm season.

5. A second epidemic usually manifests itself in general within twelve months after the appearance of the first, from which it is separated by a period varying in length. The reason for this periodicity has not been determined; it probably is related to the life history of the rat, which, in the course of time, again "repeoples" a community.

6. Control experiments made upon the rat, the monkey, and other animals, whereby they were fed with infected food material, showed that it was not probable that these animals were infected by this channel; and experience would go to show that man is not infected by means of external communication nor through excoriations on the skin.

7. The chemical study of the plague teaches that in a certain number of human cases the point of entrance of the organism is marked by a local reaction, and is always situated in these cases in a region where the skin is delicate and sound. Metchnikoff's work on inflammation and the chemical facts of infection by other pathogenic organisms tend to support the view that, in the cases where the local reaction or the regional reaction (bubonic) are missing, their absence is due rather to a variation in the virulence of the organism than to a difference in the method of penetration.

8. The idea of transmission by means of a parasite, which would seem to be the conclusion drawn from clinical experience, is in accordance with the invasion of sick rats by fleas, which several hours after death abandon the cadavers to attack other animals and man. This is confirmed (1) by the presence of the specific microbe in the intestinal contents of the flea; (2) by other certain peculiarities of transmission from rat to man, and from man to man, in which latter case it is possible that other parasites, more particularly the bedbug, may intervene; (3) by the possibility of the transmission of the plague to a healthy rat by his cohabitation with an infected rat with fleas, when such cohabitation of healthy rat and flealess infected rat is uniformly innocuous.

9. The mechanism of the propagation of the plague includes the transport of the virus by the rat and by man, its transmission from rat to rat, from man to man, from man to rat, and from rat to man, by the parasites. Prophylactic measures should take into account all three of the agents—man, rat, and the flea.

THE HAND AS AN INDICATOR OF DISEASE.

The study of the physiognomy and of the hand is curiously interesting. It is now generally admitted that a person's character can be gauged with a very considerable degree of accuracy by a visual analysis of the features, and the same remark applies, with less force perhaps, to a study of the hand. The professors of palmistry indeed claim that they are able by a careful perusal of the lines of the hand not only to tell of the past actions of an individual, but even to peer into and raise the veil from the mysterious future and to predict with certainty as to the coming events in his or her life,—when death or misfortune may be expected to occur, and whether marriage or celibacy is to be the lot of the seeker after forbidden knowledge. However, it must be confessed that the prognostications of these would-be prophets should be regarded with the same scepticism as was accorded to the prophecies of the Delphine oracle in days far back by the less superstitious members of the community, and we think that any person who is sufficiently misguided to pay good money, in the hope of thus learning his fate, is deserving of no sympathy. But the study of the face and hand for indications of disease is manifestly a great aid to a correct diagnosis. The fact that in certain diseases the expression of the face and the appear-

ance of the hands are fairly reliable indices of the nature and progress of the disease, is too well known to require further emphasis. For instance, a skilled physician can in the majority of cases decide if a patient is a sufferer from Bright's disease by the expression of his countenance, and can also by the color, contour, and texture of the hand, by the shape and tint of the fingers and nails, diagnose more than one complaint. For very many years clubbing of the finger ends has been held to be one of the most important signs of consumption, and the condition also appears in several other diseases. Recently Dr. Edward Blake, of London, has written a work on the study of the hand for indications of local and general disease, in which many instructive and peculiar points in connection with the subject are well brought out. In the introduction to the book Dr. Blake makes mention of the fact that on those rare occasions when the aid of the European physician is sought for a female member of any Mohammedan family of distinction, the only part of the patient which the doctor is permitted to see is the hand, which is thrust for that purpose through a small opening in a curtain. The object of Dr. Blake's paper, then, is to answer to the best of his ability the question as to whether it is possible that a fairly respectable diagnosis might be based upon a sight of the hand alone. In the first place it is shown that the hand is often dry in cancer and in paralytic dementia. If the hand is dry and claw-like, the possibility of diabetes enters the mind; if hot, dry, and emaciated, the hectic of advanced tuberculosis is suggested. When one hand is persistently hot and the other cold, the case may be one of subclavian aneurism, but it is much more likely to be gout or else lead poisoning. If the palm is not only hot but also clammy, the causes may be excitement, recent exertion, or hyperidrosis. A cold and dry hand may mean starvation, anæmia, or one of the innumerable forms of vasomotor ataxia. The hand is cold, harsh, and swollen in myxœdema. If cold, clammy, and tremulous, then hysteria, dyspepsia, certain depressing emotions of the mind, and the action of some nerve poisons, as alcohol, tea, and tobacco, present themselves to us. With regard to the nails the author points out that paludal fever causes in them a typical change of tint; that the nails are pale in hectic and in anasarca, gray in serious internal disease, yellow in jaundice, white in convalescence, chalky in some forms of paralysis, acutely livid in ague, and chronically purple in cyanosis. With the assertion that brittle nails accompany diabetes mellitus, Dr. Blake does not entirely agree, but says that as a matter of fact the subjects of glycosuria are prone to neuritis; and any form of peripheral neuritis, from gout to beri-beri, may be followed by fragility of the nails. Attention has already been drawn to the long-held belief that clubbing of the finger ends is an important sign of consumption. Patrick Manson has seen it as a sequel to the evacuation of hepatic abscess by way of the respiratory passages. It has been described as a result of congenital heart disease. It is seen after nerve injury, pneumonia, and spinal caries. And the paper written by Dr. Vivian Poore on "Nervous Affections of the Hand" is quoted by Dr. Blake as noticing the fact that clubbing is absent in patients whose legs are swollen with tortuous veins; nor is it always present in bronchiectasis with emphysema, where there is considerable venous stasis; to which the writer adds that clubbing forms no part of the phenomena of Raynaud's disease, and that all the cases of Marie's disease that have been recorded up to the present time have occurred in men. The question of eruptions and invasions of the skin is entered into at some length, and instructive and somewhat curious information is given with regard to the diagnostic value of a study of the form of the hand in many diseases. In fact, it would certainly appear to be more than likely that the study of the hand is deserving of closer attention than is usually bestowed on the subject by medical men in general practice.

News of the Week.

Harold Frederic on Doctors. — The late Harold Frederic, whose Christian-science slayers were recently discharged from custody, was perhaps led to his doom through dislike for the medical profession. He was known to entertain a very unflattering opinion of physicians, and in his last novel, "Gloria Mundi," gave vent to his contempt in the following passage: "He drifted into an attack upon doctors as a class. He denounced them, root and branch, as impostors and parasites who darkened and embittered human life by fostering all the mean cowardices of small-brained people in order that they might secure a dishonest livelihood by pretending to dispel the horrors their own low tricks had conjured up."

A Convalescent Hospital at Manila.—It has been decided to establish a convalescent hospital on Corregidor Island. Two companies of the Tenth Pennsylvania Regiment have been sent there to erect the hospital and to act as guard. Major Owen will have charge of the hospital, which will contain one hundred beds. There will be fifty nurses to attend to the patients. The chief surgeon contemplates the enlargement of the hospital as soon as possible. The sick report of the garrison at Manila during the first week in September was as follows: Typhoid fever, 114; malarial fever, 573; dysentery, 105; diarrhœa, 186; all other intestinal troubles, 38; gastric fever, 22; wounds and other injuries, 73; heat, 3; small-pox, 20; all other diseases, 836. There were nine deaths during the week.

Progress.—General Greene has recently caused several of the streets in Havana to be cleaned, and that his efforts have begun to be appreciated is shown by the following warning which has been placarded at the corners of these recently cleaned streets: "I, the Marquis Esteban, Mayor of Havana, do hereby make known that this street has been cleaned and disinfected at the expense of the United States of America. All persons who throw or deposit dirt or refuse of any kind here will be prosecuted to the full extent of the law."

Wholesale Poisoning.—Fifty-two persons were recently taken ill with symptoms of irritant poisoning at the Cleveland orphan asylum near Versailles, Ky. The sufferers included the matron, her daughter, a music teacher, and forty-nine of the orphans. They were affected shortly after supper, but the offending substance has not been discovered.

To Guard against Future Visitations of Yellow Fever.—A circular addressed to the physicians of the city has recently been issued by the New Orleans board of health, calling attention to the urgent need of educating the people to adopt measures to prevent a recurrence of the fever epidemic next year. Among other suggestions in the circular, the *New Orleans Medical and Surgical Journal* quotes the following: "It is a well-known fact that sunlight and oxygen destroy germs of disease. In the case of yellow fever, cold is a potent factor in such destruction. Let us then give Nature a chance, during the present winter, to destroy with her own inexpensive agents any possible remaining vestige of infection left over from the summer. Let our houses be thrown open on every cold and clear day as much as is practicable, more especially the bedrooms. Let the clothes and bedding, curtains and all woollen, linen, and cotton materials be frequently aired and sunned. And most particularly let the clothes worn during the past summer be frequently subjected to the disinfecting influences of cold, fresh air and sunlight. Trunks, chests, armoires, closets, and bureau drawers should be opened and emptied of their contents during cold and clear weather; and fresh, cold air should be permitted to circulate in the remotest corners of the house among articles which cannot be moved to the sunlight."

A Milk Epidemic of Typhoid Fever.—A limited epidemic of typhoid fever broke out recently in the northern part of the city. There were seventeen cases within a small area, and of these thirteen were traced to infected milk sold by a grocer in the neighborhood. It was not charged that the milk was diluted, but it was believed that the cans were washed in polluted water.

Shorter Hours for Drug Clerks.—The executive committee of the Druggists' League for Shorter Hours has decided to introduce in the next legislature its ten-hour bill for drug clerks in amended form. The bill passed at the last session was vetoed by the mayor. The new bill provides that no clerk engaged in the compounding of prescriptions in any drug store shall be required or permitted to work more than ten hours on any week day other than Saturday, more than twelve hours on Saturdays, and more than six hours on Sundays and holidays. There is also a section forbidding any clerk to sleep in a drug store or in any store-room or laboratory connected with it. He may, however, sleep in any other room adjoining the pharmacy, provided that such room is properly ventilated and complies in all other respects with the sanitary regulations of the board of health.

Winter Hospitals for the Army.—In his testimony before the War Investigating Commission on December 5th, Colonel Martin of the quartermaster-general's office explained what preparations were being made for the construction of permanent winter hospitals for the sick of the army. Large contracts have been made for lumber to be shipped to Cuba for use there by the medical department. This was in anticipation of the needs of the medical department and with a view to the construction of a large number of pavilions to be used for the sick. In this country the preparations were on a large scale. A one-thousand-bed hospital was to be erected at Fort Monroe, a one-thousand-bed hospital at Savannah, a five-hundred-bed hospital at San Francisco, and at other places pavilions were to be built to accommodate from one hundred to five hundred patients. At Fort Myer, near Washington, the riding hall had already been converted into a hospital, and other buildings were to be constructed for that purpose. The hospital capacity of the government, exclusive of the colonies, would, when completed, take care of between five thousand and six thousand soldiers.—*The Sun.*

Explosion on a Hospital Ship.—An explosion of the ice machine on board the hospital ship *Bay State*, lying at a wharf in Brooklyn, on December 6th, killed one man, seriously injured another, and twelve others were more or less overcome by the fumes of ammonia which spread to all parts of the ship.

The Alumni of the College of Physicians and Surgeons met at the annual dinner at Sherry's last week, over two hundred members of the association being present. Dr. John G. Curtis, president of the Alumni Association, presided. Mr. Seth Low, president of Columbia University, delivered an address in which he said that 1898 had been a notable year in the history of the college, and spoke of the twenty-two Columbia students who had enlisted during the war with Spain. One of the first men to fall on the American side during the conflict, he said, was Dr. John Blair Gibbs, an alumnus of the college, who was killed at Guantanamo. Another graduate of the school was Dr. Lindheim, who had brought fourteen carloads of fever-stricken soldiers from the South without losing a man, but, while saving them, sickened and died himself.

The Army Medical Supply Depot in New York will be moved next week to a new building at the southeast corner of Washington and Hubert streets. The depot, which is in charge of Lieut.-Col. J. Morris Brown, has heretofore been located in the Army Building. The new building, besides being suited to the storage needs of the depot, will afford ample office room.

Small-pox at Bedford, Pa.—According to a despatch to the New York *Times*, the citizens of Bedford, Pa., are up in arms against Dr. William B. Atkinson of the State board of health, who is said to have reported that there are over two hundred cases of small-pox there, and that victims of the disease are walking unrestrained about the streets. A town meeting was held, and a committee of citizens, health authorities, and councilmen drew up resolutions denouncing Dr.

Atkinson's statements as untrue. Dr. Atkinson is said to adhere to his declarations, and the board of health will accordingly take active measures in the matter without delay.

The Prince of Wales on His Feet Again.—A circular note published in the English medical journals announces that the Prince of Wales has now made a complete recovery from his accident last July, whereby he suffered a rupture of the insertion of the left quadriceps extensor muscle, which tore away with it at the same time the upper portion of the patella. The fragments of bone were separated by a considerable interval which gradually became reduced, and the gap is now completely filled with strong fibrous material which shows no sign of stretching. The knee readily bends to considerably more than a right angle, and the power of active extension at the joint is very good. The Prince can readily go up and down stairs, and can walk with a scarcely perceptible limp due to the slight interference with joint movement caused by the splint which he is still wearing.

A New Whooping-Cough Bacillus.—An Italian investigator, Dr. Vincenzi, at Sassari, claims to have discovered the specific pertussis microbe. He found it in the sputa of children suffering with whooping-cough, being present in some cases in very large quantity, while it was absent in other diseases. Dr. Vincenzi ascertained by a series of researches the peculiar qualities of the micro-organism, but he did not succeed in causing the same disease by inoculation in animals. It is, however, well known that whooping-cough never occurs in animals.

A World's Temperance Congress.—The Archbishop of Canterbury, as president of the British National Temperance League, has issued invitations to the national and international temperance organizations throughout the world for a "World's Temperance Congress" to be held in London during the year 1900.

A Benefactor of McGill Honored.—It is announced in Montreal that Queen Victoria will confer the honor of knighthood on Mr. W. C. McDonald on the occasion of the opening of the new chemistry and mining building of the McGill University on the 20th instant. This building and its equipments are Mr. McDonald's latest gifts to the university, and make the total of his donations amount to more than one and a half millions.

Reports on Red Cross Work.—A meeting of the National Red Cross relief committee was held last week to hear the reports of the work of the committee. Bishop Potter presided, and reports were made by ex-Major Schieran of the central Cuban relief committee; Dr. A. M. Lesser, E. C. Smith, and Horace Barnes, Red Cross agents at Chickamauga; Howard Townsend, who directed the relief work at Camp Wikoff, and Cleveland H. Dodge of the supply committee. Resolutions were adopted thanking Miss Barton for her part in the work.

Prize for an Essay on Epilepsy.—A prize of one hundred dollars is offered by the board of managers of Craig Colony for the best original essay bearing upon the pathology and treatment of epilepsy. The essay must be written in English, but competition is open to the world. The award will be made upon the recommendation of a committee composed of three members of the New York Neurological Society, at the annual meeting of the board of managers of Craig Colony on October 10, 1899. The successful essay becomes the property of the Craig Colony, for publication in its annual medical report. Papers submitted for the competition should be sent to Dr. Frederick Peterson, 4 West Fiftieth Street, New York City, on or before September 1, 1899.

Foot-and-Mouth Disease in Belgium.—According to reports from United States consuls in Belgium, a very extensive epidemic of foot-and-mouth disease prevails in that country at the present time. Horses are chiefly affected. One hundred and fifty-two stables in fifty-two communes are said to be affected, and the outbreak is considered so serious that the governor of the province has peremptorily prohibited the holding of the usual cattle markets in the affected districts. No permit will be issued by the department of agriculture for the importation of animals from Belgium while the epidemic lasts.

Communicability of Leprosy.—The British Colonial Office has requested the Royal College of Physicians to report to it on the communicability of leprosy, and the question has been referred to a committee consisting of members to confer with others not belonging to the college.

The Monument to Charcot, which has been erected in front of the Salpêtrière, was unveiled on Sunday, December 4th, at 10 A.M. M. Leygues, Minister of Public Instruction, presided at the ceremony.

The Eastern Medical Society of the City of New York.—At the annual meeting of the Eastern Medical Society, held Friday evening, December 9th, the following officers were elected for the ensuing year: *President*, Dr. William S. Gottheil; *First* and *Second Vice-Presidents*, Drs. A. E. Isaacs and E. K. Browd, respectively; *Secretary*, Dr. R. Abrahams; *Treasurer*, Dr. I. Barsky; *Chairman of Ways and Means Committee*, Dr. Louis Fischer; *Trustees*, Drs. Abram Brothers, Henry J. Garrigues, and M. Cisin.

Virchow's Political Triumph.—At the general election of deputies in Prussia on November 3d, Professor Virchow was returned by the third electoral district of Berlin, receiving 1,358 votes against 782 polled for his opponent. Virchow received nearly 200 more votes than at the election of 1893. In politics he is a liberal.

The Massachusetts Hospital Ship "Bay State" has been purchased by the United States government for the sum of $100,000. The vessel will retain the name of *Bay State* and will be used as a transport to carry soldiers and supplies to and from Cuba and Porto Rico.

A Large Sick Rate.—The official statistics compiled under the direction of the Commissioners of Pensions show that the total number of deaths on the

American side due to the war was 2,906 up to October 1st. As only 348 men were killed in battle or died from their wounds, the large death rate from sickness becomes apparent, giving a mortality from disease of 2,558.

River Pollution in Connecticut.—A correspondent of the *Evening Post* says that the city of New Britain will probably apply to the next legislature for power to build a sewer for a distance of about ten miles, emptying into the Connecticut River a short distance above the city of Middletown. The sewers of the latter city empty into the river, but its residents object strenuously to the New Britain plan, on the ground that it would contaminate the waters at a place dangerous to public health. A contest between the two cities over the question is expected at the next legislative session. The sewerage commission has been making an exhaustive study of the matter of discharging sewage into running waters, and will probably report against permitting sewers to empty into streams.

The Bucks County (Pa.) Medical Society celebrated its semi-centennial at Doylestown on November 2d. Reviews of the progress of medicine in its different departments during the past fifty years were presented by Drs. W. R. Cooper, Joseph Thomas, Frank B. Swartzlander, and G. M. Grim. The following officers were elected for the ensuing year: *President*, Dr. O. H. Fretz, of Quakertown; *Vice-Presidents*, Dr. R. C. Foulke, of New Hope; Dr. A. S. Wilson, of Bristol; *Secretary*, Dr. A. F. Myers, of Blooming Glen; *Treasurer*, Dr. Frank Swartzlander, of Doylestown.

Dr. Sanger Brown, of Chicago, has resigned from the faculty of Rush Medical College.

Dr. E. B. Smith, of Detroit, has assumed editorial management of *The National Hospital and Sanitarium Record*, a monthly journal published in the interests of hospitals, trained nurses, and everything connected with the medical side of institutional work.

A Hospital for Consumptives.—The medical direction of the new Hospital for Consumptives, at Dunning, Ill., has been placed in the hands of Drs. W. A. Evans, J. B. Murphy, Homer M. Thomas, Harold N. Moyer, Robert H. Babcock, Florence W. Hunt, William J. Butler, and Frank Billings.

The Spanish Red Cross Society.—A Washington despatch states that the French Embassy has submitted to the State Department a request from the Spanish Red Cross Society for illustrations and explanations of all the surgical, medical, and humane devices used by the American Red Cross and the Army and Navy medical departments to alleviate the horrors of war. A request similar to this has been made of all other governments, the purpose being to publish a volume showing the advances made the world over in caring for the sick and wounded, and in meeting the many distressing situations arising from a condition of war. A full set of illustrations is desired of the American field hospitals, ambulance trains, stretchers, surgeons' outfits, and the manifold requirements and conveniences of the military and naval surgeons' bureaus.

The Jefferson Medical College.—Ex-Senator George F. Edmunds was recently elected a member of both board of trustees of Jefferson Medical College in Philadelphia, to succeed Lewis A. Biddle, resigned.

Health of the German Empress.—The health of the German Empress, not to speak of that of the Crown Prince, occupies a great deal of the attention of the European quidnuncs just now. The extraordinary interest which the Emperor displayed in Dr. Koch and his phthisis cure some years ago is connected with the persistent rumor that the Empress' lungs are affected, and the fact that the Crown Prince is in garrison in South Germany is brought forward as a proof that his parents wish to spare him the rigors of a Potsdam winter. The fact that we have heard very little of late of the Emperor's ear trouble must not be taken as indicating that it has ceased to give anxiety, and the circumstances of his father's death are not forgotten. So that, taken all together, the "family history," as insurance experts call it, is not a very favorable one, and there is much whispering and shaking of heads accordingly.—*Saturday Review.*

Diphtheria Antitoxin in Chicago.—Whether there has really been an increase in the number of cases of diphtheria in Chicago or not, the demand for this new agent is increasing. Every morning a line of applicants is reported at the health office in that city, and during the first two weeks in September five hundred vials have been distributed. As each of them contains material enough to treat several sick victims, it can readily be seen that much suspicion at least has been aroused. Dr. Reynolds is reported as saying that there is no epidemic of the disease, that physicians are steadily taking advantage of the facilities offered by the city laboratory for microscopic tests, that every day twenty to thirty cultures are brought in for examination, that more antitoxin is being used than ever before by physicians, and that the intelligent use of the remedy has robbed the disease to a certain extent of its terrors.—*Peoria Medical Journal.*

Hydrotherapy in Cleveland.—It has been proposed to establish a hydriatric hospital in Cleveland where patients can be sent while remaining under the care of their own physician, the medicinal treatment being supplemented by any form of hydrotherapeutic applications.

The Insane in the State of Wisconsin are cared for in a manner quite different from that adopted by most other commonwealths. Instead of two or three large asylums to provide for the 3,000 insane charges, there is what is called the "county system," there being twenty-five asylums in as many counties, some being larger than others, but altogether providing comfortably for the total of 3,000 patients. The advantages claimed for this system are principally that the expense is much less, that the patients are nearer to their friends and relatives, that it approaches the

separation-and-isolation plan, and that it admits of no small amount of out-of-door occupation, which is so beneficial and which does not obtain in the large insane hospitals, where one and two thousand patients are gathered under one management.—*Clinical Review.*

Medical Teaching in Chicago.—It is asserted in the *Clinical Review* that, owing to the increased registration for the present session, Chicago now has not only the largest aggregate number of medical students of any city in this country, but as well has, in point of numbers of matriculants, the largest individual undergraduate medical school in the world. It is announced that very close to eight hundred students are enrolled at one college. If quality keeps pace with quantity Cook County may eventually become a medical centre.

Muscle and Meat.—The six-days' bicycle contest of last week demonstrated that some men may undergo severe physical and a certain amount of mental strain, without sustaining any appreciable immediate ill effects. One contestant declared at the finish that he was prepared to start on another journey on the following day, and physical examination, it is said, failed to find any reason to the contrary. The victor, after his two-thousand-mile ride, was found to be in comparatively good condition, and it is a matter of interest that during the week he partook of no meat but lived entirely on liquids, cereals, fruits, and eggs. Professor Atwater, of Wesleyan College, made a study, to be incorporated in a report he intends soon to make, of the foods consumed in their relation to energy expended during the contest. According to the notes of his trainer, the following food was taken by the champion: Three pounds of rice, one pound of barley, four pounds of Scotch oats, four dozen pint bottles of prepared milk, one pound rice pudding with raisins, four one-pound bottles of beef extract, six raw eggs (in milk and lime water), ten quarts of milk, one-half gallon of lime water, three pounds of grapes (on Saturday only), three dozen apples, one dozen oranges, one-half gallon of coffee. No stimulants were taken, and the total sleep during the race was nine and one-quarter hours.

May Yet be Tried.—The authorities in London have not yet decided whether to press the charge of manslaughter against the "peculiar people" who were considered responsible for the death of the American newspaper correspondent, Harold Frederic, or accept the coroner's verdict of not guilty.

A New Hospital at Allegheny.—It is purposed by the United Presbyterian Women's Association of Allegheny, Pa., to erect a memorial hospital in that city at an estimated cost of forty thousand dollars. The building will be of four stories, seventy-four feet front by one hundred and sixty-two feet in depth.

A Huge Hospital Abuse.—A writer in the *Medical Times and Hospital Gazette* says that, taking a leaf out of the book of the vendors of foreign stamps and other commodities which boys delight in, the promoters of the Prince of Wales' Hospital Fund have made a raid on the larger of our public schools with a view to get the bigger boys to spend their scanty pocket-money in what is neither flesh, fowl, nor good red-herring, to wit, those precious hospital stamps which are hawked about at prices ranging from one shilling to ten, according to color, and are intrinsically not worth the paper they are printed on. Agents are being sent to the public schools all over the country, delivering lectures illustrated by lantern views of the scenes to be met with in the daily work of a London hospital. After the sympathy of the boys is excited the hospital stamps and albums are introduced to their notice, and they are urged to purchase. Every English boy worships the Prince of Wales, and many are led to get the stamps through their admiration.

Consolidation of Medical Societies.—It has been proposed to establish an academy of medicine in Toronto and to abolish all the other medical societies, the present members of which will become fellows of the academy. The work of the academy will probably be performed in three sections—of medicine, surgery, and gynæcology—each of which, as well as the entire body, will hold one meeting each month.

Obituary.

SIR WILLIAM JENNER.

Sir William Jenner, Bart., G.C.B., F.R.C.P., F.R.S., Physician-in-Ordinary to the Queen and Prince of Wales, died at his residence at Bishops Waltham, Hampshire, on December 11th, at the age of eighty-three years. He was born in Chatham and was educated at University College, London. He was made a fellow of the Royal College of Physicians in 1852. He began professional life as a general practitioner, and was first connected with the Royal Maternity Charity and then with the London Fever Hospital and the Hospital for Sick Children. Much of the work which made him famous was done at the Fever Hospital. In 1861 he was appointed physician-extraordinary to the Queen, and in the following year he was gazetted physician-in-ordinary to her Majesty. In 1863 he became physician-in-ordinary to the Prince of Wales. He was one of the physicians who attended the Prince Consort in his fatal illness.

He was created a baronet in 1868 and a Knight Commander of the Bath in 1872. In 1881 he was elected president of the Royal College of Physicians and held the office for seven years. He severed his connection with the London Fever Hospital in 1861, and with the Hospital for Sick Children in 1862. In 1889 he retired from practice, being then seventy-four years old. In 1894 the Royal College of Physicians awarded him the Moxon medal, a medal voted every three years to some one who is judged to have rendered distinguished services in the field of clinical medicine.

GOUVERNEUR MATHER SMITH, M.D.,

NEW YORK.

In the death of Dr. Gouverneur M. Smith, which took place on December 8th at his home in this city, the medical profession of New York loses one of the best known and most beloved of its members.

Dr. Smith was born in New York City, his father being Dr. Joseph Mather Smith. He was graduated in arts from the New York University in 1852, and in medicine from the College of Physicians and Surgeons in 1855. At the outbreak of the Civil War he entered the army as an acting assistant surgeon, and served until the close of the war. In 1864 he was appointed executive officer in charge of the United States Army General Hospital. On the death of his father, Dr. Joseph Mather Smith, in 1866, he succeeded him as an attending physician at the New York Hospital, and in 1879 was made consulting physician. He was vice-president of the Academy of Medicine for several terms, and was also for a number of years a member of the board of trustees. He was a member of the Metropolitan Club and the Century Association, the Sons of the Revolution, and the Society of Colonial Wars, the Society of the War of 1812, and the St. Nicholas Society, as well as of the Academy of Medicine, the Medical Society of the County of New York, and the Society for the Relief of the Widows and Orphans of Medical Men. The cause of his death was cardiac disease.

He was in a marked degree a typically courteous, dignified, and sympathetic gentleman, ethical in all his doings; thoroughly considerate of the rights of others and earnest in all his many and varied purposes of elevating the tone of the profession, increasing its influence, and adding to its resources. His numerous and varied contributions to medical and general literature earned for him a reputation as a careful observer, a clear thinker, and a polished scholar.

The Late Dr. R. C. M. Page.—The Northwestern Medical and Surgical Society of the City of New York has adopted the following resolutions concerning the death of Dr. Richard Channing Moore Page:

"*Resolved*, That by his death the Northwestern Medical and Surgical Society loses one of its best-esteemed and beloved members. A member of our Society for over sixteen years, his great medical and literary ability, combined with an indescribable charm of manner, endeared him to all who knew him.

"*Resolved*, That in his death the Society has suffered an irreparable loss.

"*Resolved*, That these resolutions be engrossed in the archives of the Northwestern Medical and Surgical Society, and that a copy be transmitted to the widow, and to the weekly medical journals for publication."

PALMER C. COLE, EDWARD S. PECK, HENRY FRUITNIGHT, *Committee.*

The Death of Dr. Salmon P. Cahen.—At an emergent joint meeting of the medical board of the West-Side German Dispensary, and the corps of professors of the New York School of Clinical Medicine, held at the Dispensary and School building, the following resolutions were adopted:

"*Whereas*, We have learned with great pain of the death of our friend and colleague, Salmon P. Cahen, M.D., Secretary of the Medical Board of the West-Side German Dispensary and Associate Professor of Practice at the New York School of Clinical Medicine; and

"*Whereas*, Professor Cahen, by his nobility of character, scientific attainments, and devotion to the sick poor, endeared himself to us as a man and a physician; and

"*Whereas*, His death is to us an irreparable loss; be it therefore

"*Resolved*, That in manifestation of our deep grief, we ask that the Dispensary and School be closed on Friday, the 9th instant, until 1 P.M., that all connected with these institutions may attend the services in a body; and furthermore be it

"*Resolved*, That four copies hereof be engrossed, one to be given to the widow of our friend and colleague, another to his brother, James P. Cahen, Esq., president of the board of trustees, another to Julius P. Cahen, Esq., secretary of the board of trustees, and another to be placed in the assembly-room of this Dispensary and School; and further be it

"*Resolved*, That a copy of these resolutions be spread upon the minutes of the Medical Board of the West-Side German Dispensary, and upon the minutes of the corps of professors of the New York School of Clinical Medicine; and be it further

"*Resolved*, That copies hereof be furnished the medical journals of New York for publication."

FERD. C. VALENTINE, M.D., *President Medical Board of West-Side German Dispensary.* LOUIS FISCHER, M.D., *Secretary New York School of Clinical Medicine.*

Obituary Notes.—DR. SAMUEL DECKER, of Griffin Corners, N. Y., died of typhoid fever on December 3d, aged fifty-nine years. He was born at Livingstonville, N. Y., July 21, 1839, and graduated from the College of Physicians and Surgeons, New York City, in the class of 1867, and had been engaged in active practice since at Livingstonville.—DR. L. CHAPMAN SMITH died on December 10th at his home in Brooklyn. He was born forty-five years ago in Smithtown, L. I. He studied dentistry, receiving his degree in 1876, and then began the study of medicine at the New York University, graduating in 1878. He afterward took up the study of pharmacy and received his diploma from the board of pharmacy.—DR. SALMON P. CAHEN died at his home in this city on December 6th, of pneumonia. He was born in Germany in 1845, and came to this city in 1860. In 1864 he returned to Germany, and was graduated there as a mining engineer. Later he attended medical colleges at Leipsic, Strasburg, and Berlin, and obtained the degree of M.D. from the University of Leipsic in 1876.—DR. GEORGE W. BAKER, of Brooklyn, died of pneumonia on December 5th. He was born sixty-two years ago, and was graduated from the College of Physicians and Surgeons, New York, in 1864. He had practised in Brooklyn ever since his graduation.—DR. EDWARDS HALL, one of the oldest physicians of this city, died on December 11th. He was born in Middle Granville, N. Y., in 1818, and was graduated in arts from Hamilton College in 1840. His medical education was obtained at the Albany Medical College, where he was graduated in the class of 1844. He served three years on the resident staff of the Children's Hospital, Blackwell's Island, and in 1849 went to California. Returning in 1851, he began practice in New York and had lived here ever since.—DR. ALBIN J. FULDA, of this city, died on December 9th. He served during the Civil War as surgeon to the Forty-fifth Regiment of Volunteers, and after the war began practice in New York. He had been in poor health for several years.—DR. JAMES LAWRENCE TYSON died on December 11th at Penllyn, Pa., in his eighty-sixth year. He was born in Philadelphia, November 19, 1813, and was graduated from the medical department of the University of Pennsylvania in the class of 1838. In 1854 he was elected professor of medicine and therapeutics in the Philadelphia College of Medicine. For several years he was physician to the Wills Eye Hospital. He was one of the founders of the Howard Hospital, and for many years was one of its physicians.—DR. THOMAS H. HUZZA, of Atlanta, Ga., died a few days ago in the New York Hospital after an operation for appendicitis. He was born thirty-four years ago in Missouri, and was a graduate of the Jefferson Medical College, Philadelphia, 1887.

Reviews and Notices.

TRANSACTIONS OF THE OHIO STATE MEDICAL SOCIETY.

In compact and handy form there are here presented the papers and discussions at the last meeting of State Medical Society of Ohio. To the members of this society these pages will be full of interest, and to the outside reader there are some papers which may be of profit.

DIPHTHERIE UND DIPHTHERITISCHE CROUP. By PROF. DR. ADOLF BAGINSKY, Director of Kaiser und Kaiserin Friedrich Children's Hospital in Berlin; Professor of Pædiatrics in the Berlin University.

In his preface, Professor Baginsky states that this work is the result of his personal experience, gained by the immense amount of clinical material at his disposal, and that the pathologic-anatomical portion is the result of personal control, aided by his trained assistants, whose zeal he recognizes. These illustrations are reproduced from specimens prepared from his own material in the hospital. The author makes a distinction between the local manifestations of the disease, which he describes as diphtheritis "und diphtheritisch," and between the general infection, so-called constitutional manifestation, which he describes as diphtherie "und diphtherisch."

He defines diphtheria to be a contagious, usually febrile disease, and continuous with fever, producing more often in the upper air passages a grayish or a dirty yellow membrane, which is firmly adherent. It is caused by the invasion of a specific, well-characterized bacterium, discovered by Klebs and Loeffler, and which is usually accompanied by streptococci and staphylococci.

In the history of diphtheria is a vast amount of literature from all over the globe. In this chapter he quotes one hundred and forty-eight different articles and references.

The chapter on etiology and pathogenesis treats of the climatic and geographical conditions. The author cannot see that this disease is really influenced by the effects of climate, for it is met with in tropical countries as well as in northern climates; cases are reported from Egypt, Syria, Spain, as well as from Norway. Nor does the season of the year influence its development. The author gives the details of his experience, and finds in a review of six years a series of 1,344 cases treated from October until the end of March, and 1,017 cases from April until September. Other authors quoted do not regard this disease as being influenced by seasonable changes, as are cholera and dysentery.

Cleanliness is a valuable factor in the prevention of this disease. It can by no means be laid down that a distinct cause of this disease is filthiness, for we frequently find this disease among the cleanly. The author refers to the fact that this disease is frequently met with in the royal households and among the well-to-do families. Interesting facts pointing to the probable etiological factor between damp dwellings and the disease, especially unsanitary apartments, are herein described.

The author does not believe that sewer gas *per se* can cause this disease, but he agrees that people living in apartments in which sewer gas escapes, can, by inhaling the gas, attain a distinct subnormal condition, and then be more susceptible to the infection of any disease The author does not believe that anybody can question that sewer gas should cause diphtheria in one, pneumonia in another, and typhoid in a third.

The spread of the disease he believes to be purely a question of the dissemination of the seed on a proper soil. The disease is contagious, and therefore can be carried from person to person.

In the chapter on the diphtheria bacillus, pages 63–91, the minutest details are given as to the morphological character of the Klebs-Loeffler bacillus, the manner of taking a culture, the recipes for the various culture media and for the staining, etc., with several beautiful illustrations of the Loeffler bacillus stained with Neisser's stain and of unstained specimens. On page 86 is given the formula for a good stain for these Klebs-Loeffler bacilli.

The next chapter deals with the pathological anatomy of the pharynx, respiratory organs, the heart, gastro-intestinal canal, spleen, liver, pancreas and mesenteric glands, urogenital apparatus, central nervous system, and organs of sense. This is profusely illustrated, containing no less than twenty different pathological (stained) and also bacteriological cultures and specimens. Especially good are the illustrations showing hemorrhagic nephritis, and the fatty and degenerative changes in the nerves and spinal cord.

Localized diphtheria angina is next detailed, and the chapter illustrated by numerous fever curves. Following this, the author describes constitutional diphtheria, or, as the author terms it, a diphtheritic general infection, in which the whole body participates. Every symptom is given especial weight, and all the secretions and excretions of the body are given the prominence that they deserve.

In the next chapter, the author describes septicæmic diphtheria, which he regards as the most virulent form of this disease. This is also profusely illustrated with charts (temperature), etc. The lesions of the skin and of the lymph glands, of the joints, of the respiratory organs, of the circulatory apparatus (pulse tracings), arrhythmic heart action, tachycardia, and every form of pulse variation are chronicled and illustrated. Next follow the participation of the digestive apparatus, the urinary organs, the nervous system, and lastly, the complications and the sequelæ.

A chapter deals with the various forms of post-diphtheritic paralysis and also hemiplegic paralysis.

Next we come to diphtheritic nephritis, then to the chapter on diphtheritic rhinitis.

Diphtheritic laryngo-tracheo-bronchitis and diphtheritic croup, are the subjects of the next chapter. This chapter is truly a masterpiece, and is the stronghold of this monograph, for every detail is herein carefully outlined.

Diphtheritic vulvo-vaginitis, diphtheritic ophthalmia, diphtheritic otitis, the combination of diphtheria with measles, scarlet fever, and pertussis receive due consideration. Diphtheria and varicella, diphtheria and ileo-typhus, are the subjects given due prominence.

The chapters on the diagnosis and prognosis are followed by the most vital one, which is that on therapeutics. The author describes all the remedies which have been used and recommended, for both the local and constitutional treatment of this disease. He lays careful stress on the amount of antitoxin to be used in a mild and in a severe form of this disease, and the dose to be given in cases in which there is a croupy manifestation of laryngeal stenosis. It is interesting to learn, for instance, that this distinguished pædiatrician recommends the beginning dose to be three thousand units in malignant cases. The author advises coolness and a careful study of the severe symptoms following this latter injection; and if there is no amelioration of the symptoms, then he advises a second injection of the same dose. The statistics correspond with those given in the discussion of the paper on the treatment of diphtheria, read before the section on pædiatrics of the New York Academy of Medicine, December 10, 1896, by Louis Fischer, M.D., of New York, published in the MEDICAL RECORD, December 26, 1896.

"Medication and Stimulation" and "Treatment of Collapse" are given proper weight, and here we note that on page 331 the author opposes the use of strychnine injections. The next chapter deals with the treatment of laryngeal croup. This contains fifteen illustrations (instrumental and anatomical), detailing all the methods pursued in the intubation and extubation of the larynx, much of which is to us certainly not new, but adds greatly to the completeness of the work. Dr. Edwin Rosenthal, in a paper read before the State Society of Pennsylvania, May 21, 1896, has given an immense amount of study to the same details described by Professor Baginsky, and his statistics of recoveries are virtually the same.

The book ends with the description of tracheotomy, inferior and superior; the method of introducing the cannula, and the after-treatment.

To one desiring a complete insight into the subject of all forms of diphtheria, we can certainly recommend this book. There is nothing in the English language so complete as this work. Based as it is on Professor Baginsky's personal experience, and he being really the first man thoroughly to educate the profession of the world to the true status of the antitoxin question, this book completes to date all that can be said on this subject. Nothing has been omitted; the anatomical, bacteriological, pathological, and instrumental (mechanical) illustrations are so perfect that no praise that we can bestow on this book can be too much. The book deserves a translation and a very prominent place in the library of every up-to-date physician.

Society Reports.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, November 9, 1898.

T. MITCHELL PRUDDEN, M.D., PRESIDENT.

A Case of Primary Tuberculosis of the Colon in a Child.—DR. ROLAND G. FREEMAN presented this report, together with the specimens. The patient had been passing bloody-looking urine for a long time prior to being admitted to St. Mary's Hospital on September 28th. One week before it had been kicked in the abdomen. The child was poorly nourished. No specimen of urine could be obtained, because of incontinence. All over the right side of the abdomen there were tenderness and bogginess, and the abdomen was slightly retracted. The child had a convulsion shortly after admission, another later in the night, and three more the following day. Death occurred on the second day after admission. At the autopsy the examination of the heart, lungs, and liver was negative. The spleen was smaller than usual, and its capsule was shrivelled. The bladder was distended, so that it reached to one inch and a half below the umbilicus. Connecting the bladder with each kidney was a large, tortuous ureter, about the size of the colon. Pressure on the bladder distended both kidneys and ureters and caused the urine to be discharged from the urethral orifice. The lymph nodes adjacent to the caput coli were enlarged and, on section, were found to be cheesy and to contain creamy fluid. The caput coli contained a large tuberculous ulcer. Examination of the brain was negative. The interesting features of the case were the dilatation of the bladder with hydronephrosis, the acute nephritis, and the tuberculosis of the caput coli and adjacent lymph nodes. The frequency of the occurrence of tuberculosis of intestinal origin, Dr. Freeman said, was a disputed point, men of wide experience holding radically different opinions. Sims Woodhead [1] states that he has seen a lage number of cases in which the infection seemed to be from the intestine, and Cohnheim, Aufrecht, and Peterson [2] hold the same view. Schmidt [3] states that out of a series of three hundred and thirty-six autopsies at Freiburg there were six cases of primary infection of the mesenteric lymph nodes, while Eisenhardt, of Munich (quoted by Schmidt), in a seris of one thousand autopsies found only one such case. There had been very few such cases reported in New York. Dr. Hodenpyl [4] had reported one in an adult in 1895 to this society, and Dr. Northrup [5] had reported one in an infant, and he had himself reported previously two such cases—one with the late Dr. J. Lewis Smith to the Pediatric Section of the Academy of Medicine,[6] and the other to this society in 1896.[7] In Dr. Hodenpyl's case there was no involvement of the lung. In Dr. Northrup's case there was a generalized tuberculosis with but slight involvement of the lung, the origin of which had evidently been in the intestine. In the case presented by the speaker to the Pediatric Section of the Academy of Medicine no lesion was found in the lungs. One bronchial lymph node at the bifurcation of the trachea contained tuberculous nodules, but no fluid contents. The mesenteric lymph nodes adjacent to the caput coli were markedly enlarged, and some of them contained broken-down cheesy material. In his second case there was an ulcer of the caput coli, and beneath it was a large tuberculous lymph node. However, as there were tuberculous lesions disseminated through the mesentery, the mediastinal and bronchial lymph nodes, and lung, the exact origin of the disease was somewhat a matter of conjecture.

A Case of Hodgkin's Disease Terminating with Leucocytosis.—DR. HARLOW BROOKS reported this case. (See page 874.)

Three Cases of Lympho-Sarcoma or Hodgkin's Disease.—DR. F. C. WOOD reported these cases. He said that the first patient was a large, well-nourished man, who had entered the hospital with a complete paraplegia, loss of power of both sphincters, and with a very vague history. The autopsy showed that the bronchial lymph nodes were enormously enlarged, and that the disease had involved the bodies of the vertebræ, the vertebral canal, and the spinal cord. There was one small nodule in the liver. The retroperitoneal glands were not enlarged, and the glands in the neck, axilla, and groin were not affected. The involvement of the tissue around the lymph nodes made it seem proper to call the case one of lympho-sarcoma. In the second case, the specimens had been removed by operation from a poorly nourished child of five years, under the supposition that the glands were tuberculous. Microscopical examination showed that the nodes were simply hyperplastic. In two or three weeks there was a recurrence, and all the superficial glands rapidly enlarged. The blood showed a marked diminution in the hæmoglobin. The specimens presented from the third case were lymph nodes of the neck which had been removed from a colored woman who had been in St. Luke's Hospital for about two months. About four months before admission she had noticed a swelling of the right side of the neck. This had increased in size, and she had lost flesh and strength rapidly. The enlarged glands extended from the zygoma to the clavicle. Microscopical examination of the blood showed nothing but an extreme anæmia. There was marked œdema of the lower extremities. The autopsy revealed only enlargement of the glands of the right side of the neck. These glands could be rolled around in the loose connective tissue, and, on section, were opaque and firm and had no cheesy centres. The retroperitoneal glands in some places were calcareous. The spleen in this case was quite small. There were a few small nodules in the lung, apparently sarcomatous. There was also a small, firm, whitish nodule in the liver. The kidneys were normal. On section of the lymph nodes their centres were seen to be the seat of a necrosis. Around this was a small ring of lymph cells, and within this were a few giant cells and tubercle bacilli. There were nodules in the lungs showing tuberculous change. The speaker said that the enlargement was too rapid for an ordinary tuberculosis, and the process in the lung was so old that the nodules were calcareous. The question then arose as to whether the case was one of tuberculosis or of Hodgkin's disease with an accidental infection. A number of cases had been described under the name of Hodgkin's disease in which there had been a rapidly fatal termination, associated with enlargement of the glands in certain regions, and in which tubercle bacilli could be demonstrated. In these cases there was no tendency to general tuberculous infection.

DR. LEWIS A. CONNER said that he hoped an explanation would be forthcoming which would enable a proper classification to be made of these puzzling tumors. At the New York Hospital there had been

[1] Woodhead: Medical Press and Circular, 1888, xiv., p. 265.
[2] Wurzburg: Therapeutische Monatshefte, 1891, p. 18.
[3] Schmidt: Inaugural Dissertation. "Ueber die Häufigkeit der Tuberculose," etc. Freiburg, 1897.
[4] Hodenpyl: MEDICAL RECORD, 1895, i., p. 313.
[5] Northrup: Proceedings of New York Pathological Society, 1890, p. 42.
[6] Smith and Freeman: American Medic. Surgical Bulletin, 1895, p. 1,461.
[7] Freeman: Proceedings of New York Pathological Society, 1896, p. 105

two cases in the past year, neither of which had corresponded with the classical description of Hodgkin's disease, and in neither had there been any of the usual gross or microscopic appearances of tuberculosis. The glands had been individually enlarged and, on section, had presented a waxy, translucent appearance and had been of fair consistency. In both instances the disease had lasted a considerable time. In one there were immense masses of glands in the neck only, but each was distinctly outlined. Under the microscope there had been found lymphoid cells with distinct stroma between them.

Dr. Wood said that he had seen one similar case in which the glands had been removed by operation, and, on section, there had been nothing found but a hyperplasia. However, on inoculating a guinea-pig with some of the gland, the animal had died of tuberculosis. The enlargement of the glands had occurred too rapidly—within about three weeks—so that it seemed probable that the infection had been rapid and the glands had been removed before the occurrence of characteristic tuberculous changes.

Dr. Harlow Brooks said that he had noticed, in a recent report of an English bacteriologist concerning observations on the glands in Hodgkin's disease, that this observer had found a great many germs in the glands, most of them being either streptococci or members of the colon group. The opinion of this investigator seemed to be that these were either post-mortem or terminal infections. The tubercle bacillus had been found in a good many of the reported cases, but these had not been included under the classification of Hodgkin's disease. When the autopsy had been made fairly early no growth had been observed.

Perforating Ulcer of the Stomach with Hour-Glass Contraction of the Stomach.—Dr. Leon U. Le Wald reported this case. The patient was a woman of forty-three years who had been admitted to hospital with evident signs of general peritonitis. A very indefinite history only could be obtained, but it was stated that she had suffered from indigestion and pain in the region of the stomach for about three years. At the autopsy the abdominal cavity was found to contain a large quantity of purulent fluid. In the anterior wall of the stomach, just slightly anterior to the lesser curvature and about the middle of the stomach, was a perforating ulcer. It measured four millimetres in diameter, had very sharply cut edges, and felt somewhat indurated. The stomach was divided into two nearly equal portions by a constriction situated to the pyloric side of the ulcer. There were adhesions between the posterior wall of the stomach and the pancreas and between the stomach and liver and transverse mesocolon. On opening the stomach, there was an aperture discovered between the two portions which just admitted the tip of the finger and measured thirteen millimetres in diameter. Coming off from the cardiac side of this constriction was a small pouch which led to the perforation on the anterior wall of the stomach. The area surrounding this was indurated, but microscopical examination of this portion revealed only a chronic inflammatory process. From the presence of the surrounding adhesions and from the general appearance it did not seem probable that the hour-glass contraction of the organ was congenital; it was more probable that a former ulcer in the process of healing had caused a drawing up of the stomach wall.

An Unusual Lesion of the Intestine in Typhoid Fever.—Dr. Le Wald also reported this case—that of a male, twenty-eight years of age, who was supposed to have died in the third week of a typhoid fever that had been contracted at the Montauk Point camp. The clinical record was that of a severe typhoid fever. The blood gave the Widal reaction. At the autopsy very typical lesions were found in the small intestine. There were also ulcers with elevated edges extending throughout the large intestine, even down to the anus. The mesenteric glands were enlarged, and some of them were suppurating. The unusual lesion in the case, however, was the extensive involvement of the vermiform appendix. The organ was enlarged to the size of one's index finger. It was of usual length, but measured two inches in circumference toward its base. On opening it, the lumen was found nearly obliterated, due to the marked infiltration and swelling of the mucous membrane. The infiltration also extended into the mucosa and muscular layers. A number of small superficial ulcerations of the mucous membrane were present, particularly toward the base. The lesion was considered important as an explanation of the occasional cases of typhoid fever which give abdominal symptoms so closely simulating ordinary appendicitis. Only recently a patient had been operated on at Bellevue Hospital for appendicitis, when the incision revealed the presence of typhoid fever with an involvement of the appendix similar to the present case.

Dr. E. K. Dunham said that he had examined microscopically some of the lesions in the intestine and other organs in this case, because it had seemed to be such a typical example of typhoid fever. His attention had been called to the observations of Dr. Mallory in typhoid fever. This investigator had studied the lesions in a number of cases, notably one in which death had occurred before ulceration had taken place, and had arrived at the conclusion that the lesions in typhoid fever were essentially proliferative; that the endothelioid cells, as he called them, of the lymph nodes in the intestine and elsewhere, and the endothelium of the veins and lymphatic vessels proliferated during the course of the disease; and that as a result of this proliferation phagocytic cells of large size were produced, which wandered into the lymphatics and blood-vessels and destroyed the ordinary leucocytes and red blood cells. In this way it seemed possible that they might clog some of the vessels and cause local necrosis. Dr. Dunham said that he had seen some of the specimens prepared by Dr. Mallory, and they were very suggestive and instructive. Certainly some of the phagocytes were crowded with red blood corpuscles, and others with leucocytes and lymphocytes. Although the specimens received from the case now under discussion had been very much altered, it had seemed to him that in the sections which he was about to exhibit to the society there were similar appearances. Dr. Mallory, in his publication of last April, had likened typhoid fever to tuberculosis, claiming that in tuberculosis the proliferation was focal, while in typhoid fever it was general. This difference was explained by the fact that the poisons produced in typhoid fever were diffusible and absorbable, whereas in tuberculosis they were more nearly confined to the region in which the bacillus is found. Dr. Dunham then exhibited under the microscope a series of six sections illustrating the points already alluded to.

Dr. Hodenpyl said, regarding the swelling and ulceration of the lymphatic nodules in the appendix in typhoid fever, that he had seen this condition twice, but without any symptoms which could be regarded as those of appendicitis. Looking over the literature some time ago, he had found that there had been a number of such cases reported, but in none of them apparently had there been any symptoms of appendicitis. The same held true of tuberculous ulcers of the appendix which are observed from time to time.

Dr. Brooks said that a member of General Lee's staff had made many autopsies on typhoid-fever patients dying in the camp near Jacksonville. This

gentleman, Dr. Bolling Lee, had stated to him that one of the patients had presented the symptoms and physical signs of an acute appendicitis, but the surgeon had refused to operate. At the autopsy the appendix was found to have been perforated by an ulcer which appeared to be typhoid. He had also found in these patients very commonly large ulcerated areas in the intestine, which were thought to be due, not to the typhoid fever, but to a phagedenic condition associated with malnutrition.

A Case of Primary Tuberculosis of the Cervix Uteri.—Dr. F. S. Matthews reported this cases (see page 872).

Duodenal Ulcer.—Dr. Lewis A. Conner presented an ulcer of the duodenum removed from a man twenty years of age, who had entered the Hudson Street Hospital with the history of having been severely ill for less than twenty-four hours. There were evidences of peritonitis, and, suspecting appendicitis, the abdomen was opened over that organ, but the appendix was found to be normal. There was a general peritonitis with gas in the peritoneal cavity, but the condition of the man was so bad that no further search was admissible. He died a few hours later. The post-mortem showed a perforation in the anterior wall of the duodenum, immediately below the pylorus, and in the most favorable situation for operative interference. Within the last four years there had been at that hospital five cases of duodenal perforation, as well as one perforation of a gastric ulcer and another from an ulcer in the upper part of the jejunum. In four of the cases the ulcer had been on the anterior wall and in the remainder on the posterior wall. In one case there was an ulcer in the stomach as well as in the duodenum. In most of the cases the ulcers were very close to the pyloric ring.

Chronic Ulcer of the Stomach.—Dr. E. Hodenpyl presented two such cases. The first of these was a man thirty-five years of age, who had been a very heavy drinker except during the last year, when he had been more temperate. Seven days before death, and without any warning, he had a very profuse hemorrhage from the stomach, which almost exsanguinated him. There was a well-marked nephritis present on admission to the hospital, and he died seven days later in a uræmic attack. At the autopsy, aside from the chronic diffuse nephritis and marked œdema of the meninges of the brain, the only noteworthy feature was a circular ulcer, with sharply cut edges, on the upper curvature of the stomach about one inch from the pylorus. On the base of this ulcer were two rather large arteries with open mouths. The second case was that of a woman, fifty-one years of age, who had been well up to two months before death. She complained of increasing weakness and occasional attacks of vomiting. On admission to hospital, there was some tenderness over the epigastrium, and her temperature was 99.5° F. The autopsy revealed an intense general peritonitis, with fully two quarts of the stomach contents in the abdominal cavity. There were numerous pockets of pus all over the abdominal cavity, shut in by firm adhesions, most of which were fibrinous, but some were distinctly organized, indicating that the peritonitis had existed for a considerable time. The cause of this subacute peritonitis was a very large perforation in the anterior wall of the stomach, and two inches from the pyloric opening and near the lesser curvature. The perforation was through the base of an ulcer having sharply cut edges, one inch in diameter, which had apparently occurred some time previously.

Dr. James Ewing said he was reminded of the case of a woman who had entered the Roosevelt Hospital with symptoms of perforation of a gastric ulcer. She remained in a critical condition for one month, with symptoms of peritonitis. At the autopsy it was found that the first perforation had caused a peritonitis, involving the surface of the stomach and the greater omentum; that the peritonitis has been limited by the limits of the omentum; and that an abscess cavity had formed, which had been shut off from the rest of the abdominal cavity.

Intra-Nasal Growths.—Dr. Robert C. Myles presented two growths from the nose. The first, which seemed macroscopically to be a papilloma, had been removed from the inferior turbinate of a man. According to recent investigation, Dr. Myles said, these growths were claimed to be simple hypertrophies. The other growth, from a girl of twelve years, was three inches in length. It grew from the under surface of the middle turbinate and from the ethmoid bone, and, following the channel of the middle meatus, passed into the rhino-pharynx. The tumor was hidden from view in the nose, the only part visible being that in the throat. It presented a peculiar chain-like appearance, apparently myxomatous.

Ulceration of Both Stomach and Duodenum with Perforation of the Splenic Artery.—Dr. Le Wald presented specimens from a case in which there was ulceration of both the stomach and duodenum. They had been removed from a girl of twenty-two years. Two years ago she had had an attack of pain in the stomach and had vomited blood. She had been recently admitted to the hospital because of indigestion. The stools were noticed to be tarry, and she vomited blood in considerable quantity until death occurred, about six hours after entering the hospital. At the autopsy it was found that the stomach and intestines were filled with blood, and there was an ulcer, one inch in diameter, on the posterior wall of the stomach, having characteristically clear-cut edges, which were adherent to the pancreas. At the bottom of this ulcer was an opening into the splenic artery, and this had been the source of the fatal hemorrhage. There was also an ulcer in the duodenum, just below the pylorus, which had healed, and which exhibited a certain degree of contraction of the walls of the duodenum, thus illustrating the method of production of the hour-glass contraction of the stomach in the case presented earlier in the meeting.

Dr. Harlow Brooks presented a fresh specimen of ulcer of the stomach.

A Preliminary Communication on the Bio-Chemistry of the Bacillus Tuberculosis.—Dr. P. A. Levene presented this paper (see page 873).

Dr. E. K. Dunham said that some years ago when tuberculin was first being used in Germany there had been a death after the tuberculin treatment. On autopsy there had been observed what appeared to be submiliary tubercules scattered through the lungs and several of the other viscera, but a search made by Professor Orth and various assistants, including himself, had failed utterly to show any evidence of the presence of tubercle bacilli. The observation seemed to be very interesting because there were already present, as far as the morphology was concerned, the beginnings of tuberculous formation, an apparent proliferation due to toxic substances. The process had not gone far enough to cause degeneration.

The society then went into executive session.

Coryza in Infants.—

℞ Cocainæ hydrochlorat..... 2 parts.
Aq. dest..... 50 "
Glycerini..... 50 "
M. S. One drop instilled into each nostril three or four times a day.

—Naegeli-Akerblom.

Therapeutic Hints.

Car Sickness. — When a person who contemplates a journey details a history of car sickness, I advise a dose of calomel at night and Epsom salts before breakfast the day of starting, since during the journey and often for a day or two after the trip the bowels are constipated. Light, digestible food is allowed. In an emergency case my usual treatment is to lay the patient down in as comfortable a position as possible, apply a bandage to the eyes with cold water, and give a tablet consisting of acetanilid, gr. iiiss.; sodium bicarbonate, gr. i.; sodium bromide, gr. $\frac{1}{10}$; citrate of caffeine, gr. ss.; and, if the heart's action seems weak, trinitrin, gr. $\frac{1}{100}$.—W. M. Bemus.

Treatment of Hemorrhagic Infarction of the Lungs. —The treatment is purely symptomatic. Hemorrhage is rarely so profuse as to require the use of hæmostatics. Absolute rest in bed and regulation of the heart's action, in case of disease of that organ, may be necessary. For this purpose digitalis may be employed when the heart is acting weakly. If signs of collapse develop, such as cold extremities, etc., alcoholic stimulation and the application of sinapisms to the body and extremities are indicated. Extensive dry cupping will relieve the dyspnœa better than anything else. For the dyspnœa and the cough, as well as for the enfeebled and irregular cardiac action, five to ten minims of Magendie's solution of morphine may be given hypodermically with good effect. Pleurisy and pneumonia, should they occur, must be treated independently of the infarction.—R. C. M. Page.

Hypodermic Injections of Alcohol and Tincture of Belladonna in the Treatment of Apparent Death in the Newborn.—According to the *Semaine Médicale*, Dr. Brown, to the classical means of combating apparent death in the newborn, has added a new remedy. He is accustomed to inject under each arm of the child five drops of whiskey, to which has been added a drop of tincture of belladonna. Soon after the child opens its eyes and utters a cry, which is indicative of the beginning of respiratory function. In case alcohol and belladonna do not resuscitate the child immediately, the author gives a hypodermic injection of from four to eight grams of hot sterilized water, and introduces into the stomach the same quantity of this liquid, to which has been added a drop of aromatic spirits of ammonia.

Acute Conjunctivitis.—Protargol, in two to ten-per-cent. solutions, dropped into the eyes, three, six, or twelve times a day. In the chronic forms of conjunctivitis with hyperplasia, the results are not so satisfactory.—Pergens, *Klin. Monats. f. Augenh.*, April.

Opium in Diarrhœas of Young Children.—It is contraindicated: (1) In the first stage of acute diarrhœa, before the intestinal canal has been freed from decomposing matter; (2) when the passages are infrequent and of bad odor; (3) when there is a high temperature or cerebral symptoms are present; (4) when its use is followed by elevation of temperature or the passages become more offensive. It is indicated: (1) When the passages are frequent, with pain; (2) when the passages are large and watery; (3) in dysenteric diarrhœa, together with castor oil or a saline; (4) in late stages, with small, frequent, nagging passages; (5) when the passages consist largely of undigested food and the bowels act as soon as food is taken into the stomach.—Crandall.

Pernicious Vomiting of Pregnancy.—Dr. G. W. Harris (*The Medical Age*, August 25th) concludes a paper on this subject by stating that there are certain methods of procedure which the experience of this and similar cases he has met with lead him to accept as safeguards in future emergencies. (1) In cases of uncontrollable vomiting of pregnancy, when the woman's health begins to fail and emaciation becomes marked, he counsels insistence on terminating the pregnancy, and, failing to gain the consent of the patient and her friends, withdrawal from the case at once. (2) When active interference is decided upon in cases that come under treatment in the so-called third stage, he deprecates wasting time by the slower methods, and urges rapid dilatation and the emptying of the uterus at once. (3) After emptying the uterus by this or any other method, the patient should always be left in charge of a competent nurse or a physician, at least during the twenty-four hours immediately following.

Diuretic in Ascites and Œdema from Bright's Disease.—

℞ Copaiba resin ..... gr. x.
Diluted alcohol ..... ♏ xv.
Spirits of chloroform ..... ♏ x.
Syrup of ginger ..... ♏ xl.
Mucilage of acacia ..... ♏ lxxx.
Water ..... q.s. ad ℥ i.
— *Westminster Hospital.*

Biliary Lithiasis.—Ox bile is used internally in biliary colic by Gautier (*Rev. Méd. de la Suisse Rom.*, June 20th). The bile is decolorized to get rid of the toxic coloring matter (especially bilirubin), and then sterilized at 104° to 105° C.; one hundred grams of bile produce ten grams of the extract. Of this latter he gives ten to twenty centigrams in pill or capsules twice a day after meals. This treatment cannot be regarded as a certain preventive of colic, since, if the gall bladder is full of stones, it does not cause them to disappear, though its effect will be evident later. This treatment is also to be recommended after operations for the evacuation of calculi, to prevent relapses.

Conservatism in the Use of the Stomach Tube.—Dr. A. L. Benedict (*American Medico-Surgical Bulletin*, June 25th) concludes an article on this subject in the following manner: "(1) Don't use the stomach tube simply because you want to be considered scientific and up to date. (2) Don't withdraw stomach contents for examination unless you are prepared to examine them. (3) Don't discard external means of physical diagnosis because you have a stomach tube. (4) Don't expect too much from diaphanes, electric buzzers, buckets, complicated tubes, etc. All of these have their uses, but are available in very rare cases. (5) Don't pass the tube without first examining the mouth and throat, and also the heart and arteries, and at least inquiring as to pregnancy, piles, and other possible complications. (6) Don't pass the tube as a means of treatment unless you know precisely what you wish to accomplish with it. (7) Don't introduce a weight and bulk of water which you would consider injurious if swallowed. As a rule, don't introduce more than a pint at once and never more than a quart. Don't be deceived by the ball-valve action of a particle of food or any other cause which may allow water to remain in the stomach. Make sure that you withdraw as much as you introduce, except that you may allow a little for leakage through the pylorus, or possibly for absorption. Remember that the more a stomach can hold the less it ought to. (8) Don't imagine that the gastric douche will cure all the diseases of the stomach; you would laugh at a gynæcologist who held such a view about the vaginal douche. (9) Don't imagine that a stomach is doing well until it can digest plain but varied diet without mechanical interference. Don't speak of a patient as cured until he can indulge in all the ordinary food without medical aid

and without injury. (10) Don't let the patient learn to pass the tube himself. This rule holds for his benefit as well as yours. (11) Don't fail to use the tube or to have it used when the indications outweigh the contraindications."

Gouty Neuritis and Allied Affections.—

℞ Colchicine ..... gr. $\frac{1}{60}$
Sulphate of quinine ..... gr. i.
Extract of colocynth ..... gr. i.
M. et ft. pil. S. One three times a day.

—C. D. F. PHILLIPS.

Chlorosis.—

℞ Ferri et potass. tartrat ..... 1 part.
Sol. potass. arsenitis ..... 1 part.
Aq. dest ..... 3 parts.
M. S. From five to ten drops with each meal.

—CASATE.

Resolvent Mixture.—

℞ Ammonium chloride ..... 10 parts.
Tinct. of arnica ..... 10 "
Camphorated vinegar ..... 75 "
Camphorated brandy ..... 75 "
Infusion of rue ..... 300 "
M. S. External use only.

—*Gaz. Hebd. de Méd. et de Chir.*

Nephritis.—

℞ Pilocarpinæ nitrat ..... gr. ¾-iss.
Vaselini ..... ʒ iij.
M. et ft. ungt. Apply to the dorso-lumbar region every morning.

—JULIA.

Painful Dentition.—

℞ Cocainæ hydrochlor ..... gr. ii¼.
Chloroformi ..... gr. xv.
Glycerini ..... gr. ccc.
Ol. rosæ ..... gtt. vi.
M. S. To be rubbed on the gums several times in succession.

—CHOMPERT.

For Tapeworms in Children.—

℞ Cusso ..... ʒ iiss.
Syr. aurant ..... ʒ v.
Aq. destill ..... q.s. ad ℥ iij.
M. S. One-third part to be taken every half-hour. For a child five years old.

Or—

℞ Cusso ..... ʒ i.
Ext. filicis maris ..... ʒ ss.
Syr. cinnamomi ..... ʒ iij.
Aq. destillat ..... q.s. ad ℥ ij.
M. S. One-third part, every half-hour.

—FREYBERGER.

℞ Pulp. tamarind ..... 30 gm.
Pulv. kamalæ ..... 6 "
Succ. citri ..... q.s.
M. S. At dose.

—GUIDA.

Threadworms.—

℞ Ferri sulphatis ..... gr. xij.
Ext. glycyrrh. liq ..... ʒ ss.
Decoct. aloes comp ..... ʒ iij.
M. S. Two teaspoonfuls three times a day, to a child three years old.

Or—

℞ Ferri sulphatis ..... ʒ i.
Infus. quassiæ ..... O i.
S. One-third part to be injected every other morning.

—GOODHART.

Pertussis.—

℞ Zinci sulphatis ..... gr. ½
Sol. atropinæ (one per cent.) ..... ♏ ss.
Syr. zingiberis ..... ♏ x.
Aq. cinnamomi ..... q.s. ad ʒ i.
S. At first twice, after a few days three times a day. For a child one year old.

The dose of zinc sulphate may be increased to gr. ¼, and later to gr. ⅓ at intervals of a week; the dose of atropine may be increased by ♏ ¼ every third day; effect to be carefully watched.—EUSTACE SMITH.

Fetid Rhinitis.—

℞ Salol ..... ʒ i.
Acidi boracici ..... ʒ ss.
Acidi salicylici ..... gr. vij.
Thymoli ..... gr. iij.
Talci ..... q.s. ad ℥ ij.
M. S. To be snuffed up night and morning.

—SEIFERT

Vaginal Douche.—

℞ Alumen. pulv.,
Ac. boracici pulv.,
Boracis pulv ..... āā 30 gm.
Hydrastin. sulph ..... 0,6 "
Acidi carbolici,
Ol. canell ..... āā 20 gtt.
M. S. Two coffeespoonfuls in a litre of water.

—HOUSE.

An Astringent Ointment in Relaxation of the Vaginal Mucous Membrane.—

℞ Tinct. capsici ..... 7 gtt.
Ext. krameriæ ..... 60 gm.
Ext. rosæ fld.,
Tinct. vanillæ ..... āā 75 gtt.
Vaselini albi ..... 450 gm.
M.

To Lessen the Dangers of Cocaine Injections.—

℞ Resorcin ..... 10 gm.
Cocainæ hydrochl ..... 20 "
Aquæ destill ..... 100 "
M.

The resorcin diminishes the toxic effect, increases anæsthetic action, and prevents the crystallizing of the cocaine.—HAVILLAND HALL.

In Lobar Pneumonia.—

℞ Tinct. aconit ..... ♏ i.
Liq. ammon. acetat ..... ♏ xv.
Aq. laurocerasi ..... ♏ x.
Elix. simplicis ..... ♏ x.
Aquæ destill ..... q.s. ad ʒ ij.
M. S. At a dose, three times a day. For a child two to five years old.

—ASHBY.

In Chronic Bronchitis with Copious Expectoration.—

℞ Alumen ..... ʒ ss.
Vini ipecac ..... ʒ iss.
Syr. tolutan ..... ʒ ss.
Aquæ ..... q.s. ad ℥ iij.
M. S. Two teaspoonfuls every three hours. For a child one year old.

—GOODHART.

Nephritis in Children.—

℞ Liq. ammon. acetatis ..... ʒ ss.
Tinct. digitalis,
Spir. chloroformi ..... āā ♏ v.
Aq. destillat ..... q.s. ad ℥ ss.
M. S. Three times a day to a child six to ten years old.

—ASHBY.

Insolation.—

℞ Sol. trinitrin. (1 to 1,000) ..... 20 gtt.
Aquæ destillatæ ..... 300 gm.
M. S. Teaspoonful.

This should be given every quarter of an hour in acute cases until almost complete disappearance of the symptoms. Extend the interval between the doses as improvement goes on. Instead of ice upon the head, apply compresses wet with tepid arnica solution.—H. GRAS, *Petit Marseillais*, September 7th.

Antiseptic Vaginal Douche.—

No. 1.

℞ Alphanaphtol ..... 3 gm.
Spt. vini rect ..... 26 "
Aq. destill ..... q.s. ad 1,000 "

No. 2.

℞ Betanaphtol ..... 5 gm.
Spir. vini rect ..... 30 "
Aq. destill. calid ..... q.s. ad 1,000 "

Correspondence.

OUR LONDON LETTER.

GENERAL MEDICAL COUNCIL—SURGEONS' GOWNS OF THEIR COLLEGE—SARCOMA—LONDON WATER SUPPLY —ROENTGEN SOCIETY'S CONVERSAZIONE.

London, November 25, 1898.

The autumn session of the General Medical Council began on Tuesday. The president followed the bad custom of delivering an opening address, but he was commendably brief on this occasion. Sir W. Turner is a strong man and may yet abandon a plan which only wastes time—and time is a very expensive item, though the Council seems scarcely to realize its cost. To repeat what every one knows is a dreary proceeding. To go over the items of an agenda paper, or even to set forth what might well be included in such a paper, is an unworthy task for the president of such a body. The councillors are not novices in public work and should set to work with business-like alacrity.

The afternoon of Tuesday was frittered away in consequence of the objections of some councillors to others being allowed to inspect the documents of the council. I told you how at the former session this question arose. Mr. Victor Horsley had been denied access to such documents by direction of the president. He appealed to the council against this high-handed proceeding, and a standing order was made as to the way in which the documents could be consulted by members. Strong man as he is, and with plenty of common sense, Sir W. Turner evidently blundered, and now that the obstruction of the standing order is manifest to all he should move that it be rescinded. To consume half a day in moving separately for the production of documents in each case is to reduce the proceedings to the level of a farce.

It was satisfactory to find most of the weighty councillors were in favor of the contention that every member has a right to examine all papers belonging to the council. It will strike you as ridiculous that documents in the hands of office clerks are not to be perused by their employers, or that the president or a committee may commit the council to legal proceedings and refuse their colleagues leave to see the evidence or the lawyer's bill. Now that another half-day has been wasted, we may hope all objections will be withdrawn. The subject was renewed on Wednesday, but leave was given in all the cases requested, and opposition only wasted time.

The rest of the day and Thursday were devoted to penal cases. The council also considered several applications to be restored to the register on the part of persons whose names had been removed. Among other subjects the tables supplied by the army and navy departments gave rise to some conversation, as they seemed to show that persons holding the diplomas of the conjoint board had been specially successful at the competitive examinations for commissions. Some jealousy among the corporations was evinced, which will scarcely interest you, but it illustrates the unfairness of denying London students the opportunity of becoming M.D.'s.

The question of preventing graduates from using degrees who had been expelled from the register was left for the president to represent to government last session, and Sir William stated what he had done. The universities seem now to have come to the conclusion that they should have power to deal with their black sheep. If they consent to legislation in this sense, there is hope for a bill indorsed by all the licensing bodies.

The annual meeting at the Royal College of Surgeons has afforded plenty of material for jesting at professional gatherings. The claim of members to representation was brought forward in a mild resolution moved by Mr. Joseph Smith; but little is expected to come of it, though Surgeon-General Ince, who is nothing if not amusing, urged the council to give members a vote on the ground that, like the baby in the soap advertisement, they will not be happy till they get it, and when they do they cannot use it. Several speakers pointed out that members lost all interest in the college from the consciousness that they were cold-shouldered by its governing body.

The council scored by its declaration that the question of a gown for members had been referred to a committee. So the question of clothes is to take precedence of rights. Dr. Alderson seemed quite unconscious of the humor of the situation when he gravely recommended a white gown with a purple border like a toga to be worn at operations and social functions. It borders on broad farce for the annual meeting to be thus occupied, but it has added to the fun at social functions since.

A less reverent member says, "Why not utilize the dissecting-dress?" another suggests a night-gown. I asked a fellow what right the council had to institute a gown. He said: "None at all; but every man has the right to dress as he likes, provided he observes decency." And for his part he thought tar and feathers would do very well for both fellows and members.

Sarcoma has lately received a good deal of attention at the societies. Thus, besides the discussion at the Medico-Chirurgical Society noticed in my last, it came up at the Pathological as well as at the Clinical Society. At the former Mr. T. D. Lister showed a specimen of sarcoma of the right auricle of the heart associated with the same disease in the right kidney, taken from a child aged four years. The growth was round-celled with considerable extravasation of blood. Death occurred within a month of the first complaint of abdominal pain. Mr. Lister thought the primary growth was in the heart.

Mr. Carwardine communicated a brief account of a tumor of the rectum, which clinically appeared to be epithelioma, but the sections showed it to be a spindle-celled sarcoma with some large round cells and giant cells. Very few such cases have been recorded and their authenticity has often been doubted, but Mr. Carwardine thinks his specimen proves their reality. Mr. Barker mentioned a case of primary sarcoma of the colon, and Mr. Boyd one of the rectum. Mr. Targett looked upon such cases as rare except as secondary to lympho-sarcoma. The type generally was spindle-celled. Dr. Hunter mentioned a case of round-celled sarcoma of the cæcum with disseminated growths in various parts. Dr. Rolleston did not consider round-celled sarcoma rare in the digestive tract, nor did Dr. Voelcker, who told of a case of spindle-celled sarcoma of the ileo-cæcal valve and one of melanotic sarcoma of the rectum.

The subject was introduced at the Clinical Society by Mr. Howard Marsh relating a case of primary sarcoma of the synovial membrane of the knee-joint. The patient, a man, twenty-one years of age, was admitted in September, 1892, with a swelling of fourteen months' duration which was thought at first might be due to tuberculous disease. When cut into, it was found to be entirely in subsynovial tissue and of the nature of new-growth. It was removed with a zone of surrounding tissue and found to be a mixed spindle- and round-celled sarcoma. Recurrences took place in March and December, 1895, August, 1896, October and lastly December, 1897. The new growths on the four former occasions were removed, but on the last amputation was performed. On examining the joint, a growth the size of a bantam's egg was found spring-

ing from the synovial membrane at the back of the joint, and there was a smaller mass extending forward into the joint between the condyles.

Mr. Marsh said he had not met with another case of primary sarcoma of synovial membrane. The history extends over six years, the disease remaining local, and the patient is now well.

Mr. Hutchinson, Jr., referred to a case of a boy, aged ten, who had a fibro-sarcoma growing from the posterior ligament of the knee, in which, after several recurrences, he had amputated at the hip with a fatal result. He thought there were cases of regional sarcoma, and mentioned a case affecting the abdominal wall recurring until the wall was covered with scars and new growths. He asked if Mr. Marsh's case was fibro-sarcoma, and was answered that it might fairly be so described. These growths are probably such as Sir James Paget has called recurrent fibroids. Mr. Marsh now has under his care in the hospital a man with a similar growth of the cheek which has been excised so many times that it is thought no further operation is feasible. The president (Mr. Langton) recalled a case recorded by Sir J. Paget affecting the foot. Twelve or more recurrences were operated on with ultimate recovery.

At last the East London Water Company has begun to extend the hours during which some of its customers can have a supply. I say *some*, because only a part of its district at present receives the increase, and it will not be general until next Monday or Tuesday. By then it is expected the water will be on for eight hours out of the twenty-four. For above a quarter of a year there has been a shortage, part of the time to a most distressing extent; but the company still considers itself entitled to the quarter's payment. In fact, to one of the customers who objected to an extra charge for a bath during that time on the ground that he had never had enough for other uses, the company replied that it had incurred great expense through the drought and could not afford to make a reduction!

The other companies have taken steps to promote bills in Parliament. They will join to obtain authority for making intercommunication beween the pipes. Some of them ask to be allowed when necessary to take more water from the Thames. All ask for this whenever the local government board may consider it necessary. Meantime the Royal Commission on the supply has resumed its sittings after a long interval, and we shall have to wait for its report. The county council is promoting bills enabling it to buy out the companies and to obtain a further supply from Wales.

Mr. Mansell-Moullin, as the new president of the Roentgen Society, entertained the members on Tuesday evening at a conversazione, when demonstrations were given illustrating the uses of the *x*-rays, and the ex-president, Professor Sylvanus Thompson, showed experiments with the Tesla oscillator. This juvenile society is growing satisfactorily.

Situation of Pain in Intra-Abdominal Conditions.—The small intestines are abundantly supplied by and intimately associated with the great sympathetic ganglia. The fickle-minded sympathetic nerves have no geographic sense; hence a pain coming from an obstruction in any part of the small intestine is expressed in the solar plexus of the sympathetic or superior mesenteric ganglia. This holds true with other intra-abdominal conditions. In a large percentage of cases of appendicitis a careful review of the history of the pain will show that it was first expressed above the umbilicus in the region of the superior mesenteric ganglion.—Eastman, *Denver Medical Times.*

THE ORIGIN OF THE PLAGUE IN VIENNA.

To the Editor of the Medical Record.

Sir: In an editorial of the Medical Record of October 29, 1898, and in an article under "News of the Week" entitled "The Plague in Vienna," the first plague victim is referred to as "Dr. Nothnagel's assistant" and as "an assistant in the laboratory." Herr Barisch was not an assistant, but was the laboratory "Diener," or janitor. In the European laboratories these "diener" are generally men of no particular culture or training, who are employed in a bacteriological laboratory, for example, to care for the animals, to clean and sterilize Petri dishes, prepare culture media, etc. They acquire a certain amount of skill and knowledge, and likewise the contempt bred of ignorant familiarity. One report from Vienna stated that this "Diener" was suspected of smoking in the laboratory, and another report that he had the habit of biting his nails—both naturally dangerous habits in the company of bacilli. Dr. Müller, Nothnagel's assistant, and the sister of charity were infected from Barisch before it was known that he was sick with the plague.

The unfortunate affair cannot be considered as a proof that scientific investigation in scientific hands is a source of danger to the health of communities, but rather as a striking example of the criminality of allowing persons who lack the proper training and intelligence to expose themselves in any way whatsoever to the invisible executors of nature's sanitary laws.

J. Edwin Sweet, M.D.

Giessen, November 19, 1898.

"HAWAII FROM A HEALTH POINT OF VIEW."

To the Editor of the Medical Record.

Sir: In your last week's issue, I observe a communication from Dr. F. R. Day, member of the Hawaiian board of health, criticising your editorial, "Hawaii from a Health Point of View," of October 15, 1898. In it the writer impugns the correctness of certain statements made by me in a communication to the Medical Record of April 27, 1889, to which reference is made in the editorial, and makes the following complimentary allusion to myself: "If Dr. Prince A. Morrow is the best-informed person on the subject, then I am sorry to say that he knows very little about the conditions as they exist here to-day. He describes them as they were in the first half of the present century, and we are led to infer that the same conditions prevail at the present time."

It is evident that Dr. Day has not read my article to which reference is made, or he would not have fallen into such an error. The article in question was written years before the advantages or disadvantages of "Hawaii from a health point of view" had any practical interest to the people of this country. It was entitled "Causes of the Depopulation of these Islands, the Demographic Effects of Introduced Diseases," etc., and was devoted to a study of the causes which have led to the rapid decay and death of a population which in a little more than a century had dwindled down from four hundred thousand to less than forty thousand. Prominent among these causes I placed the introduction in a virgin soil of diseases peculiar to civilization, favored by certain conditions which I considered in detail, but will not occupy your space by quoting here.

As examples, I instanced the extraordinary mortality of syphilis, introduced by Captain Cook's men; of measles, introduced in 1849; of small-pox, introduced in 1853, etc. I stated that "the rapid spread

and excessive mortality of the acute infectious diseases were attributed to the intimate social relations of the natives, their disregard of precautions, and their free use of cold water upon the first accession of febrile symptoms." I also called attention to the remarkable influence of hereditary immunity already exhibited in the production of a milder type of disease and diminished mortality. I am glad to see that Dr. Day, however unintentionally, has confirmed these statements in every particular. He says: "It is true that in the early part of this century contagious diseases wrought sad ravages among the native population. It is true that measles and whooping cough had a terrible mortality in 1849, because the natives in their ignorance persisted in bathing in the sea and the cool mountain streams to allay the accompanying fever. It is true that small-pox slew thousands in 1853 for similar reasons, and because they had not the protection of vaccination."

He also confirms my testimony in regard to the modification in the type of disease seen at the present day: "During the past five months quite a general epidemic of measles has prevailed, brought here by the United States troops; only two persons have died of the disease—one in August and one in October; and yet Dr. Morrow says 'The mortality was excessive, almost every case terminating fatally.'"

In regard to this manifest perversion, I can only say that it is hardly ingenuous, or even honest, on the part of Dr. Day to quote a statement of mine which distinctly referred to an epidemic of measles in 1849, of acknowledged virulence, and apply it to a mild epidemic in 1898, and which occurred nearly ten years after the article containing the statement had been published.

There is another question raised in Dr. Day's criticism of your editorial, which, in view of the recent annexation of the Hawaiian Islands by the United States, has a special interest for the people of this country. He says: "In regard to leprosy, your quotations are equally misleading. The idea that ten per cent. of the native population is afflicted with leprosy is simply preposterous." He does not believe that there are three hundred lepers at large in the whole group.

In estimating the value of Dr. Day's testimony, we must appreciate his possible official bias as a member of the Hawaiian board of health, whose policy has always been to minimize the extent and danger of the national evil. In looking over the biennial reports of this board, we find the same optimistic opinion—"Leprosy is decreasing"; "There are few lepers at large"—expressed for twenty years past, only to be contradicted by the never-ending procession of lepers to Molokai. The number consigned to the settlement each year is a varying quantity, depending upon the more or less vigorous policy of the board of health and the activity of the agents of the board in identifying and apprehending the lepers. In the report of the board of health, March 31, 1890, we read (page 13): "According to the best information obtainable, there are at date of this report about one hundred persons supposed to be affected by the disease still at large, who have not been before the examining board." And yet the statistics of the leper settlement show that in 1890 there were 202 admissions; 1891, 143; 1892, 109; 1893, 211; 1894, 128; 1895, 106; 1896, 146; 1897, 124—nearly 1,200 altogether; or to take the first five years after this estimate was made, 1890 to 1894 inclusive, there were 793 admissions. Now leprosy does not develop *d'emblée*: it may preserve its incognito for three to five years, or even longer, before it is compelled to declare its identity. It is probable that these 793 persons, and many more sent to the settlement, and many more never apprehended, were lepers on March 31, 1890, when the board of health reported that there were only about 100 lepers at large.

As bearing upon this point, I may be permitted to quote from my article on "Leprosy and Hawaiian Annexation" (*North American Review*, November, 1897): "We may now inquire what has been the result of thirty years' crusade against this gigantic evil, which is slowly sapping the life-blood of the Hawaiian race. Is leprosy on the increase, or is it in process of extermination? Taking the records of the leper settlement as a basis of comparison, there would seem to be no hopeful signs of its extinction. In the first twenty years of its establishment, to January 1, 1886, 3,076 lepers were sent to the settlement; in the next ten years, 2,049. This large relative increase of admissions may not be due to an actual increase in the number of lepers in the islands, but to more active and vigorous methods of segregation. Again, in the first-mentioned period the number of lepers at the settlement ranged from 200 to 800, the average being about 500. In recent years the number has varied from 1,000 to 1,200.

"As bearing upon the question of the increase or decline of leprosy, it is interesting to compare the opinions of the government physicians which appear in the last reports of the board of health. A few of them assert that there is as much leprosy as ever; most of them, however, sound a more hopeful note, and declare there are few or no known cases of leprosy in their respective districts. Notwithstanding this optimistic view, the fact remains that the annual consignment of lepers to the settlement shows little diminution in number. This yearly increment of fresh admissions which goes to recruit the ranks of the rapidly dying population of Molokai is made up of previously undiscovered cases. All the indications point to the existence of a vast deal of latent leprosy, which, as the disease develops into a recognizable form, must continue for many years to come to furnish a constantly recurring series of subjects for the leper colony."

As regards the actual *percentage* of lepers in the Hawaiian race, it is, for obvious reasons, an unknown and unknowable quantity. Any one familiar with the natural history of leprosy must recognize that it is impossible to compute the number of lepers in any country or community by the methods ordinarily employed for the detection and registration of disease. Only advanced cases are recognizable by inspection. In every country where leprosy is endemic, a large number of persons are infected months and years before it is known to themselves or others. The disease may exist, and commonly does exist, for years without visible external signs in the face or exposed parts. Now it is precisely by ignoring these incipient cases, or treating them as a *quantité négligé*, that the Hawaiian board of health has been led into promulgating its *perennially* hopeful but perpetually disappointing prognostications as to extinction of leprosy in these islands. These cases are sure to develop, and sooner or later furnish a contingent to the population of Molokai.

Again, the rigorous policy of segregation adopted by the board of health is indirectly a cause of its partial failure. The leper settlement is not a popular institution among the Hawaiians, and a leper is not apt to present himself for examination when he knows that a verdict of leprosy carries with it a sentence of life-long imprisonment, from which death is the only release. As a consequence, lepers use every possible precaution to conceal all incriminating evidence of the disease, and when concealment is no longer possible they are often secreted and cared for by their relatives and friends.

With a knowledge of these facts, I do not believe with Dr. Day that Hawaii is freeing herself of leprosy

with "the most gratifying results" and "with a thoroughness which hardly needs any assistance from the United States." I would, however, by no means detract from the great value of the work done by the Hawaiian board of health. Without its system of segregation, however imperfectly carried out, I believe that the leper population of these islands would be two or three times as large as it now is; and I take pleasure in testifying, as I have often done before, that in no country has the unfortunate leper been treated with so much humanity and with such liberal provisions for his comfort as in Hawaii.

PRINCE A. MORROW, M.D.

NEW YORK, December 5, 1898

THE PORTABLE BATH TUB.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: In the November 19th issue of the MEDICAL RECORD, Dr. C. J. MacGuire published an account of "A Convertible and Portable Bed-Bath." This tub resembles very closely one described and figured by me in the *Boston Medical and Surgical Journal* for November 19, 1896, which I had made for use in the Massachusetts General Hospital, and has been used there and to some extent in private practice in Boston ever since. Both are made of rubber sheeting with sides to be blown up with a bicycle pump. In fact there is practically no difference between the two tubs. Like Dr. McGuire, I have found the tub of great benefit and very easily managed.

CHARLES W. TOWNSEND, M.D.

BOSTON, MASS.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending December 10, 1898:

	Cases.	Deaths.
Tuberculosis	162	157
Typhoid fever	33	15
Scarlet fever	134	6
Measles	117	3
Diphtheria	151	35
Laryngeal diphtheria (croup)	15	7
Cerebro-spinal meningitis	0	2
Chicken-pox	57	0

The Showman in Medicine.—The *Indian Medical Gazette* says: "Do medical men at home thirst for yellow journalism in their medical newspapers? Are they carried away by an ecstasy of admiration for Barnum's show, which is now perambulating the provinces? The spectacle of the talented editor of *The Practitioner* offering his readers as a *bon mot* the stale old student's story of how the features of a patient's fundament made a greater impression on some celebrated surgeon (Syme, in this instance) than his face is pitiful; but what are we to think of the hundreds of practitioners at the Edinburgh meeting of the British Medical Association, who received with applause a kinematographic representation of two surgical operations performed for the purpose in record time by a Parisian surgeon? The patient's life may or may not have been jeopardized to provide this show, and when obtained it may have been a very pretty sight as well as a novel advertisement for the operator; but surely its exhibition was in execrable taste, and the council should never have allowed such a prostitution of surgery to occur. A phonographic representation of the sounds accompanying anæsthesia and of the bystanders' remarks should have been added to complete the display of bad taste."

Bubonic Plague.—The report of the late Dr. Otto Muller, based on the result of the scientific expedition to Bombay for the purpose of study of the plague, has just appeared. When Dr. Muller arrived in Bombay, the average daily mortality was reported to be one hundred cases a day. In reality, however, the mortality was much higher, as a great many were secretly buried at night, especially in those cases which had not been reported to the authorities. This was about February 20, 1898. Up to this time, exact scientific examinations were not known. The attending physicians in Bombay were so busy with their patients that no time was left for their scientific investigation. Through the courtesy of Dr. Choksap, the physician in charge of the Arthur Road hospitals, both clinical and cadaveric material was placed at the disposal of Dr. Muller's commission, and thus the scientific work began. In all, about seventy exact clinical histories were utilized, and of these forty-seven were investigated post mortem; thus detailed bacteriological and anatomical results were attained. The result of the pathological bacteriological studies proved the disease to be of a distinctly infectious nature. Although several varieties of the disease were met with, the most frequent form found in this investigation was the septicæmic-hemorrhagic form. A peculiar characteristic phenomenon was the formation "bubo" in the axilla, in the cervical region, in the inguinal, which was surrounded by a large amount of œdema. In the various organs hemorrhages were found, and in every case there was a characteristic tumor of the spleen. The various lymph channels of the body seemed to show a distinct evidence of participation, more frequently acute degenerative changes of some of the most vital (internal organs) of the body. A second variety showed distinct emboli in the lungs, liver, and kidneys. In a third form there was a primary bubonic pneumonia without any participation, or very little, of the lymph ducts or glands. The disease invades the body in the majority of cases through the skin. In a second series of cases the infection gains an entrance to the body, without doubt, through the lungs. In a third variety of cases (minority), the tonsils and the roots of the hair offer points of entrance for the disease. In not one single case could the gastro-intestinal tract be shown as the point of entrance. In a series of cases in which death did not take place, in a few days a softening of the lymph glands of buboes was noticeable, which resulted in a very profuse suppuration. The clinical picture is the following: A dull, constant headache, with delirium, dizziness, imperfect articulation. Patients able to get out of bed and walk seem to tumble from side to side, as though in an alcoholic stupor. The disease commences without any premonitory symptoms, with a sudden high fever, at times chills, severe headache and dizziness, and in some instances vomiting. The disease seems to be characterized by the development of painful and enormous buboes and extreme cardiac weakness. The buboes, in the beginning very small, are noticeable from the first. In some rare cases they may not show activity until several days after the disease has thoroughly developed. On the ninth day of the disease they either result in suppuration or commence to be absorbed. Patients having glandular enlargements of the cervical and maxillary glands present the worst forms of the disease. Death results from the rapidly approaching heart failure. The frequency of the pulse is from 160 to 180, and in many cases reaches as high

as 200 a minute. In some instances consciousness was retained to the last minute; other patients were constantly delirious from the beginning. A peculiarity noticeable in many cases was the desire of patients to leave the bed and run away. Subcutaneous hemorrhages were noticeable prior to death, whereas in the beginning the skin was clear and dry. Vomiting and also diarrhœa, while present, were not noticeable at stated intervals. The ophthalmoscopic examination was always negative. The diagnosis is very easy in typical cases. The difficulty in making the diagnosis was presented in those cases in which the buboes were either absent, as in bubonic pneumonias, or in those cases in which the buboes appeared later in the disease. The positive diagnosis rests on the bacteriological examination of the sputum and the course of the disease. The period of incubation is from four to five days. The pest bacillus is the etiological factor and cause of the disease, and is very easily found. The germs are found in the secretions of the various organs, in the spleen, in the glands. The latter show more microorganisms in this disease than in any other infectious disease known. The bacilli can be found in the blood of the living, in the sputum of a case of bubonic pneumonia, and in the pus of the bubo. When we inject animals with the pest bacilli, similar changes to those found in man can be produced. Rats seem to be very susceptible to cultures of these bacilli. Therapeutic results with pest serum were not noticed. The disease is disseminated from patient to patient, or from animal to man, or from clothes or dust, infected with the pest bacilli, and in poor hygienic conditions. This explains the cause of the disease, and proves that the most rational form of treatment consists in the isolation of patients afflicted with the bubonic disease and the best form of disinfection of the excreta. It it impossible to believe that the disease can be carried great distances by means of infected clothing, but it is possible that the disease is transmitted by means of rats, which abound on all ships. Dr. A. Marmorek, chief of the Pasteur Institute in Paris, of antistreptococcus fame, has been experimenting recently with bubonic serum, and the results of his work are being carefully watched.

The Manufacture of Cripples to be let out as decoys for the alms of the charitable is said to be a flourishing industry in some parts of the Pyrenees. It would appear that this is not one of the many inventions which make the "so-called nineteenth century" famous in the records of the ages. Fabricius Hildanus, in his chapter on preternatural tumors, relates the following story: "In the year 1593 there was seen in Paris a boy of fifteen or eighteen months, the skin of whose head was so much stretched that it greatly exceeded the size of a natural hydrocephalus. The father and mother of the child carried him about from place to place as a monstrosity. As the concourse of people was great, the magistrate suspected that there was some fraud in the matter and clapped the father and mother into prison. Being put to the question (a euphemism for the torture) they confessed their crime; to wit, that they had made on the top of the head right down to the muscles a small hole, through which, having pushed a syringe, they blew air between the skin and the muscles in such a fashion that, little by little and repeating the process every day, they had made the swelling. The syringe being taken out, they stopped the hole with wax or something of the kind." —*British Medical Journal.*

The Climate and Temperature of Porto Rico.—Porto Rico, although small, is undoubtedly the most healthy of the islands which we have wrested from Spain, and in those happy days to come, when by the help of American money and engineering skill the present decidedly unsavory condition of matters hygienic has been rendered sanitary and wholesome, the potentialities of the place as a health resort will doubtless be fully recognized. From accounts received we learn that, with the exception of imported disease, Porto Rico even now, despite its rudimentary drainage and water system, is healthy to a degree. Although the temperature is high in the summer months, it is by no means oppressive; there is a constant daily sea breeze, the nights are cool, and insects—those pests of tropical lands—may almost be said to be conspicuous by their absence. Appended is a temperature chart of Porto Rico for September, taken with great care at the camp of the first regiment, United States volunteer engineers, one mile west of Ponce, at an altitude of three hundred feet, by Lieut. and Surg. Charles J. Proben. This will be of interest to the many friends of the regiment, and should also tend to clear from the minds of many Americans the wrong impression which has been created by the reports of the insalubrity of Porto Rico.

REPORT OF TEMPERATURE AT CAMP, FIRST REGIMENT, UNITED UNITED STATES VOLUNTEER ENGINEERS, WEST OF PONCE.

Date.	6 A.M.	9 A.M.	12 M.	3 P.M.	7 P.M.
September 3d	73	86	90	88	76
September 4th	70	86	88	84	80
September 5th	73	86	90	87	78
September 6th	73	88	90	88	76
September 7th	68	90	86	87	78
September 8th	71	88	85	86	84
September 9th	75	89	90	88	85
September 10th	75	89	90	88	86
September 11th	73	92	93	90	86
September 12th	76	88	90	88	86
September 13th	73	86	93	84	86
September 14th	75	90	92	89	82
September 15th	73	93	91	90	84
September 16th	74	79	86	78	76
September 17th	76	84	88	88	80
September 18th	76	87	91	84	78
September 19th	72	82	88	81	76
September 20th	68	88	96	80	78
September 21st	70	91	92	82	78
September 22d	71	78	76	72	72
September 23d	70	74	75	72	70
September 24th	74	82	86	84	79
September 25th	72	86	92	88	80
September 26th	68	88	92	86	80
September 27th	70	89	93	90	89
September 28th	70	88	94	82	78
September 29th	70	86	91	94	80
September 30th	72	84	92	80	76

Winds are usually east; southeast after 8:30 A.M., continuing all day till sundown. In the wet season rains occur daily, usually in afternoon about three or four o'clock, as a rule accompanied by sea breeze (east-southeast).

There is a difference of from twelve to eighteen degrees between the temperature in the shade and that in the direct rays of the sun: September 6th, 12 M., temperature in the sun, 104° F.; September 20th, 12 M., temperature in the sun, 113° F.

The lowest temperature occurred on September 22d and 23d, when it rained incessantly for two days.

The average mean temperatures are as follows: 6 A.M., 72⅔ F.°; 9 A.M., 86⅓° F.; 12 M., 89⅔° F.; 3 P.M., 85° F.; 7 P.M., 80° F.

Highest temperature recorded, September 20th, 12M., 96° F.; lowest temperature recorded, September 7th, 6 A.M., 68° F.

A Microbe-Proof House.—The following description of a novel dwelling was given in the *Leeds Hospital Magazine:* "The oddest domicile on earth is that recently erected at Yokohama by an eminent German bacteriologist. It is a microbe-proof house built of glass blocks. There are no window sashes and the doors when closed are air tight. The air supply is forced into the room through a pipe and is filtered through cotton wool to cleanse it of bacteria. To insure further sterilization the air is driven against a glycerin-coated plate of glass, which captures all the microbes the wool spares. The few microbes brought into the

house in the clothes of visitors soon die in the warm sunlight with which the house is flooded. The space between the glass blocks, of which the house is built, is filled with a solution of salts, which absorbs the heat of the sun so that the rooms are much cooler than those protected by the thickest shades. In the evening the interior is heated by the salts, radiating the heat they have absorbed during the day."

"IN THE SPRINGTIME YOUNG MEN'S FANCIES."

All nature wakes, spring flowers blow,
Thoughts turn to Aphrodite.
And balmy south winds whisper low,
"Hydrarg. chloridum mite."
—*Southern Medical Record.*

Men of the Name of Smith.—At some inquests recently held at St. Bartholomew's Hospital the name of Smith was well in evidence. Two of the deceased persons were John Smith and Charles Smith, but not in any way related. In the first case death was due to being run over by a cab driven by Josiah Smith, and two relatives of the deceased, named Smith, were present to hear the evidence, besides a brother of the cabman. In the case of Charles Smith both parents were present. Inspector Walter Smith of the city police was also present, and two of the jurymen were also of the same surname. Thus in all there were no less than eleven Smiths present.—*Lloyd's Weekly Newspaper.*

Hypnosis as practised by the ambulance surgeons of this town promises soon to obviate the necessity of police aid in "taking in" patients wild from the effects of insanity or of such natural causes as overindulgence in ardent potations.

Health Reports.—The following cases of small-pox, cholera, and plague have been reported to the supervising surgeon-general of the United States Marine Hospital service during the week ending December 10, 1898:

		Cases.	Deaths.
Small-Pox—United States.			
Alabama, Mobile	November 28th	1	
Colorado, Denver	November 26th	2	
Fort Collins, Larimer County	November 26th	3	
Trinidad, Las Animas County *	November 26th	1	
Georgia, Jasper County	January 14th to November 26th.	2	
Jones County	January 14th to November 26th.	300 (est.)	4
Iowa, Hamburg, Fremont County	November 26th	2	
Lacona, Warren County	November 26th	2	
Michigan, Detroit	December 3d	Present.	
Ecorse Township	December 3d	Present.	
Ohio, Cincinnati	December 2d	1	
Texas Laredo	December 6th	..	1
Laredo	December 7th	4	
Virginia, Norfolk	November 30th	5	
Norfolk	December 5th	4	
Norfolk	December 6th	2	
Norfolk	December 7th	2	

* Origin of the disease in the localities named is New Mexico.

Small-Pox—Foreign.			
Africa, Lorenzo Marques	September 1st to 30th	3	3
Belgium, Antwerp	November 5th to 12th	3	6
Brussels	November 12th to 19th	..	1
Brazil, Rio de Janeiro	October 15th to 21st	13	3
Ecuador, Guayaquil	November 5th to 12th	..	1
England, Liverpool	November 12th to 18th	2	
Southampton	November 5th to 12th	1	
Russia, Moscow	November 5th to 12th	17	5
Odessa	November 4th to 10th	1	1
St. Petersburg	November 5th to 12th	4	2
Turkey, Constantinople *	October 17th to November 7th.	..	55

* Small-pox is reported as raging fiercely in Constantinople. Vaccination does not appear to be a protection. Persons vaccinated only eighteen months previously are attacked. The authorities are doing their utmost to check the epidemic.

Yellow Fever.			
Mexico, Mexico City, one case of yellow fever.			
Cholera.			
India, Bombay	November 1st to 8th	..	1
Calcutta	October 8th to 22d	..	5
Madras	October 22d to 28th	..	5
Madras	October 28th to November 4th.	..	14
Plague.			
Austria, Vienna	October 29th to November 5th.	..	1
India, Bombay	November 1st to 8th	..	63
Madagascar, Tamatave	November 30th	Present.	

On November 26th, plague was reported present in San Francisco, Cal., in the Chinese population. The report has been officially denied.

Virtues of Spinach.—Prominent specialists claim that spinach is the most precious of vegetables, on account of its medicinal and strengthening properties. The emollient and laxative virtues of spinach, owing probably to the salts of potassium it contains, have been long known. It is excellent for the liver, and as a consequence freshens the complexion. Some vegetables contain a relatively large dose of iron. According to Bouissingault, the proportion is 0.00074 of iron in 100 parts of French beans, 0.00083 in 100 parts of lentils, and in spinach very much larger. The chemist Binge has proved that spinach and yelk of egg are proportionately richer in digestible and assimilable iron than all the most renowned ferruginous remedies. Its great value and growing importance are shown in the fact that spinach is already an active ingredient in several new and very salable tonics.—*Sanitary Record.*

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

DISEASES OF THE SKIN. By Malcolm Morris. 12mo, 589 pages. Illustrated. Second Edition. Lea Brothers & Co., Philadelphia.

DEGENERACY. By Dr. E. S. Talbot. 12mo, 372 pages. Illustrated. Walter Scott, Limited, London. Price 6s.

DISEASES OF THE HEART AND AORTA. By Dr. G. A. Gibson. 8vo, 932 pages. Illustrated. The Macmillan Company, New York. Price, $6.00.

ATLAS OF EXTERNAL DISEASES OF THE EYE. By A. M. Ramsay. Quarto, 195 pages. Illustrated. The Macmillan Company, New York. Price, $20.00.

HUMAN ANATOMY. Edited by Henry Morris. Royal 8vo, 1,274 pages. Illustrated. Second Edition. P. Blakiston's Son & Co., Philadelphia. Price, $6.00.

THE PRACTITIONER'S MANUAL. By Dr. C. W. Allen. 8vo. 851 pages. William Wood and Company, New York.

ADULT DIET LIST. By Dr. C. S. Millet. Price, 25 cents.

A PRIMER OF PSYCHOLOGY AND MENTAL DISEASE. By Dr. C. B. Burr. Second Edition. 8vo, 116 pages. The F. A. Davis Company, Philadelphia.

THE PHONENDOSCOPE. By Dr. A. Bianchi. 8vo, 77 pages. Illustrated. George P. Pilling & Son, Philadelphia. Price, 50 cents net.

TEXT-BOOK OF OBSTETRICS. By Dr. B. C. Hirst. 8vo, 846 pages. Illustrated. W. B. Saunders, Philadelphia.

DISEASES OF CHILDREN. By Dr. D. Williams. 8vo, 634 pages. Illustrated. Lea Brothers & Co., Philadelphia.

ACROMEGALY. By Dr. Guy Hinsdale. Royal 8vo, 88 pages. Illustrated. William M. Warren, Detroit. Price, $1.50.

RENAL SURGERY. By Dr. Henry Morris. 8vo, 288 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia. Price, $2.00.

TRANSACTIONS OF THE CLINICAL SOCIETY OF LONDON. Vol. XXXI. 8vo, 385 pages. Illustrated. Longmans, Green & Co., London.

SEXUAL INSTINCT. By Dr. J. F. Scott. 8vo, 436 pages. Illustrated. E. B. Treat & Company, New York. Price, $2.00.

TRANSACTIONS OF THE AMERICAN ORTHOPEDIC ASSOCIATION. Vol. XI. 8vo, 467 pages. Illustrated.

TRAITÉ DE CHIRURGIE CLINIQUE ET OPÉRATOIRE. Par A. Le Dentu et Pierre Delbet. Vol. VII. Maladies de la mamelle, de l'abdomen, du peritoine et de l'intestin. 8vo, 844 pages. Illustrated. J. B. Baillière et Fils, Paris.

CHIRURGIE DE L'UTÉRUS. Par Henri Delagénière. 8vo, 467 pages. Illustrated. Institut de Bibliographie Scientifique. Paris.

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Original Articles.

THE EPIDEMIC OF FEVER WHICH PREVAILED AT KEY WEST, FLA., AUGUST, SEPTEMBER, AND OCTOBER, 1898.[1]

BY JOHN W. ROSS, M.D.,
SURGEON, UNITED STATES NAVY.

Origin and History.—The disease under consideration was first recognized and declared epidemic about the middle of August, upon the occasion of its breaking out in the marine barracks, near the centre of the city. It is directly traceable to the steam transport *Iroquois*, which arrived at Key West on the 5th of July, loaded with wounded from Santiago de Cuba.

A distinguished surgeon of the regular army (Major Gorgas), recently invalided home from Santiago, where he had been for several months in command of a large hospital at Siboney, has written me that the large majority of fever cases at Santiago were much like those at Key West; that they were not yellow fever; no one considered them dengue; most considered them malarial; that the mortality was almost *nil*, but that there were a number of deaths from yellow fever.

This officer had yellow fever a number of years ago, and has treated it frequently since. At the close of our epidemic I sent him a description of the fever which had prevailed here, together with clinical charts of a number of the cases.

On July 5th, three hundred and sixty wounded men and officers from the first fighting at Santiago were

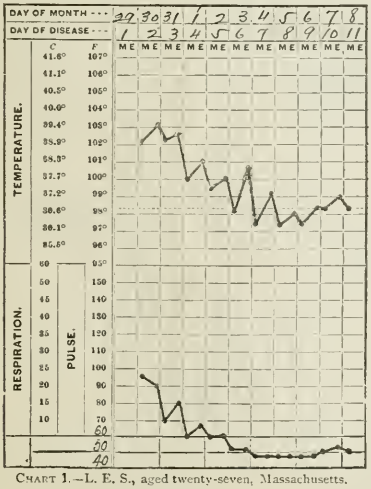

CHART I.—L. E. S., aged twenty-seven, Massachusetts.

landed in Key West by the *Iroquois* without any quarantine detention, upon the certificate of the ship's surgeon that there was no sickness on board. The enlisted men were sent to hospital. Three officers and two correspondents went to a hotel. One of these correspondents (Mr. J. C. K——) was taken ill on the 7th of July. He was laid up in the hotel for about ten

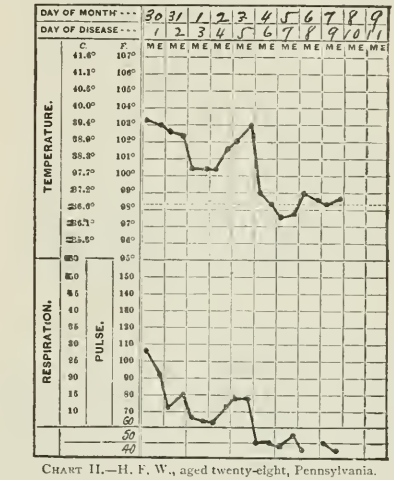

CHART II.—H. F. W., aged twenty-eight, Pennsylvania.

days, during a portion of which time he had fever. He left for the North July 17th. He is said to have been very weak at the time of his departure. His attending physician considered his illness due to heat prostration, from which he had suffered at Santiago.

A colored chambermaid, who nursed the correspondent and took care of his room, was attacked with fever about two weeks after the beginning of his illness. Ten or twelve days later three or four other cases occurred in rapid succession in the hotel. From that time on there were almost constantly cases of the disease in the hotel, until the 10th or 15th of September. The manager, every employee, and three guests—twenty-two persons all told—had it.

During the time that this outbreak was running its course, very few guests were in the hotel. It had been crowded to overflowing with military officers and newspaper correspondents, the latter largely predominating, from the beginning of the Spanish-American war to about the middle of June, when they all left for Santiago.

In the month of July, Second Lieutenant N——, United States Marine Corps, had the day's duty, every alternate day, at the marine barracks, near the hotel. He spent much of his spare time at the hotel, that being the principal rendezvous for military people in and about Key West. Lieutenant N—— slept one night out of every two in the barracks, and the other nights in his room near by. July 31st, he was taken down with a fever, and had, according to Assistant Surgeon Marcour, who treated him, a severe attack, resembling closely the fever which became epidemic afterward. He was discharged from the sick list August 11th, but was not strong enough to resume his duties until August 13th. Between these two dates he spent his afternoons in the barracks.

[1] Being a report to Surgeon-General W. K. Van Ruypen, United States Navy, and published with his permission.

I learned of three other young military frequenters of the hotel, who had rather severe attacks of the prevailing fever during the month of August. Through the courtesy of the physicians who attended them, I

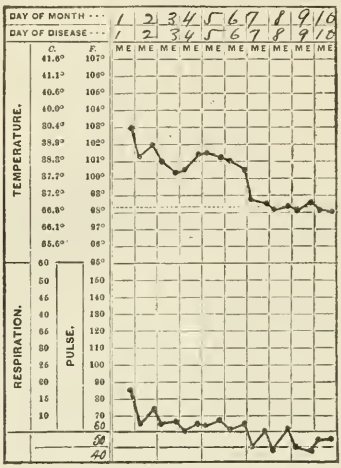

Chart III.—E. C., aged twenty-two, Massachusetts.

obtained the records and clinical charts of two of these cases (Nos. 19 and 20).

On the 13th of August the fever broke out in the marine barracks, formerly a cigar factory, where fifty-four enlisted men had been, for two hot Key West months, crowded together. In their principal sleeping- and living-room, moderately well ventilated, each man had an average air space of less than five hundred cubic feet. The first sergeant states that this room was very warm and close at night—almost unbearably so on rainy nights when the windows had to be closed. From the 13th to the 17th of August, inclusive, ten of these men were attacked with fever. All the marines, except the ten sick and thirteen others presenting suspicious symptoms, were promptly removed from the barracks to a camp outside the city. The thirteen suspected men were, at the same time, quartered in a house adjoining the barracks. After this no other cases occurred among the men in camp. None occurred among the suspects until August 30th, an interval of twelve days. From August 30th to September 7th inclusive, four of the suspects were attacked with the fever (charts Nos. 1, 2, 3, and 4). September 8th, the whole of the marine command, fifty-two men rank and file, including Assistant Surgeon Marcour, sailed for New York. Four patients, not well enough to travel, one hospital steward, and one first sergeant, were left behind in the barracks. The hospital steward went down with the fever September 26th, eighteen days after beginning to nurse Private Barnes (chart No. 4). Prior to being detailed as nurse, he had been prescriptionist, fairly isolated from the infected portion of the building. The first sergeant, the last of the marines, fell ill October 5th (chart No. 9).

During the third week of August, about the time the fever appeared in the marine barracks, cases began to occur in other parts of Key West, and by September 1st the entire city, with the shipping at the wharves, had become infected.

Through the *Iroquois* is one only of the many ways that the epidemic fever probably got into Key West. There seems to be no reasonable doubt that the same fever prevailed in Cuba and at Tampa prior to and at the time of its appearance at Key West. There were numerous opportunities about that time for its importation here from Santiago and other points in Cuba by our smaller war-vessels, which were constantly passing to and fro, Key West being the naval base. I know of several instances where our blockading vessels, immediately after having had Cubans (some of the latter ill with "calentura") on board, returned to Key West, where they underwent no quarantine detention. One of these vessels carried some insurgents, together with their clothing and bedding, from one Cuban port to another. There was, prior to the middle of August, constant and unrestricted intercourse between Key West and Tampa.

The epidemic reached its maximum about the 1st of October, after which it steadily subsided, until by the 1st of November it had practically disappeared—all the susceptible having probably passed through it. Very few cases occurred in the town after October 15th. From the estimates of the leading medical men here, it appears that upward of five thousand cases of fever occurred during this epidemic. The State health officer, who made a house-to-house inspection, states that at least one-third of the seventeen thousand inhabitants of Key West had the prevailing fever during the epidemic. After satisfying themselves, early in the epidemic, that there was little or no danger in the disease, nearly all the natives avoided the trouble and expense of seeking medical advice.

The last cases but one—eleven in number—that fell under my charge, were on board the United States steamer *Pompey*. The *Pompey*, a collier, arrived at Key West from Norfolk, October 10th, and positive orders were given by the commandant, upon my recommendation, that she should hold no communication,

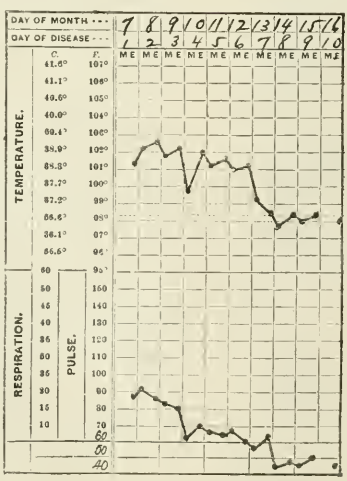

Chart IV.—M. P. B., aged twenty-two, New York.

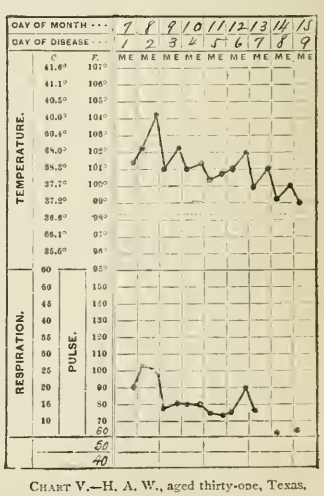

Chart V.—H. A. W., aged thirty-one, Texas.

that could possibly be avoided, with the shore. October 11th, five workmen from shore began work on board the *Pompey*. The same day the *Pompey* went

alongside the coal schooner *Susie M. Plummer*, and lay there during the following two weeks, during which time she received the *Plummer's* entire cargo of coal. While the *Pompey* was coaling from the *Plummer*, ten men and five boys from shore worked at the coaling and in the bilges of the *Pompey*, going backward and forward between ship and shore, night and morning. The fever probably got aboard the *Pompey* from the *Plummer*. The latter was infected, having recently had cases of the fever on board. I had seen two quite severe cases in the *Plummer's* crew. The interval between the time the *Pompey* hauled alongside the *Plummer* and the occurrence of the first case of fever (chart No. 12) on board the former vessel—that is, from October 11th to October 21st—was ten days. Ten other cases appeared on the *Pompey* during the 23d, 24th, and 25th of October, after what may be considered an incubation stage of from twelve to fourteen days. Seven of the *Pompey's* cases occurred in the topgallant forecastle, where nineteen men slept with an average air space of only eighty cubic feet for each man. This topgallant forecastle was ventilated by six 9-inch air-ports on the ship's sides, and one 9-inch deck ventilator overhead. This place was open aft, except when closed by curtains in rainy weather. There was an additional 9-inch ventilator in the deck above the topgallant forecastle, but it was kept permanently closed. Three of the *Pompey's* cases (charts Nos. 13, 14, and 15) were in the persons of the chief petty officers, who, with three other men, slept in the petty officers' room between decks. The capacity of this room, in which six men slept, was one thousand cubic feet—only one hundred and sixty-seven cubic feet to each man. There opened into it three 9-inch air-ports on the side, and one 9-inch deck ventilator overhead. Ventilation through the three air-ports was pretty effectively cut off, from the 11th to the 26th of October, by the schooner *Plummer*, which lay alongside, almost against these apertures. To make a bad matter worse, it rained almost constantly for eight or ten days while the *Pompey* was coaling, and the weather was very warm. The *Pompey's* seven worse cases (charts Nos. 12, 13, 14, 15, 16, 17, and 18) were sent ashore October 24th and 25th, when first seen by me.

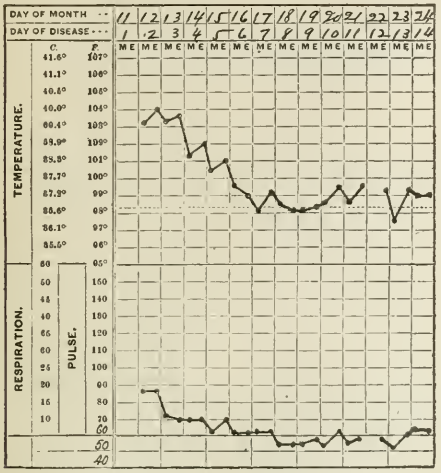

Chart VI.—J. M. F., aged fifty-six, Bahama Islands, W. I.

I recommended that the men be broken out from their quarters under the topgallant forecastle and between decks, and made to sleep under awnings on the upper deck. The overcrowding being relieved, no additional cases occurred on the *Pompey* during the last week that she remained here, although there were twenty-four men on board who had not had the fever. No cases occurred among the officers. As soon as the *Pompey's* men, who had been sent ashore, began to convalesce, they were taken back to their ship, which promptly left for Washington, D. C. The vessel had no medical officer on board when this outbreak of fever occurred. One joined her the day she left.

August 15th, the cases of fever which had occurred on the 13th, 14th, and 15th among the marines in the barracks were pronounced yellow fever by the attending medical officer, Assistant Surgeon Marcour, United States Navy (he had acquired familiarity with that disease during the epidemic in Louisiana the preceding year). A consultation of six physicians was immediately held at the barracks, and the cases, after examination, were unanimously pronounced suspicious. The agent of the State board of health, one of the consultants, stated at the time that if those cases among the marines were yellow fever, he had been treating cases of yellow fever at the hotel. This and many other statements, lay and professional, indicate the similarity between the two sets of cases. Another conference of physicians was held at the barracks on the following day, August 16th. The members of this conference were: the agent of the State board of health, two Marine Hospital medical officers, two prominent local physicians, and Dr. Marcour. At this conference the diagnosis of yellow fever was unanimous. This was officially announced by the State board of health, and Key West was immediately quarantined against by the rest of the country.

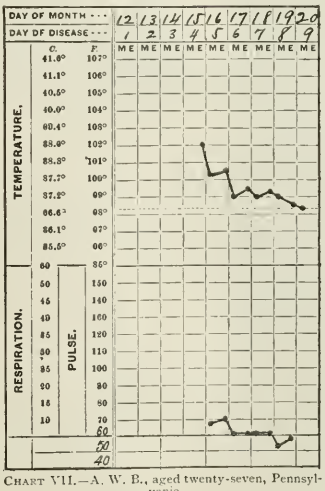

Chart VII.—A. W. B., aged twenty-seven, Pennsylvania.

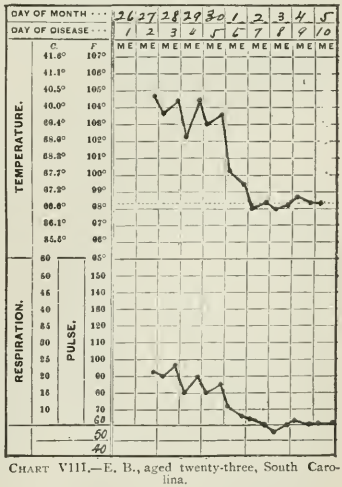

Chart VIII.—E. B., aged twenty-three, South Carolina.

Within the succeeding week three other yellow-fever experts and myself were sent here. These three were the State health officer of Florida and two Marine

Hospital surgeons. The State health officer and the junior Marine Hospital expert pronounced the cases among the marines dengue. The senior visiting Marine Hospital surgeon (one of the most distinguished and experienced yellow-fever authorities in the United States), after about ten days of careful study of the Key West puzzle, as he called it, concurred in the diagnosis of dengue. The surgeon in command of the United States Marine Hospital here, one of the six members of the second conference, maintains his original diagnosis of yellow fever, as do also the two local physicians of the second conference and Assistant Surgeon Marcour. The two remaining members of this conference subsequently changed their diagnosis from yellow fever to dengue.

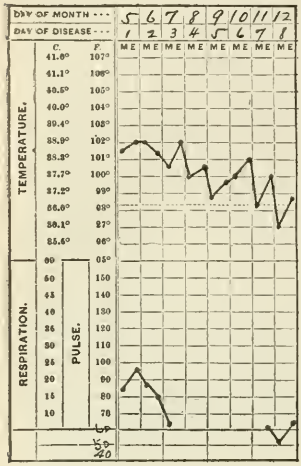

CHART IX.—C. E. D., aged thirty-one, New York.

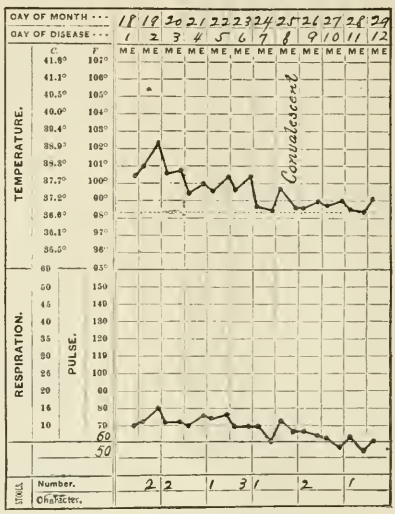

CHART X.—F. P. G., aged fifty-one, Ohio.

During and at the end of my first week's study of the cases among the marines and others, I was unable to believe that the prevailing disease was either yellow fever or dengue. I was rather hoping that it would turn out to be the latter, as I wished to get away from the hot weather and plague of mosquitoes as early as possible.

Then came the second group of cases among the marines (charts Nos. 1, 2, and 3), presenting, as it seemed to me, the symptoms, markedly the objective, of the first stage of yellow fever, and I reported them as such. A little later on came two similar but more serious cases (charts Nos. 4 and 6), and I felt certain that they also were yellow fever. One of the latter (chart No. 6) was so much more severe than any I had seen before, that I confidently expected my diagnosis would soon thereafter be verified by the occurrence in Key West of grave and fatal cases, as transpired in Fernandina in 1888. At the same time with these two cases occurred two others (charts Nos. 5 and 7), which, although in one of them (chart No. 5) the patient was very ill, I could not call yellow fever. They both presented a peculiar eruption (to be described hereafter), and I reluctantly recorded them as dengue, ignoring, as others have apparently done, the fact that dengue is not the only fever with an eruption.

Finding myself between the two horns of a dilemma, I, on the 26th of September, got a few days' leave of absence, and ran over to Havana, to refresh my recollections of "genuine" yellow fever, particularly the mild cases. In a large military hospital, the Alfonso XIII., I saw yellow fever in its different stages. The mild cases in the first stage appeared to me very similar indeed to the more serious ones I had been studying in Key West, especially in the first two or three days of the latter. Nevertheless, after my return to Key West I did not see another case which I could call yellow fever, although I observed several which before my visit to Havana I should probably have recorded as such. There was something in the *tout ensemble* of the Havana cases, stamping them as genuine, which was lacking in the Key West cases. About the only tangible difference which I could be sure of was that in the expression of the face in the Key West cases there were more apathy and hebetude than in that of the Havana cases.

Before leaving this division of the subject, it is proper to give a brief account of an interesting case of fever which occurred in Key West eight or nine days before the arrival of the *Iroquois*. The patient had been living in Key West for ten or twelve years. The attack began June 27th, with slight chilliness. Its clinical chart, No. 21, shows the temperature curve and pulse rate. Other symptoms were: pains in the head, back, and legs; flushed face; injected eyes; small pointed tongue, with coated centre and red edges; slight jaundice of conjunctivæ on second day, increasing till the fifth day, when it was well marked in eyes, face, and neck, then gradually fading away; albumin in urine, twelve per cent. on the second day, fifteen per cent. on the fifth day, after which it decreased steadily, and disappeared on the sixteenth day. Recovery was complete. The case was diagnosed as yellow fever by the competent medical gentlemen who had charge of it, and the patient was kept isolated. As no connection whatever could be traced between this case and any which preceded or followed it, the attending physician does not consider that it had anything to do with the subsequent epidemic.

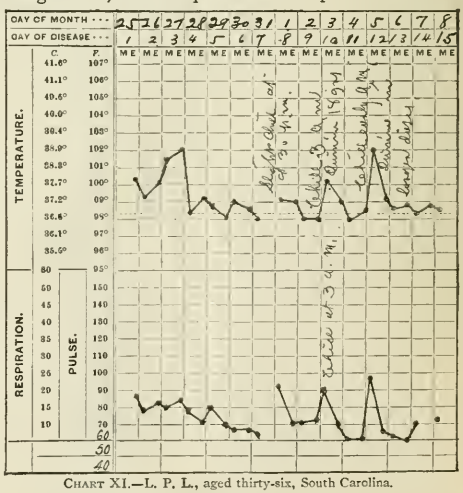

CHART XI.—L. P. L., aged thirty-six, South Carolina.

(About the beginning of the third week of July last, I had under my charge in the Naval Hospital, Pensacola, several cases of fever very closely resembling, objectively and subjectively, the average cases

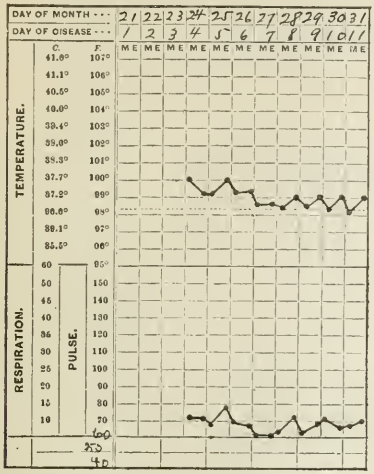

Chart XII.—J. M. G., aged forty-three, New York.

which occurred in Key West during the late epidemic. In one of these Pensacola cases, the facies, eruption, temperature, etc., were so much like measles that my diagnosis was morbilli—with an interrogation point after it—prostration too great for measles. The said cases were among the Florida naval reserves, who enlisted at Tampa, July 6th, and left on the 7th or 8th for the navy yard, Pensacola. As there had been no fever of the kind at the Pensacola naval station prior to the arrival of these men, and as a fever very similar to it was rife at Tampa when they left that place, it is almost certain that the patients contracted the disease at Tampa. The incubation could not have been less than from twelve to fourteen days.)

Phenomena.—When not otherwise indicated, the figures and percentages given below are based upon the combined records of fifty-eight cases; thirty-one of them observed by an accomplished and careful medical officer residing in Key West; nine by Assistant Surgeon Marcour, United States Navy; and sixteen by myself. I have fragmentary records of numerous other cases seen by me in various parts of the city and on ships in the harbor, which I could not visit regularly.

The first eleven of the accompanying clinical charts are of the naval and marine cases which began and ran their course during my service in Key West. Those of the cases among the marines, which occurred prior to my arrival on the 23d of August, form a part of the report, already submitted, of Assistant Surgeon Marcour, who was in charge of the medical department of the Key West naval station prior to my arrival.

The disease which prevailed in Key West during the epidemic recently ended was an acute, highly infectious, continued fever, unusually uniform in its course and duration, as shown by the foregoing history and the clinical charts.

The most prominent features of this fever were:

(1) A long incubation period, from twelve to fourteen days, as indicated by the following cases, the only ones in which I was able to find a more or less reliable starting-point.

The patient of chart No. 5 arrived at Key West from Norfolk, Va., August 28th; he was attacked by the fever, September 7th—ten days after his arrival. During the interval he slept on board a vessel alongside the wharf, in an infected quarter of the city.

The patient of chart No. 10 reached Key West from New York, October 4th; he was attacked October 18th—fourteen days after arrival. He had slept every night in a room and bed in which a man had had the fever. The said room and bed remained vacant, without having been disinfected, during the interval.

The patient of chart No. 11 arrived at Key West from New York, October 10th; he was attacked October 25th—fifteen days after arrival. He had slept every night in a small stateroom and bed, not disinfected, in which an officer whom he relieved had just gone through with a case of fever.

The eleven cases on the *Pompey*, direct from Norfolk, Va., occurred from twelve to fourteen days after the men were first exposed to infection.

The chambermaid at the hotel was attacked two weeks after beginning to nurse Mr. Klein.

The patient of chart No. 8 was attacked by the fever eighteen or nineteen days after he began to nurse patient of chart No. 9.

The incubation period of patients of charts Nos. 1, 2, and 3 was apparently not less than twelve days, that having been the interval between the time they were attacked and the occurrence of the last preceding case among the marines.

In addition, the Pensacola patients were attacked about fourteen days after they left Tampa.

(2) Suddenness of invasion—chill in about one-half, brief prodromes in minority, several days' malaise, anorexia, etc., in a few cases.

(3) Rapid rise of temperature to average point of about 103.2° F. during first one or two days, followed by a less rapid, rather steady decline, reaching the normal about the seventh day.

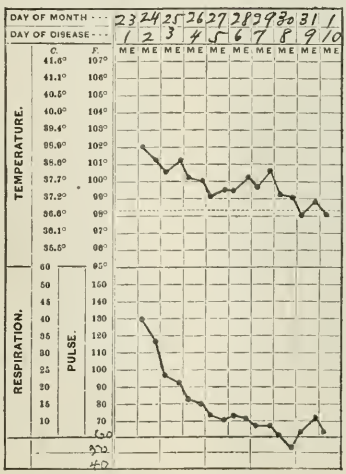

Chart XIII.—A. P., aged twenty-two, Germany.

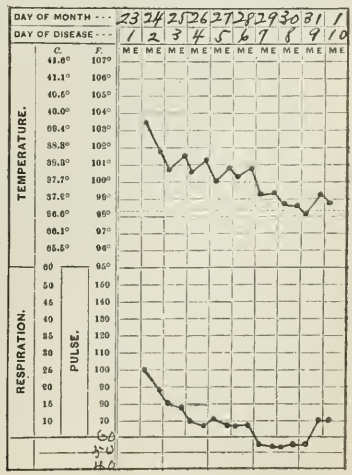

Chart XIV.—E. D., aged twenty-seven, Ireland.

(4) One paroxysm only, no relapses, very few if any sequelæ.

(5) A peculiar facies, impossible of correct description; during the first few days a combination of the facial appearances of yellow fever, typhus, and measles, without the catarrh of the last, and not enough alertness, anxiety, and jaundice for yellow fever. There were slight icterus of scleræ in about one-half, and icteroid tinge of face in minority. There was only one case with positive jaundice, and this was thought at the time by nearly all the physicians, myself included, who examined it, to be hepatogenous. The color during latter part of pyrexia and first part of convalescence was sallow, dirty looking, and dusky red.

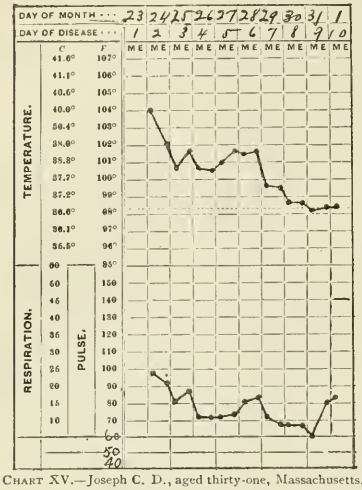

Chart XV.—Joseph C. D., aged thirty-one, Massachusetts.

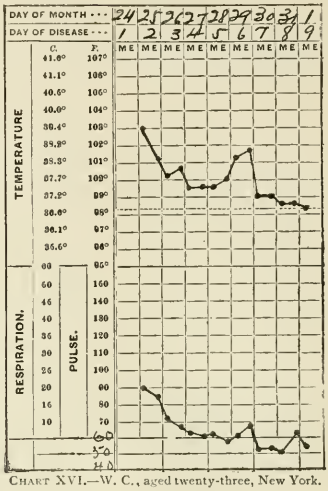

Chart XVI.—W. C., aged twenty-three, New York.

(6) Capillary stasis and sponginess of the gums, with tendency to bleed, in the majority of cases.

(7) Pains in front of the head and in the back of almost every case, severe in majority. Pains in the extremities and joints were less constant and less severe.

(8) Constipation in all except two of our fifty-eight cases, obstinate in some, moderate in most.

(9) Great debility, sometimes prostration, from the first, in a large majority of cases—out of all proportion to the severity of the other symptoms.

(10) Pulse generally much slower in proportion to temperature than usual in pyrexia. (My experience, corroborated by that of many others, is that this discrepancy often occurs in tropical and sub-tropical countries in smokers and coffee-drinkers, compelled by illness to stop the use of tobacco and coffee.)

The lack of correlation between pulse and temperature, characteristic of yellow fever (according to some authorities)—that is, a falling pulse rate simultaneous with a rising temperature—existed in about one-half the cases during some period of their course. This was generally transient and always irregular.

(11) A more or less contracted tongue, dryish, covered, except at the tip and edges, with a whitish or yellowish-brown fur, in almost every case.

(12) An eruption, from the fourth or fifth to the seventh or eighth day, in about twenty-five per cent. of the cases—rubeoloid, non-crescentic, at first disappearing under pressure, afterward permanent. It was generally on the chest, abdomen, and extremities; rarely on the face, neck, or dorsum of hands. I did not see it once in the palms. This eruption in a few cases ended with slight branny desquamation.

Small, muddy-looking, subcuticular spots on chest, shoulders, and flanks, preceded and accompanied the above-described eruption in five cases seen by me—three of them naval (charts Nos. 5, 9, and 10) and two civilian. In two of these (charts Nos. 5 and 10) this subcuticular maculation persisted for about a week after the beginning of convalescence. On the patient of Chart No. 5 this eruption was thought at the time by several of us to be the terminal eruption of dengue, although it was not roseolar in character. Not until I saw the second instance of this maculation (chart No. 9) did I pay much attention to eruptions, except to see whether or not they indicated dengue. Those I had seen were neither initial nor terminal, and I attached no importance to them, considering them accidental or the unimportant exanthemata which frequently accompany yellow fever. After having been struck by the eruption of patient of chart No. 9, I observed the integument more closely, and found a morbilliform eruption in nearly one-half of my cases.

(13) Albuminuria in about twenty-two per cent. of the cases, of short duration and small amount—in three cases five per cent.; in others from one to two per cent. (One case, in which albuminuria was found on the third, fourth, and fifth days, was thrown out of the above computation upon discovering that the patient had a muco-purulent urethral discharge.)

(14) Active epistaxis in one case—oozing of blood from posterior nares in five cases. I was informed of three cases of epistaxis, one of them critical, in his practice, by a local practitioner.

(15) Black vomit in two cases (not included in our fifty-eight), both in the practice of Cuban physicians,

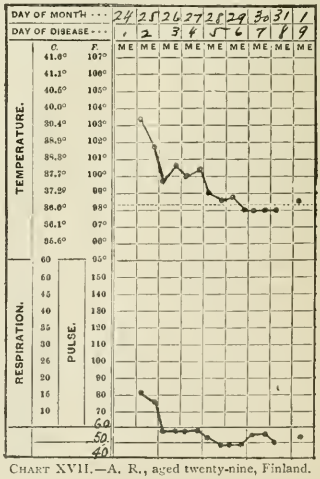

Chart XVII.—A. R., aged twenty-nine, Finland.

who pronounced them paludal fever. There was no suppression of urine in either case, and both ended in recovery.

(16) Not so much attention as it deserved was paid

to the spleen. Upon my arrival I examined the spleens of Assistant Surgeon Marcour's ten marines, then in the beginning of convalescence. I found in six or seven of them a moderate enlargement of the

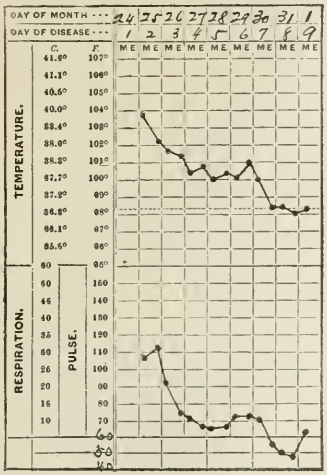

Chart XVIII.—H. Van E., aged twenty-seven, Holland.

spleen, and called Dr. Marcour's attention to it. After that, having satisfied myself that the prevailing fever was not malarial, I examined the spleen in those cases only which showed malarial symptoms.

(17) Anorexia, usually well marked in the majority, and continuing well into convalescence in a minority of the cases.

(18) Insomnia, more complete and constant than in ordinary fevers of corresponding intensity. Several patients were absolutely unable to sleep for three and four days and nights, after the first night of attack.

(19) Falling of the hair occurred in three of my cases during convalescence—in one of them by handfuls.

(20) Mortality rate very low.

The fever was not epidemic before the 15th of August, and there were very few cases of it in the city after October 15, 1898. The population of Key West is said to have been from eight hundred to one thousand larger in the summer and autumn of 1897 than in the summer and autumn of the present year.

The official records of Key West show that there were seventy-seven deaths from August 15 to October 15, 1897; and ninety-five deaths between August 15 and October 15, 1898. The same records show that between the middle of August and the middle of October, 1898, three deaths were reported as from "pernicious fever," while during the same period of 1897 no deaths were reported in Key West from that cause—whatever it may be. Another death stands recorded, August 24, 1898, as from "infectious fever." The records show four deaths from "senility" between the middle of August and the middle of October, 1898, and no deaths from "senility" during the corresponding period of 1897.

These figures make it seem extremely probable that the epidemic fever which recently prevailed in Key West caused, directly and indirectly, not less than eighteen deaths during the two months of its prevalence.

Recapitulation and Remarks.—After weighing carefully all the evidence within my reach, I am forced to the conclusions:

First, that the fever recently epidemic in Key West was neither yellow fever nor dengue.

Second, that the epidemic points more directly to the diagnosis of typhus exanthematicus than to that of any other classified disease.

These two propositions seem to be demonstrated by the facts set forth in the foregoing account of the epidemic. Some of these facts deserve further elaboration:

(*a*) Overcrowding and defective ventilation, the classical causes of typhus fever, evidently determined the outbreaks on board the *Pompey* and in the marine barracks. Removal of these conditions was immediately followed by cessation, more or less permanent, of the outbreaks. Probably ochlesis had much to do with the rapid spread of the epidemic in Key West, one-fourth of whose population is Cuban. It is a well-attested fact that these Cubans, everywhere and at all seasons, sleep together at night in their bedrooms "like sardines in a box," with all the doors and windows closed. During the day, however, they live out of doors. It is well known that in cities, where typhus fever prevails, the low lodging-houses and night-shelters, in which human beings sleep closely crowded together, furnish the greatest number of cases.

(*b*) The incubation period averaged about twelve days in all cases where reliable data could be obtained. The average incubation period of yellow fever is four or five days; that of dengue is two or three days; and that of typhus twelve days.

(*c*) The temperature curve resembles that of typhus—compare the accompanying clinical charts with charts Nos. 2, 3, 4, 5, 6, 9, 10, and 11 of Licéaga's article on typhus fever in the "Twentieth Century Practice." Since the introduction of the clinical thermometer, it has been found that defervescence is not so rapid in typhus fever as was formerly thought and taught. The instrument of precision has shown

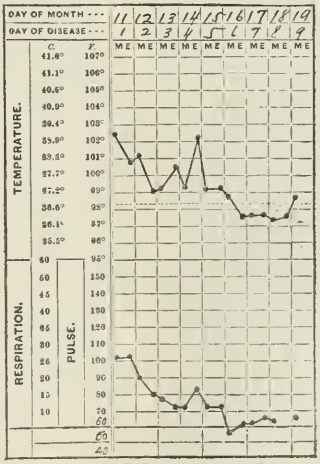

Chart XIX.—F. E. S., aged twenty-four.

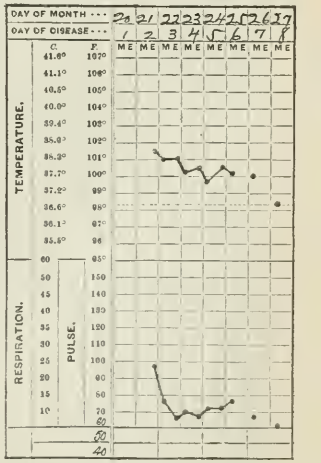

Chart XX. L., Lieutenant, U. S. A., aged twenty-five.

that the termination of the pyrexia of typhus is by lysis rather than by crisis.

(*d*) Reviewing them as a whole, the facial appear-

ances of the Key West cases seen by me were much like those of mild typhus. Prof. John Guiteras, in his admirable monograph, "Diagnosis of Yellow Fever," says: "The appearance of the face is that of typhus fever during the first forty-eight hours of this disease, or like that of measles before the eruption breaks out, with a more or less pronounced icteroid hue." During the first three days, a mild case of typhus resembles closely the first three days of the first stage of yellow fever.

(*e*) The remarkable absence of relapses and sequelæ was indicative of typhus. Relapses are the rule in dengue, and sequelæ are common after yellow fever.

(*f*) The eruptions were decidedly more like those of typhus than of any other disease with which I am acquainted. The two instances of subcuticular mottling observed by me about October 7th—one on the patient of chart No. 9, the other on a young civilian—first suggested typhus fever to me. Then I recalled that I had already seen the same peculiar maculation in other cases—one of them in the case of the patient of chart No. 4, during the second week of September; the other that of a merchant captain, who was under my charge during the third week of September. The more

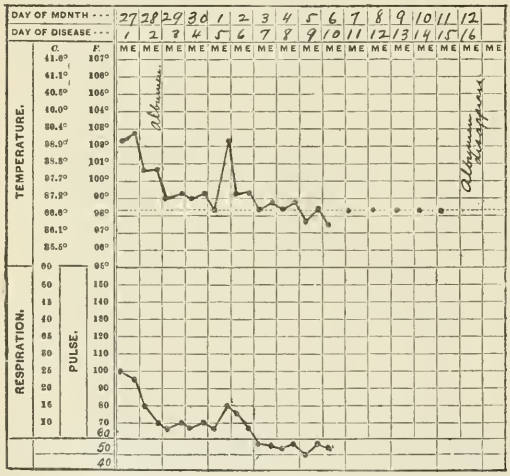

Chart XXI.—P., aged twenty-eight, New Orleans.

I thought over the Key West cases which I had observed, and compared them with what I could recall of some cases of typhus fever which occurred in a ward under my charge in a hospital on Blackwell's Island, N. Y., nearly twenty-eight years before, I became impressed with their similarity.

(*g*) The albuminuria points to typhus. Licéaga, in his description of typhus, states: "Albumin is frequently found. . . . On the fifth day of the disease we may find hyaline casts and pigment granules." This is substantially what other observers have noted. In the Key West cases albumin did not occur in the urine often enough, regularly enough, or in sufficient quantities for yellow fever. It was found altogether too often, however, for dengue.

(*h*) The Key West fever was apparently the same as that which previously and synchronously prevailed at Tampa, and which, as I have understood, all the physicians who investigated it there agreed was not yellow fever. The Key West cases were evidently the same as "the large majority of fever cases at Santiago," which, according to Major Gorgas and most others, was not yellow fever, and "no one considered them dengue."

(*i*) The late epidemic was arrested by exhaustion of susceptible material, and not by cool weather, as shown by the outbreak on board the *Pompey* and the case on the *Accomac* (chart No. 11) a week or more after said epidemic had practically ceased to exist, and the fact that at the time the weather was hot. The mean temperature during October, 1898, was 76.8° F.; the mean temperature from November 1 to November 15, 1898, was 76.4° F.

(*j*) War, squalor, famine, and filth—the factors so potent in the production and development of typhus fever—existed at Santiago, when the *Iroquois* sailed from that place for Key West.

The sanitary condition of Key West was, at the same time, extremely favorable for the development and spread of typhus fever, upon the introduction of the virus of that disease. The city has no system of sewerage; the waterclosets are simply pits dug in the coral rock composing the island upon which the town is situated. These pits are emptied, theoretically, whenever they get full. As this operation costs the owner from $10 to $15, it is done as rarely as possible on the majority of the premises. The odors of decomposing human excreta and putrescent animal matters pervade the atmosphere of the streets in many parts of the city, especially at night and early in the morning. Licéaga writes: "Infections through fecal matter in process of decomposition is the only cause to which could be attributed many small epidemics. . . . Dr. de Avellano, member of the superior council of health of the City of Mexico, states: "Innumerable are the houses in which an inspection made on account of an outbreak of typhus fever shows sewers without any flow, stopped up with fecal matter in process of decomposition. I have records of many very curious observations concerning infected houses, in which the epidemic ceased the moment the closets and sewers were cleansed."

The *de-novo* origin of typhus fever, so ably advocated by Murchison and other high authorities, is still on the cards. Pasteur himself is a supporter of the autochthonous theory of typhus fever, as shown by the following quotation from his writings: "There are other virulent diseases which appear spontaneously in one country or another, such as, for example, typhus fever in camps. Without any doubt the spores of the microbes which give rise to these diseases are scattered everywhere. Man carries them in himself, perhaps in the intestinal canal, without much injury; but they may at any time become dangerous, when their virulence becomes progressively increased under conditions of overcrowding, of successive reproduction on the surface of a wound, or in some other manner."

(*k*) One of the strongest arguments to show that the fever which prevailed during the recent epidemic was not yellow fever, is that it attacked numerous persons, both Key Westers and Cubans, who had had yellow fever in former epidemics of that disease. The patient of chart No. 6 had a severe case of yellow fever on board a man-of-war in 1862.

(*l*) The mortality rate was entirely too low for yellow fever in such a city as Key West, in such a climate, within ninety miles of Havana, and where frost has never been known. There was during the epidemic an unusual number of strangers in Key West, mostly imported workmen—about four hundred of the latter—employed upon the army and navy fortifications, machine shops, coal sheds, docks, etc., in process of construction. There must have been many non-immune children in Key West, born subsequently to the last yellow-fever visitation of 1890.

(*m*) The rarity of anything resembling the initial eruption, terminal eruption, terminal fever, relapses,

and other symptoms peculiar to dengue, should alone exclude that disease.

The reasons for doubting that the fever recently epidemic in Key West was typhus are: the mildness of the cases, the shortness of the cases, the rare occurrence of critical discharges, and the extremely low rate of mortality.

These, which seem to me departures in degree and not in kind, may be attributable to a modification of typhus fever by the subtropical climate and warm weather, which tend to prevent overcrowding and to promote ventilation and cleanliness. In our Gulf States, typhoid fever is milder and less fatal than at the North; so much so, often, as to be almost unrecognizable. May not its congener, typhus, depending so much, as it does, for its virulence upon overcrowding, undergo a still greater modification, even to becoming so benign as to be mistaken for dengue in a climate where the people live, except when asleep, in the open air?

In "An American Text-Book of the Theory and Practice of Medicine," vol. i., p. 135, Dr. Pepper writes, concerning typhus fever: "In 1880 a fatal outbreak occurred at the town of Blackwood, N. J. I had an opportunity of studying it. . . . At first the cases were a mild type, and distinguished with difficulty from typhoid. Severe weather came on. The sanitary condition of the almshouses became very bad, and the disease assumed a grave type. In the early part of the outbreak all the cases recovered; later the mortality was almost fifty per cent."

Dr. Hutchinson, in his article on typhus fever in Pepper's "System of Medicine," describing the different varieties of that disease, says: "In addition to these there are certain other varieties, arising from differences in degree. These differences are sometimes owing to diversities in the constitution and habits of the patient, sometimes to variations in the character of the epidemic, and are sometimes not readily explainable. One of these is the mild form, in which the symptoms are those of moderate fever, and in which the disease may run its course in seven days. In this form the temperature may never rise above 102° F., the eruption be absent or very scanty, and the characteristic stupor or dulness be wholly wanting. Unless complications arise, recovery invariably takes place."

Should the Key West epidemic of 1898 be found to have been one of typhus fever, it may throw light upon some of the former much-discussed epidemics in different parts of the South, in which such strong disposition has been shown to claim everything for dengue.

The cordiality shown me by my professional brethren, both visiting and resident, in Key West, is highly appreciated by me.

I am especially indebted to Dr. J. W. V. R. Plummer, city health officer; and to Past Assistant Surgeon G. M. Guiteras, United States Marine Hospital service, in command of the Marine Hospital, for innumerable courtesies and assistance, both professional and social.

I was particularly impressed by the excellent manner in which Assistant Surgeon R. O. Marcour, United States Navy, carried himself and discharged his duties. He showed very unusual tact, judgment, discretion, and courage in the difficult and responsible situation in which he suddenly found himself, upon and immediately after his discovery of the epidemic.

U. S. Naval Station, Key West, Florida,
November 15, 1898.

Getting Ready.—Visitor: "Why did you say that gentleman who went out was your biographer? I am sure it was Dr. Jones." Invalid: "Same thing! He is at work on my life."

ECTOPIC OR EXTRA-UTERINE PREGNANCY.[1]

By E. M. POND, M.D.,
RUTLAND, VT.,
SURGEON TO RUTLAND HOSPITAL; CONSULTING SURGEON TO PROCTOR HOSPITAL.

When requested to prepare a paper for this society I asked myself, What subject will be of equal interest to both physician and surgeon? In answer, I decided to take "Ectopic Gestation, or Extra-Uterine Pregnancy," for the following reasons:

1st. That these cases come under the care of the general practitioner, and upon his ability to diagnose them often rests the life of the patient.

2d. That the surgeon is generally called, and he must be able to confirm the diagnosis and treatment.

3d. That the general practitioner often is not as familiar with the condition and is not as prompt in his action as the case demands.

I cannot go into details, but will confine myself to leading points in pathology, diagnosis, and treatment.

That extra-uterine pregnancy is one of nature's mistakes, no one will question. The ovum in its passage from the ovary to the uterus, as a rule, is impregnated in the Fallopian tube; exceptions occur when the ovum is free in the peritoneal cavity, there coming in contact with the spermatozoa and afterward possibly entering the tube of the opposite side. If for any reason the impregnated ovum is arrested in its passage to the uterus, it forms adhesions for itself and grows, constituting ectopic gestation.

The causes favoring its occurrence are diseased tubes, *i.e.*, by strictures, dilatations, diverticula, twistings, displacements, etc.

The ovum may become arrested at any place in its course, *i.e.*, at the ovary (forming ovarian pregnancy, which is very rare), at the fimbriated end of the tube, in its middle, or at the uterine end. The last three may give somewhat different symptoms. As the ovum grows in the fimbriated end of the tube, the tube enlarges, and after a certain time either ruptures or, what is common, its contents are aborted from the fimbriated end into the peritoneal cavity. This may or may not be followed by severe hemorrhage; the ovum then either dies, or makes a new attachment and continues to grow, forming abdominal pregnancy, this possibly going to full term.

The form starting in the middle of the tube is very liable to rupture at from the sixth to the eighth week; exceptions are when it progresses to the third or eighth month. The ovum in some cases dies before the tube ruptures, forming a tubal mole or a hæmatosalpinx, or is absorbed. Rupture may take place into the peritoneal cavity or into the broad ligament.

The symptoms of ectopic gestation are often very clear and again are masked. Often no symptoms appear until the patient is taken with severe pains and fainting, dependent upon rupture and hemorrhage.

A typical case is as follows: A woman who has been regular stops menstruating, is a little sick at the stomach; the breasts are sore, possibly containing a little milk. She thinks herself pregnant. A week or two later there may be a slight flow, which is serous, containing some shreds; this may be repeated at varying intervals. Suddenly she is seized with agonizing pains in the lower abdomen and becomes faint, pale, cold, and possibly pulseless, either soon dying or after a while rallying, according to the severity of the hemorrhage. If she recovers from the first attack others are almost sure to follow, which are as a rule associated with the watery, shreddy uterine discharge. If with this history the uterus is found by vaginal or rectal examination a little enlarged, and a tense, fluctu-

[1] Read before the Vermont State Medical Society at Brattleboro, Vt., October 14, 1898.

ating, pulsating tumor or an ill-defined mass is found on either side or posterior to the uterus, it makes the chain of symptoms complete. This type is illustrated by the following:

Mrs. S——, aged twenty-four years, no children; history of anteflexion and stenosis with diseased tubes and ovaries. Menstruation normal up to last period, when it ran over one week. The flow was very slight, watery, and shreddy. A few days later the patient was taken with severe cramps and faintness. The pain was exceptional in situation, being located in the groin, at about the centre of Scarpa's triangle. Vaginal examination was as follows: Uterus anteflexed, left tube and ovary diseased but not much enlarged. Right tube distended to about the size of the thumb, tense and elastic, with active pulsation of the vessels of that side. Diagnosis of tubal pregnancy was made, and operation advised. Counsel was called, who did not agree with the diagnosis, and operation was delayed. The pain and faintness recurred every few days, and vaginal examination showed increasing size and pulsation of the right tube. Operation was finally consented to twenty days from the first symptoms, *i.e.*, two months from the time of the last normal menstruation. A large amount of blood was free in the peritoneal cavity, and the left tube was the seat of a recently ruptured tubal pregnancy. The patient made a good recovery.

Instead of a slight uterine discharge menorrhagia may occur.

Mrs. M——, thirty-five years old, with one child of ten years, whose previous health was good, gave the following history: Menstruation, formerly normal, was delayed two weeks, when it came on with excessive menorrhagia and severe uterine and abdominal pains. She had had some symptoms of pregnancy and thought she was miscarrying. The pain and flowing continued for three weeks and she was constantly getting worse. I saw the patient three weeks after the first symptom, *i.e.*, nine weeks from the last normal menstrual period. She was given ether, curetted, and a careful examination made. A mass was felt over the right broad ligament, with active pulsation of the vessels and some localized peritonitis. A diagnosis of extra-uterine pregnancy was made. The case being out of town and not prepared for cœliotomy the operation was delayed until the next morning. The abdomen being opened, it was found filled with clots and liquid blood, and an active hemorrhage going on. The broad ligament being clamped and the clots removed, the right tube was found ectopic and ruptured. This as well as the other tube and ovary were removed, and the abdomen was flushed and drained. A good recovery followed.

A patient who has once had ectopic gestation may have a second attack if the opposite tube and ovary are left. I have seen one such case. The first attack this patient had was reported by me in the MEDICAL RECORD of December 5, 1891, and was the first of my cases. It is briefly as follows:

Mrs. H——, aged twenty-four years, married four years; was never pregnant. Menstruation delayed two weeks, when she was taken with violent pains in the lower abdomen, more on the right side, with collapse, and a pulse of 120; the temperature was subnormal. Three days later a similar paroxysm occurred and she began to flow; this was watery and shreddy. In a week the patient was better. November 3d, thirty-three days from the time she should have menstruated and eighteen days from the first pain, she was taken with the third paroxysm of pain, which continued for the next few days. She again began to flow, and was semi-conscious, with a pulse of 140 and a subnormal temperature. By vaginal examination a tumor could be detected on the right side; the uterus was large and retroverted, and pulsation was active about the cervix, vagina, and broad ligament; the bowels were tympanitic. The patient finally rallied, and the temperature rose to 103 F. The diagnosis was extra-uterine pregnancy. The following day the abdomen was much softer and fluctuation present. Upon percussion the abdomen was flat anteriorly, and tympanitic posteriorly and laterally. The diagnosis was rupture of the sac and fluid blood in the peritoneal cavity. The hypodermic syringe confirmed the diagnosis of blood in the abdomen. On the following day an operation was performed by Dr. Horace Packard, of Boston. The abdomen was filled with blood and clots, and the right tube the seat of a ruptured ectopic gestation.

Two years later I saw the patient's husband, who gave me the following history: She had skipped a period of two weeks, was nauseated, and had an attack of pain with faintness; felt the same as she did with the sickness two years before. I was just starting for the World's Fair, and so advised him to see his physician, and if necessary have another operation, as it seemed a certain case of a second extra-uterine pregnancy. A little later Dr. Packard removed the left tube, which was ectopic. The patient made a good recovery. The condition of the abdomen in the first attack was somewhat peculiar, *i.e.*, a tympanitic abdomen at night, followed by a soft fluctuating abdomen in the morning, with flatness anteriorly and tympanitic areas laterally and posteriorly. The introduction of a hypodermic needle into the abdomen, while it was followed by no bad results in this case, is not a safe procedure and is not necessary in making a diagnosis.

During the attack of pain the pulse is rapid, the temperature generally subnormal, and the patient suffers from shock; the amount of shock generally depends upon the severity of the hemorrhage. After rallying from the shock the temperature generally rises.

If the outer end of the tube is involved the ovum may be expelled from the end of the tube without rupturing it, or a hemorrhage may take place from the fimbriated end of the tube. In this case the characteristic pain is not present, and the faintness depends upon the amount of hemorrhage.

I was called in consultation and afterward witnessed an operation on the following case. I can only report it imperfectly from memory: The patient, a strong young woman, thirty-three years of age, had had symptoms of pregnancy and had not menstruated for two months. She had had no pains, but did not feel right, so consulted her physician, who, finding an enlargement in Douglas' cul-de-sac with active pulsation, diagnosed ectopic gestation. The diagnosis in my mind rested between pregnancy in a retroflexed uterus and ectopic gestation; the sound passed in an anterior direction away from the mass, which excluded uterine pregnancy. The operation revealed the right tube prolapsed in the posterior cul-de-sac, distended, and adherent to the uterus; the fimbriated end was the seat of an ectopic gestation, and an active hemorrhage was taking place from the end of the tube. In this case the severe pain and the slight menstrual disturbances so characteristic of this trouble were absent.

After a ruptured tubal pregnancy the ovum may die and the blood and other products become encysted and absorbed, or it may break down into an abscess.

Mrs. X—— gave a history as follows: Six months before she thought she was pregnant; she had skipped a menstrual period and afterward had irregular flows and severe abdominal pains; this was followed by a long sickness, with pain and fever. Upon examination, a good-sized abscess was made out over the right broad ligament; it was adherent to the peritoneum anteriorly. A gush of pus followed an incision, and afterward a mass, the size of the hand, was removed; this was supposed to be the remains of a fœtus, which

examination by a pathologist confirmed. A rapid recovery followed.

If the ovum does not die after rupture or expulsion from the tube it forms new attachments and continues to grow, and may go on to full term, when it is either delivered by an operation, or else after a spurious labor the fœtus dies, the watery parts are absorbed, and it is either encysted, when it may remain for years, or suppurates with gradual expulsion through the vagina or rectum, or is impregnated with lime salts, forming a lithopedion.

I was called to operate in a case that I can only imperfectly report. A woman in middle life became pregnant, and, while not well, passed to full term. Pains started and her physician was called. Upon examination he saw it was not a normal labor. The growth was large and resembled an ovarian cyst. A trocar was introduced and a few pints of fluid were removed; a hard mass still remained. The tumor refilled in a few days and was again tapped; this time pus was removed. I saw the patient a few days later. The abdomen was about the size of that of a woman at seven months; pus was oozing from the old trocar insertion. Upon vaginal examination the uterus was found small and pushed to the right; the growth was soft, and a hard mass, resembling a fœtus, could be made out. The patient was in collapse, so an operation was not performed. Later an autopsy was refused. While not knowing the exact condition, I have always considered it a case of abdominal pregnancy at term, with spurious labor and death of the fœtus.

In abdominal pregnancy symptoms similar to those of early tubal pregnancy are noted, followed by a tumor, gradually increasing in size; later fœtal movements and heart sounds are noted, with other physical signs as in normal pregnancy. The menstruation is irregular, often lasting a long time. Upon vaginal examination the uterus is found a little enlarged but empty, and the fœtus and sac are above and to one side. Extra-uterine and intra-uterine pregnancy may occur at the same time.

Dr. Howard Kelly reports the following: "The late Dr. H. P. C. Wilson, of Baltimore, had the good fortune to save both the extra-uterine and intra-uterine child in the case of a woman, twenty-four years old, in her fourth pregnancy. She bore a female child in easy labor, April 15, 1880, a month before the calculated time. It was at once evident to both patient and midwife that there was another child. An examination showed that the tumor in the abdomen was perfectly independent of the uterus, and, auscultating it, fœtal heart sounds were detected. An effort was then made to delay operation at least twenty-three days, until the full term of the intra-uterine gestation had arrived. The patient had several attacks of colic and labor pains, which were quieted by opiates. The operation was performed May 11, 1880. The abdomen was opened and a sac exposed which ruptured under slight manipulation, discharging about two litres of amniotic fluid, and a male infant, weighing eight pounds, was delivered. The child lay well flexed in the abdomen, with buttocks down and back turned forward. The sac was sewed to the abdominal incision and drained. The patient died of sepsis ninety hours after operation."

Interstitial pregnancy has some symptoms in common with tubal pregnancy. Examination will reveal an enlargement at the horn of the uterus, with active pulsation; the uterus will be enlarged. This form may rupture into the uterus, broad ligament, or peritoneal cavity. Rupture takes place later than in tubal pregnancy, and the hemorrhage usually is severe.

The diagnosis of ectopic gestation as a rule is easy; still mistakes often occur. I have seen one case of a retroflexed pregnant uterus giving almost a positive history of extra-uterine pregnancy; with physical signs by vaginal examination also confirmatory. No sound was introduced, but the patient miscarried some days after pains first started. I have also seen a case of ectopic gestation simulating pregnancy in the retroflexed uterus; in this case a diagnosis was important, and a sound was introduced into the uterus, which was found in normal position and empty. A lateral uterine displacement may also be misleading. Appendicitis, hydrosalpinx, pyosalpinx, and tumors may at times simulate extra-uterine pregnancy, but one should always bear in mind the previous history as well as the physical signs.

Mrs. K—— called at my office with the following history: She was twenty-five years of age; had one child ten years old; had had one miscarriage. Six years before she had pelvic peritonitis; she had not been pregnant since. She had run over her period two weeks, had morning sickness, and sore breasts with a little milk upon pressure. She had had a slight bloody uterine discharge for a few days before; the pulse and temperature were normal. She thought herself pregnant. Upon examination, the uterus was found slightly retroflexed; the right tube and ovary were a little enlarged, and to the left of the uterus was a tumor, the size of a small lemon, tense, fluctuating, with active pulsation of the vessels of that side. Ectopic gestation was suspected. A week later her condition was about the same, but the growth seemed a little larger. Pulsation of the vessels was still very active. One week later, *i.e.*, eight weeks from the last normal menstrual period, she was taken with severe abdominal pains, faintness, cold sweat, and other signs of collapse. The temperature was subnormal and the pulse was 120. The face was anxious. A slight uterine hemorrhage was present. Examination revealed about the same conditions as before. A diagnosis was made of tubal pregnancy with rupture, and an immediate operation was advised. Some delay occurred, so that the operation could not be performed until the following morning. When the abdomen was opened no blood was found in the peritoneal cavity. The left tube was enlarged to about the size of a large lemon, and was firmly adherent to the uterus, intestines, and pelvis. It was of a deep blue color and very vascular. After a tedious dissection this was removed without rupture. The tube and ovary of the opposite side were found diseased and also glued into the pelvis. They were removed. The wound was closed without drainage. Rapid recovery followed.

Examination of the specimen showed a beautiful condition of unruptured tubal pregnancy, although a little rounder. Upon section a few ounces of matter looking like coffee-ground fluid escaped; no blood clots were found. The ovary was intimately connected with the mass. With all the symptoms of extra-uterine pregnancy, both general and physical, we here had a tube filled with fluid looking like coffee-grounds. This patient was not hysterical and knew nothing about extra-uterine pregnancy.

The treatment of extra-uterine pregnancy is by immediate operation. As soon as the diagnosis is made one should operate, for one cannot tell when rupture, possibly with fatal hemorrhage, may take place. In cases left without operation all the children and seventy-six per cent. (Martin) of the mothers will die. By early operation the mortality should not be over six or eight per cent. (Kelly).

If the child is viable, an operation should be performed at once; if nearly so, operation should be delayed until the child is viable. Operation in these advanced cases is hazardous for the mother, as the placental circulation is active and vascular adhesions are numerous. The chief danger is hemorrhage at the time of operation and sepsis in cases in which all the

placenta and membranes cannot be removed. If the child has just died it is better to wait a few weeks, unless the symptoms are urgent, as the circulation in the placenta will then stop and it will become loosened, thus lessening the danger of hemorrhage and making its removal much easier.

Time will not allow me to say more.

THE PROPER READING-DISTANCE.

By NORBURNE B. JENKINS, M.D.,

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At a distance of several metres or yards little or no muscular effort is required for the normal eye to see objects distinctly; but an extreme exertion of the ciliary muscle, which controls the crystalline lens, is necessary if the vision be directed to an object a few centimetres or half-inches distant from the eye.

The following may illustrate the work of the muscles of the eye in reading at several distances: A sheet of paper, about twenty centimetres (eight inches) square, printed with type sufficiently large to be easily read at five or six metres or yards, is placed at this distance from a person with normal or emmetropic eyes. Practically no contraction of the muscles of convergence or of the ciliary muscles is necessary in order to read the type. Should the paper be placed a metre or yard from the eyes, the ciliary muscles and the muscles controlling the motions of the eyeballs are called upon for additional work, but no inconvenience is occasioned to emmetropic eyes by prolonged vision at this distance. If the paper now be placed within a few centimetres or half-inches of the eyes, the ciliary muscles contract to their utmost. The internal recti likewise are in a state of extreme exertion, in accomplishing the convergence necessary, in order that both eyes may see the same type at the same instant. The muscles are no longer adequate to the increased tension. They become exhausted and the vision is embarrassed. The type is alternately blurred and distinct, in consequence of the alternate failure and recovery of the muscles. Should this process continue for many minutes, pain and vertigo come on, and the sufferer is forced to direct his vision from the paper.

The nearer objects approach the eyes, the greater will be the necessary muscular effort and the sooner will the muscles refuse to perform their functions; the farther the type is held from the eyes, the less is the requisite muscular effort; hence it is probable that the farthest point at which distinct reading-vision is possible is the proper distance for continuous reading. Probably this point is more than thirty-five centimetres (fourteen inches) distant from the eyes, and is dependent upon the strength of the muscles, habit, and the visual acuity.

It may be observed that persons who use both eyes in reading, and who without lenses read for hours with comfort, usually hold the reading at a greater distance than thirty-five centimetres (fourteen inches) from the eyes. Such persons probably are hyperopic, emmetropic, or slightly myopic, and have less difference than 0.5 D in the refraction of the eyes, or less astigmatism than 1.25 D—rarely as much as 0.75 D.

Owing principally to the elasticity of the crystalline lens, many persons under the age of thirty-five are able to read continuously at a nearer point than thirty-five centimetres (fourteen inches), notwithstanding there may exist a considerable error of refraction. Perfectly fitting lenses are the more necessary for astigmatic persons past middle age, since the lenticular and muscular elasticity is greatly diminished, and astigmatic aberration is then corrected only by the cylindrical lens. It may be overcome by the convex lens, which magnifies the type rather than makes it clear in outline. If astigmatism in the aged is not corrected, reading is possible only by magnifying the type; and the stronger the convex lenses used, *i.e.*, the more the type is magnified, the nearer must the reading approach the eyes. If the lenses are too powerful, the muscles which control the eyeballs are overtaxed and binocular single vision becomes impossible; consequently one eye suppresses its retinal image, which often results in an amblyopia of greater or less degree. By the suppression of the retinal image of one eye the emmetropic watchmaker may, by the hour, wear on the fellow eye a powerful convex lens (say 10 D or more) without inconvenience. Should he place such a lens on both eyes, owing to the inadequacy of the muscles of convergence, binocular single vision would be impossible, except with the aid of powerful "base-in" prisms.

It is probable that persons who cannot read continuously with comfort at a greater distance than thirty-five centimetres (fourteen inches) are prevented by one or more of the following conditions: Disease; an uncorrected or an improperly corrected astigmatism of 0.5 D or more; an uncorrected or an improperly corrected hyperopia; an uncorrected or an improperly corrected presbyopia; an uncorrected or an improperly corrected difference of 0.25 D or more in the refraction of the eyes; an astigmatic correction in the absence of astigmatism; an hyperopia of more than 5 D; an astigmatism of more than 3.5 D; an anisometropic correction in the absence of anisometropia; an improperly corrected myopia; loss of equilibrium of the ocular muscles, resulting from the graduated tenotomy or from the injudicious use of the prism.

Assuming that an astigmatism of 0.5 D or more is present in from forty to eighty per cent. of persons, and that a difference of 0.25 D or more in the refraction of the eyes exists in from thirty to seventy per cent. of persons, the above-suggested statements are probably not unwarranted.

It is likely that the complete estimation of astigmatism is as difficult as any procedure that ever confronts the oculist. It is not unusual to find an astigmatism of from 0.5 D to 2.5 D unobserved or but partially estimated by the best of refractionists.

In the absence of disease, of astigmatism of more than 3.5 D, and of hyperopia of more than 5 D, it is probable that all persons who have a distant vision as good as $\frac{6}{6}$ ($\frac{20}{20}$), with or without lenses, may, when perfectly fitted with reading lenses, read at the proper distance for hours with perfect comfort.

The robust and those who read but little may be affected with as much as 2 D of astigmatism, and yet may use simple convex reading-lenses without serious inconvenience even as late in life as the sixty-fifth year.[1]

Absinthe Drinking.—Absinthe drinking concerns the French people more than it does the American or English, as in France the habit is prevalent, while elsewhere it is hardly heard of. When absinthe, the essence of a plant known as Artemisia absinthium, is mixed with alcoholic drinks, it adds its special action to that of alcohol. It produces dizziness, and, finally, an epilepsy, which differs in no way from the ordinary disease of that name. Absinthe intensifies the alcoholic effects, and it is claimed that it anticipates and overshadows them. It acts more swiftly than alcohol, causing greater excitement, frightful hallucinations, especially of sight, and, as French authors, such as Laborde, Motet, Melangée, Magnan, and Legrain, affirm, "the drunkenness of absinthe is, moreover, of unprecedented violence and presents the greatest danger."—*Medical Jurisprudence of Insanity.*

[1] Myopia of more than 2 D has not been considered in the above article.

NOTES ON THE TREATMENT OF PULMONARY TUBERCULOSIS.

By FREDERICK W. SMITH, M.D.,

SYRACUSE, N. Y.,

SECRETARY OF THE TUBERCULOSIS COMMITTEE, NEW YORK STATE BOARD OF HEALTH; MEMBER OF THE ONONDAGA COUNTY MEDICAL SOCIETY, SYRACUSE ACADEMY OF MEDICINE, AND THE AMERICAN PUBLIC HEALTH ASSOCIATION.

The treatment of tuberculosis no doubt seems to many a worn-out, threadbare subject. Probably no other single subject has been given so much attention by the medical profession, and owing to the fact that one-seventh of all the deaths of the world is still caused by tuberculosis, the matter of the treatment of this disease doubtless deserves all the attention it has received.

After all that has been said and done by the most eminent members of our profession toward the prevention and cure of consumption, the fact remains that it still deserves the first place in our efforts for the alleviation of human suffering and distress. I shall not attempt in this paper to offer anything new or original, but some recent experiences have prompted me to call attention to methods of treatment which I believe to be most valuable, and which are, I am sure, much neglected, and by many physicians entirely overlooked or disregarded—and this notwithstanding they are obviously the most rational of all methods of treatment for pulmonary tuberculosis. In the general management of tuberculosis, we are confronted with two great problems:

First, its prevention.

Second, its arrest or cure when once established.

When, in 1882, Koch discovered the tubercle bacilli and cause of tuberculosis, its infectious nature at once became positive (though often before clinically proven) and the methods of prevention plain; yet but little practical advantage was gained by way of medical treatment. Briefly, the prevention of tuberculosis is accomplished:

First, by strict attention to personal and general hygiene.

Second, by the proper management and immediate disinfection of all tuberculous sputum.

Third, by a careful municipal or town inspection of dairy cattle and abattoirs, thereby insuring pure milk and wholesome meat, and giving a guarantee against the dangers of bovine tuberculosis.

Fourth, in addition to the foregoing, segregation as far as it is possible and practicable to practise it.

In the establishment of public sanatoria for the indigent tuberculous is a field for the philanthropist, far reaching and great, almost beyond comprehension in its possibilities for good in the alleviation of suffering and the prolongation and saving of human life. Here are certainly grand opportunities for those who are fortunate enough to be able to do something for posterity.

The arrest and cure of consumption or pulmonary tuberculosis are of late becoming matters of common observation, and the question of most interest is how its arrest or cure can be best accomplished. The best results in its treatment cannot be accomplished by any special system or method of treatment, but by the election of the best combination of methods, or by individualizing treatment so as to meet the requirements or idiosyncrasies and peculiarities of each patient. The faculty of being able to individualize patients and treatment is of especial value in the treatment of consumption, and goes far toward the successful management of any disease.

While the discovery of the specific cause of tuberculosis has resulted in very much good in the general management of the disease, it has not as yet resulted in the material practical advantage that we might have expected in its medical treatment.

The continued presence of the living tubercle bacilli causes tuberculous disease in a favorable subject. "The multiplication of the tubercle bacilli and the absorption of their specific poison cause emaciation and death." To remove or destroy the bacilli without injury to the infected being, before irreparable damage has been done, is the chief object of all treatment. That the bacilli find the most fertile soil in the systems of those of feeble constitutions, low vitality, and impaired digestion, living in conditions of unsanitary environment, is well known. It is also well known that in the battle for supremacy the bacilli cannot win over a constitution which is thriving under proper nutrition.

First in importance in the successful treatment of tuberculosis are a proper altitude and atmosphere. To the late Dr. Alfred L. Loomis, more than to any other man, belongs the credit of demonstrating the importance and value a proper climate plays in the treatment of tuberculosis. Unfortunately only a small proportion of consumptives can avail themselves of the favorable influences of the North Carolina mountains or our own Adirondacks, and the remaining very numerous and ever-present unfortunates must have exclusive home treatment.

Second in importance is hygiene. As in the prevention of the disease, so in its cure, attention to personal and general hygiene plays an important part. Early and routine exercise in the open air, wherever the patient be situated, must always be insisted on for all patients able to be about.

Third, nutrition. The matter of the nutrition of consumptives is of itself too large a subject for a small paper. Suffice it to say that as far as possible a nitrogenous diet is quite necessary and always best assimilated. Many patients can digest ground beef and gain and improve upon it, when they cannot assimilate milk. Some can assimilate and with advantage partake of a considerable quantity of nuts. Certain it is that all tuberculous patients cannot be nourished alike. Always in this disease every effort must be made to encourage the taking and favor the assimilation of the most nutritious and stimulating diet. Forced or improved nutrition increases vital power, and increased or improved vitality purges the system of morbid products or processes.

Fourth, general medication. This cannot be specific, neither can we follow in a series of cases any definite or rigid rule or scheme of treatment; but we must meet impending conditions or indications, which are varied and many. Over-medication by the stomach, I believe, is a too common error in treatment, and often by its digestive disturbances prevents the more important factor of proper nutrition. There are, I believe, but two medicines worthy of special mention connected with the treatment of tuberculosis, and if given early and in sufficient quantity and judiciously they might almost be called specific in this action. They are, mentioned in the order of their value, iodoform and creosote. The use of cod-liver oil must not be insisted on regardless of the ability of the patient to assimilate it. It has, I believe, but little virtue beyond its nutritive value.

Fifth, in addition to general medication, as usually implied and to which I desire to call your special attention, is what has been termed "topical" or "intrapulmonary medication"—that is, the administration of medicine by inhalation. By inhalation, both local and constitutional effects of certain medicines can be produced as quickly and as surely as by any other way; and this method, properly employed in conjunction with other treatment, is, I believe, bound to yield a large percentage of favorable results. The remedies that can be used to the best advantage by inhalation are iodoform, creosote, pine-needle oil, terebene, menthol and eucalyptus in combination with albolene,

glymol, and glycerin. Owing to personal idiosyncrasy, one or more of these remedies cannot always be used, but the amount of these substances that can be given and tolerated by inhalation in a majority of cases is quite surprising. For this form of treatment, there are several vaporizing or nebulizing apparatuses that can be satisfactorily used.

Dr. Burroughs, of Asheville, who has had large experience in this method of treatment, recommends the daily use by inhalation of "five grains of menthol, twenty drops of terebene, twenty drops of oil of pine needles, twenty drops of eucalyptus, and twelve to twenty drops of creosote in one-half ounce of glymol." By the inhalation treatment germicidal remedies can be placed in close proximity to diseased tissues, if not in actual contact with millions of tubercle bacilli, where they may exert their beneficial effect; and it seems rational, at least, that remedies thus applied will act more surely than if required to find the way from the stomach to diseased parts through the circulation after the various changes by the process of assimilation. The constitutional or toxic effect of gases, vapors, or contaminated atmospheres is a fact well established and of common observation, and why this method of the therapeutic administration of certain remedies in pulmonary tuberculosis has not before become of more general use I am unable to say. It is rational, practical, and easy of administration, and proven of much value. For some months past I have been using this method with marked and positive and uniformly good results, and I have come honestly to believe that a physician who attempts to treat this disease without the aid of "intrapulmonary medication" neglects an imperative duty. In addition to the foregoing, I also desire to call attention to and urge the more frequent use by inunction of some animal fat, preferably that of the pig. Its use in this manner is especially advantageous where the appetite and digestion are poor, and inability to assimilate cod-liver oil has been demonstrated. Of course it is well understood that to obtain favorable results in treatment by any method or combination of methods, the disease must be recognized early and treated vigorously.

Not enough physicians are availing themselves of the advantage of the use of the microscope in the early diagnosis of tuberculosis. By an earlier diagnosis and a more vigorous treatment on the lines here suggested, I am certain a much larger percentage of patients can be cured or saved for years of comparative comfort, happiness, and usefulness.

Clinical Department.

DERMATITIS MEDICAMENTOSA.

By WALLACE W. RYALL, M.D.,
BURBANK, OHIO.

I HAD a strange case fall under my care on Monday morning, November 14, 1898. Rhoda G——, four years old, had been suffering with toothache on Saturday and Sunday. "Diamond oil"—composed of alcohol, gum camphor, tincture of capsicum, oil of sassafras, hemlock, cedar, aurantii florum, cajeput, and sulphuric ether—was applied, and on Monday morning an erythematous rash appeared all over the body, being the worst on the face. The parts were swollen and very itching. Without much treatment, except a wash of a solution of boracic acid and one of carbolic acid to allay itching, the little one recovered by Wednesday morning. What drug or drugs in the "oil" caused the dermatitis? The patient was perfectly healthy up to the time the tooth began to bother her.

A CASE OF ATROPHY OF THE UTERUS AND OVARIES.

By MARTIN F. SCHUH, M.D.,
NEW YORK.

MRS. FRIEDA W——, aged twenty-three years, married, born in Germany. The patient looks healthy and well nourished. She always enjoyed good health until four years ago, when she had an attack of peritonitis, from which she recovered after being confined to bed for three weeks. She had never given birth to children. She did not menstruate until her seventeenth year; the flow was always regular, lasted two days, and was quite profuse. About three years ago menstruation suddenly stopped and the patient thought she was pregnant, and when she saw no further signs of it she consulted a physician, who prescribed iron, etc., but without any avail.

One year after that the patient called on me. I examined her and found no signs of atrophy of the uterus or ovaries. I employed iron and uterine tonics, like my predecessor, but with no better result. I lost track of the patient until December, 1897. I then advised her to let me curette her; she consented. At the time of operation her uterus was about three inches in length, and the ovaries could be distinctly felt. This still did not aid in bringing about her menstruation. I lost track of the patient again until November 1, 1898. I then sent her to St. Mark's Hospital, and there put her under an anæsthetic to enable me to examine her better.

Upon examination I found a uterus about one-half inch long, with an opening in the cervix about the size of a pin-head. It was impossible to feel any ovaries. The peculiar feature about this case is that a year ago the uterus was about three inches in length, and it was possible to feel the ovaries.

A CASE OF PELIOSIS RHEUMATICA WITH PALLOR, BUT UNUSUALLY HIGH BLOOD COUNT.

By C. N. B. CAMAC, M.D.,
NEW YORK.

THE following case is of interest as indicating how fallacious pallor may be as an indicator of anæmia. On July 18, 1898, Mr. L—— was sent to me for blood examination by Dr. Frank Mathews, of New York. During February, March, and April, Mr. L—— had suffered from joint pains and vague pains across the shoulders, both of which later became sufficiently severe to confine him to his bed. The initial seat of the attack was the knees. When he was seen in July, the arms, legs, and trunk were covered with hemorrhagic spots, ranging in size from that of a pinhead to that of the blunt edge of a pencil. He stated that according as he wore high or low shoes the tops of the shoes determined the limit of the purpura. The pressure of garters, moreover, caused the spots to disappear, they reappearing when this pressure was removed. The case, from the history and appearance, was clearly one of purpura rheumatica. There was very marked pallor, and in order to determine the extent of this supposed anæmia Dr. Mathews wished an accurate count of the blood. Following is the report on the blood: The blood flows freely from puncture; deep, dark color; clots readily. W. B. C., 22,000; R. B. C., 6,004.000; ratio, 1 in 277. Hæmoglobin, 75–85 per cent. I regret not having taken dried specimens at the time, for the patient left for a long cruise the day after I saw him, making it impossible to do so subsequently. From fresh specimens and the stain (Toison solution) used in counting, the increase in the W. B. C. was of the polymorphonuclear variety. This I accounted for by the presence of a follicular tonsillitis. Consider-

ing, however, the high red count, the ratio of reds to whites was but little disturbed; the interest therefore centres about the unusually high red count in spite of the pallor, the hæmoglobin value at the same time being so very low in proportion. It is difficult to account for this, unless one associated the condition with the vasomotor disturbance, as seen in neurasthenia.

In the MEDICAL RECORD of June 25, 1898, M. P. Jacobi reports several cases of high red count associated with neurotic conditions, and cites J. K. Mitchell's observations on the increase after massage. To these I add the case of Miss W——, an undoubted neurasthenic, seen with Dr. Broun, August 13th. This case in spite of marked pallor had a red blood count approaching 5,000,000. Cabot treats very briefly of the blood count in purpuric conditions and reports no cases. When an actual hemorrhage has occurred the high red count immediately after hemorrhage has been noted by Thayer, in a case reported with chart of blood count in Osler's "Practice" (2d edition, p. 721). Dr. Thayer writes me in reference to the case just cited: "There was a most profuse hemorrhage on the 20th, and you see [referring to chart] how small the fall was on the 21st. Your case is most interesting. I know of no instance in which such an increase has been found."

I make no effort to explain these conditions. The possibility, however, of a peripheral engorgement, due to the loss of vasomotor tone, has more than once suggested itself. The dermatographia so active in the skin of neurasthenics is active evidence of this vasomotor instability. Is the purpuric condition an even more advanced state of unstable vasomotor tone, and is the peripheral blood count not a true index of the blood value of the system?

BROAD-LIGAMENT FLAP TO CLOSE OPENING IN RECTUM.

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SOME months ago I was called upon to operate in a case of fecal fistula, the fistula being of something like a year's duration and following an operation made by a colleague in a neighboring city for the removal of a small ovarian cyst. Both ovaries had been involved, but the operator was able to remove only one. On examining the patient the fistula was found passing directly backward, and from this fact and the character of the fæces discharged I concluded that it entered the rectum. The fistulous tract was dissected out in the usual way, its walls being found to consist of bladder and uterus in front, with exudate and intestinal adhesions at the sides and behind. On getting to its inner end it was found to enter the rectum by an opening about the size of the thumb-nail. There was great infiltration of the edges of the opening and the surrounding adhesions were very firm. Owing to the friability of the tissues I found it impossible to close this opening in the bowel. While hesitating for a moment as to what procedure I should adopt, my eye fell on the broad ligament, and my course was at once determined. The ligament was detached from the uterus down a sufficient distance to give me a free flap, and this flap was then brought around so as to cover very nicely the opening in the bowel. It was stitched fast with catgut, the remaining ovary removed, though not without considerable difficulty, and the incision closed without drainage.

Recovery was uneventful, and the patient left the hospital in about three weeks from the date of operation.

Progress of Medical Science.

The Significance of the Ovaries in Reference to the Origin of Sex.—Three years previous to the appearance of the "Schenk theory" Seligson, of Moscow, submitted a treatise on "The Arbitrary Procreation of Male and Female," based on the belief that each ovary contained different germs, the right containing the germs for the masculine, the left for the feminine, offspring. Von Winckel shows the invalidity of this belief by the following observation: In 1891 a woman was operated upon for left ovarian tumor. The entire ovary was removed. Since then she has given birth to five living children, three of whom are girls and two are boys. The theory of Seligson is, therefore, only a fancy and his conclusions are entirely worthless.—DR. WINCKEL, *Deutsche Praxis*, August.

A New Catheter.—The inherent uncertainties in the cleansing and sterilization of such instruments as catheters, vaginal and wound irrigators, etc., which are often for long periods of time in close contact with highly infectious material, has led M. B. Freund to experiment with a mode of construction which seems to obviate the difficulties. Instead of closed tubes of narrow lumen forming ideal lurking-places for dirt and contaminating elements, his appliances represent a little more than half of the usual instrument, split lengthwise. This leaves simply a long open gutter all of whose edges and angles are rounded and accessible, and which may be rendered sterile by chemico-mechanical means, without the use of heat, a thorough scrubbing with soap and water, followed by a washing with bichloride solution, lysol, or alcohol, sufficing to render it absolutely germ free. In point of practicability the instruments of this design were found to be in no way inferior to those of closed calibre, a stream of fluid flowing freely along the groove and showing no inclination to leave it. Catheters with a cylindrical extremity, the groove not running quite to the beak to facilitate introduction, acted perfectly in drawing the urine, and the various irrigators that were tested were equally satisfactory. The instruments described were of hard rubber or metal.—HABKANÄH, "Chirurgisch-gynäkologische Paxis," "Volkmann's klinische Vorträge," No. 226, October, 1898.

Three Hundred and Sixty Gall-Stone Operations.—Hans Laehr ("Die Resultate von drei hundert und sechzig Gallenstein-Laparotomien," "Volkmann's klinische Vorträge," No. 225, October, 1898) condenses his experience during the past eight years in the surgical treatment of surgical cholelithiasis. It is significant that nearly one-half of the whole number of operations recorded has been done since 1896. The total number of patients was 307, 255 being women and 52 men. The mortality was 11.7 per cent. However, of the 42 deaths reported, 30 were due to causes not directly traceable to the operation (advanced stages of carcinoma, purulent cholangeitis, etc.), thus reducing the actual death rate to 3.8 per cent. Laehr attributes much of his success to the very rigid asepsis practised. He does not use rubber gloves, but his method of sterilizing his hands takes about half an hour, and to diminish chances of infection all of his operations are done with but one assistant and one nurse. Another point of importance is the careful preparation of the patient by means of purgation and by bathing. The cases operated upon may be classified as follows: (1) Those in which the calculi were situated either in the gall bladder itself or in the cystic duct, and admitted of removal by cystostomy, cysticotomy, etc.; 180 operations were done. Of these 128 were immediate and 5 two-staged cystostomies, 7 were cystendyses, 37

cysticotomies, 2 extra-peritoneal "ideal" cystostomies, and 1 cysticolithotripsy; although inflammation and suppuration were present in two-thirds of the cases only three deaths resulted. (2) The condition of the gall bladder was such that it was either useless to the individual or even a source of danger, through the presence of ulcers, fistulæ, etc. In these, as in other cases where cysticotomy seemed less difficult than cystostomy, complete extirpation of the viscus was practised. (3) The calculi had already gained the common duct. In 46 instances they were removed by choledochotomy and in 1 by choledochotripsy; four deaths. (4) Nineteen cases in which instead of the encysted gall stones other morbid processes were found, such as gastric ulcer, floating kidney, etc., or where the gall bladder was free from calculi, but had contracted adhesions to intestines, stomach, and belly wall. (5) Besides the cholelithiasis there were present as complications advanced carcinoma of the liver, of the common bile duct, of the stomach, of the pancreas, diffuse purulent cholangeitis, cirrhosis of the liver, septic peritonitis, etc., which made treatment difficult or impossible; there were 46 cases, 27 ending fatally. What is needed is greater care in the diagnosis, and an effort should always be made to recognize one of the following conditions: (*a*) Gall stones in gall bladder without occlusion of the cystic duct; apt to be confounded with gastric affections. (*b*) Gall stone in gall bladder with temporary occlusion of the cystic duct. (*c*) Cholecystitis, hydrops, and empyema of the gall bladder. (*d*) Pericholecystitis, adhesions. (*e*) Acute occlusions of the common bile duct. (*f*) Chronic occlusion of the common bile duct. Jaundice is usually absent in conditions *a* to *d;* in *e* and *f* it is generally but not always present. The conclusion is drawn that in suitable cases operation is to be recommended, and gives permanent relief (not a single case of recurrence was observed), and the patient's chances are better the sooner his condition is recognized and subjected to surgical treatment.

Action of Alcohol and Its Uses as a Food Accessory.—We may briefly summarize the present state of our knowledge as to the action of alcohol and its uses as a food accessory: (1) It is to some extent a food, but is seldom taken except as a stimulant. (2) It can be used up in the body as a source of energy and heat, but the heat produced by it is rendered worse than useless owing to the greater heat loss brought about by the dilatation of the vessels of the skin. (3) Alcohol is of no use to healthy men who take sufficient food for their daily wants. (4) In moderate doses, and well diluted, it is not harmful to healthy men under ordinary conditions. (5) Alcohol acts injuriously in all cases of exposure to great cold or to severe and continuous exertion, such as in Arctic expeditions or mountain-climbing. (6) If taken with meals in moderate doses it is often beneficial, as, after much of the alcohol has been absorbed, the secretion of hydrochloric acid increases often to more than double the proportion to which it otherwise would attain. The secretion of acid also continues longer than when no alcohol has been taken. (7) Alcohol seldom has this stimulating effect if the stomach is diseased.—Dr. A. Lockhart Gillespie, "The Natural History of Digestion," page 355.

Albuminuria during Pregnancy.—Charles, as the result of his researches, offers the following conclusions: (1) In most pregnant women there is a certain degree of auto-intoxication; this is the normal toxæmia of pregnancy. (2) In lesions or disease of the kidney or liver the toxic condition becomes aggravated and may lead to grave complications, notably uræmia. (3) Toxæmia of renal origin is the most common, associated with albuminuria and œdema. (4) Albuminuria is not the cause of eclampsia, but a symptom owning a common origin. (5) Grave complications, such as coma, dyspnœa, paralysis, may prove fatal in the absence of eclampsia. (6) In most cases toxic eclampsia breaks out in albuminuric women; albuminuria is therefore an important precursory sign which should not be neglected. (7) The author's statistics show that 1 pregnant woman in 40 is albuminuric, and that of 4 albuminurics 1 develops eclampsia; eclampsia without albuminuria is rare—1 case in 9—and is less serious. (8) Albuminuria alone without eclampsia has often serious or fatal consequences—in 110 cases 8 women and 20 children died; there were 61 premature labors, 8 post-partum hemorrhages, and 3 cases of threatened convulsions. (9) Albuminuria should be looked for in all pregnant women. (10) Every albuminuric pregnant woman should be actively treated, a milk diet being the best. (11) In case of threatened danger premature labor is indicated and gives excellent results.—*Indian Medical Gazette*, September.

Air Emboli in Placenta Prævia.—Dr. F. Zorn, of Memmingen (*Münchener medicinische Wochenschrift*, 18), reports the case of a woman who had already borne twelve children and had been well, until one morning about four o'clock she awoke with hemorrhage from the genitals. About eight o'clock this became more profuse, and Dr. Zorn, who was called by the midwife, found the pains weak but of long duration. Vaginal examination showed the presence of large coagula; the os was wide open, the placenta covering the internal os; the head was felt by ballottement. Upon the arrival of an assistant the patient was prepared for operation under chloroform narcosis. The placenta, which encircled the entire os, was then perforated at a point opposite that on which the head impinged, the membranes were ruptured, podalic version was performed, and delivery effected. The placenta was delivered by the Credé method. The condition of the mother was good, the pulse full, hemorrhage slight. Inertia uteri occurred and the bleeding increased in spite of hot douching and the administration of pulverized ergot (0.5 gm. three times in two hours). About three hours after the birth of the child the patient became very restless, and tried to sit up; her face became anxious, the pupils dilated, corneæ dusky, sweat on forehead, with frequent thready pulse. Within ten minutes the patient recovered completely, but a peculiar rapid and deep respiration appeared. This also disappeared; but within half an hour the patient relapsed into her former condition, and recovered for the second time, only to relapse for the third time with symptoms of heart failure. From this attack she never recovered. Twenty-six hours later cross section of the uterus showed at the placental site square and slit-shaped vascular openings, some filled with clots, others entirely empty. Pressure caused the escape of blood mixed with air. The left ventricle and auricle were entirely empty. Upon section of the right ventricular wall numerous small and large air bubbles escaped from the cut surfaces. The entire right ventricle was filled with air bubbles. The right auricle in addition to these air bubbles contained also a small quantity of fluid blood. Putrefaction did not in this case enter as a factor. The writer concludes that primarily the air reached the placental site at the time of the passage of the surgeon's arm into the uterus, and then after the birth of the child was secondarily forced into the venous system by the massage given the uterus.

Verruca Vulgaris.—Apply green soap spread on flannel; keep on day and night, if possible. At the end of a fortnight scrape off the wart.—Vidal.

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MALIGNANT TUMORS AND ERYSIPELAS.

THE question of the action of erysipelas and other acute infectious processes upon the course of malignant growths, or certainly some forms of them, persists in coming up from time to time, and the number of cases of apparent cure which must be considered well authenticated is steadily increasing. By "well authenticated" we mean cases in which a careful clinical and microscopical history is available. Richardson (in *Annals of Surgery* for December, 1898) reports a case which undoubtedly comes in this category, and which is of further interest from the fact that the infectious process did not have the ordinary symptoms of erysipelas, but was a deeper inflammation with the formation of much pus. The growth was a recurrent small round-celled sarcoma, and was of large size and, as it appeared, inoperable. During the healing of the operation wound infection occurred, and there were severe local and systemic disturbances. After the subsidence of these the tumor began to disappear, and eventually left no sign of its existence. Such results, even when occurring only once in many cases, must make us think of greater possibilities and stimulate us to investigation, though progress must necessarily be slow on account of the uncertain and unmanageable nature of the agent. Several writers have reported similar experiences often among a series of failures or doubtful results, and the idea seems now pretty firmly fixed that the erysipelatous process, and perhaps some other acute bacterial infections, exercise a powerful and sometimes destructive effect upon the cells which constitute certain malignant new-growths. All observers agree that sarcoma is the form of growth most regularly influenced by such treatment, and that carcinoma is very little and very irregularly affected. As we have noted, our agent is unmanageable and dangerous, and unfortunately, it is most dangerous when most efficacious. The virulent cultures of the erysipelas coccus have given the most satisfactory results as far as the growth is concerned, but in several instances have caused death from their own action. If the explanation of the results in these cases is that the bacteria, by their metabolism, produce certain substances which we may call toxins, fatal to those cells which have assumed an atypical course of growth and form the neoplasm, and thus cause them to disintegrate and be absorbed, we ought to be able to discover some way for the regulation and accurate application of such qualities as these particular organisms possess. If we can do this, we may yet have a very potent weapon against sarcoma, and possibly along similar lines may be able to combat the more dreadful carcinoma. Most experimenters have spoken of the necessity, or at least the usefulness, of making injections of these bacterial agents into or near the growths. If the favorable action of such material is systemic in character, the result ought to be as good, no matter where the injection is made, but if the action is purely local, like a caustic or a local antiseptic, we should reasonably expect only a local result, and consequently no *cure*. Experience has, however, shown that better results have been obtained by local injections, and the explanation probably is that the action is systemic and through the circulation, but that perhaps when used locally the virus has less chance to become attenuated and reaches its objects of attack in a more concentrated form. It is clear that a substance depending upon a more or less coarse local action could have no effect upon a metastasis which might be microscopic, and in the cases of sarcoma reported as cured we are justified from the descriptions, even without proof, in concluding that there were metastases, and that the action of the agent was systemic. The treatment of malignant disease is one of such great importance that we ought carefully to consider everything from scientific sources upon the subject, and, though it is a mistake to be sanguine, we must in connection with this subject rather seek explanations than deny facts. Whether the destructive action of these bacterial poisons upon the cells of malignant growths helps the theory of their parasitic origin is very doubtful.

THE ORAL METHOD OF TEACHING THE DEAF AND DUMB.

IMMENSE strides have been made in the methods used to teach those afflicted with deafness and dumbness to be able to communicate with ease among themselves and with their fellow-creatures. In no country has this advance been more marked than in the United States. The obstacles in the way of teaching deaf-mutes were for long believed to be insurmountable, but, thanks to the persistent and ungrudging labors of a small band of earnest men, these difficulties have been successfully overcome, and at the present time a deaf and dumb child can in most instances be taught to earn his own living, and instead of being regarded as a useless encumbrance becomes an independent member of society. As may be well believed, however, this happy result has not been reached without the expenditure of infinite pains and trouble. In order to show the great change that has come over the minds of experts in treating the deaf and dumb within the past thirty years, we will first quote the opinions of Mr. Turner, one of the early principals of the American School at Hartford, Conn., and then give an extract from the 1898 report of Mr. Job Williams, the present principal of the American School. In 1867 Mr. Turner

said: "The attempt to teach articulation has never been a part of the regular system of instruction of the deaf and dumb, and I hope never will be. We can give them a measure of vocalization—imperfect, to be sure—we can teach some of them to pronounce, parrot-like, words something in the way we do; but we cannot make them (the deaf-born) understand the use of vocal language, with its articulation, its emphasis, its point. It has never been done; it can never be done."

In 1898 Mr. Williams made use of these words: "The aim of all school instruction should be to aid the pupil to master the English language in order that he may have easy communication with the hearing world about him through the English language, by spoken English where possible, but where that proves impossible, by written or spelled English.

"Even a small degree of speech is valuable. Teach speech, speech, speech by all means and to the fullest degree, and use it whenever practicable, in school and out of school. Encourage it at all times, and let non-English means of communication be discouraged wherever the English language will answer equally well. English, either spoken, written, or spelled, is in the main the language of our school exercises."

The history of the rise of the oral method is both instructive and pathetic. The late Hon. Gardiner Greene Hubbard, of Washington, D. C., had a little girl who was deaf, and it was due to his unsparing efforts to devise a better method of instruction than the one then in use, for the sake of his deaf child, that the present oral system in this country sprang. There has recently been a somewhat sharp controversy between the exponents of the oral system and those who support the sign-language method. Mr. Alexander Graham Bell, the champion of the oral system, puts the case plainly for the supporters of articulation:

"I believe in the use of natural actions and natural gestures as hearing people employ them—not in any other way. I believe it to be a mistake to employ gestures in place of words, and natural pantomime or sign language of any sort should not, I think, be used as a means of communication. I do not object to manual alphabets of any kind in the earlier stages of instruction. I prefer the pure oral method to any other, but I would rather have a deaf child taught through De l'Epée signs than not educated at all. I think there are two classes of deaf persons who should certainly be taught by oral methods, the semi-deaf and the semi-mute; and I think that all the semi-deaf should receive the benefits of auricular instruction. . . . In my preference oral methods come first, the manual alphabet method second, and the sign-language method last."

In an article published in the MEDICAL RECORD of April 2d of this year upon the training of the deaf, we gave statistics of the number of schools for the deaf throughout the world and of the methods used in teaching therein. We then pointed out that in the great majority of schools for the deaf outside this country the pupils were instructed by means of articulation and lip reading. In North and South America teaching by signs still holds sway. We do not question that the deaf and dumb are as well and as carefully taught in the United States as in Europe, but if it has been shown that the oral method is the better—as it certainly appears to have been shown—why, then, should it not be universally adopted here? Of course oral methods differ. In Europe several modes of teaching by speech and other vernacular means are practised, but according to all published accounts the instruction of the deaf and dumb in lip articulation has in this country been brought to a high state of perfection. It would then seem to be surely advisable to have one efficient uniform system in force throughout the continent.

THE PREVALENCE AND PERVERSITY OF KISSERS.

DESPITE persistent effort on the part of several of our contemporaries to put an end to kissing, the practice has been quite generally continued, especially by youthful and thoughtless persons, and in some quarters the custom has seemed even to increase and flourish. In addition to the dangers already pointed out new ones have arisen.

In a kissing contest for £5 a side, which has just been declared off in a small town in Lancashire, the challenger sank exhausted at the seven-hundredth smack; his opponent having scored eighteen hundred in the hour.

Over in Germany at about the same time a young lover wrote to his sweetheart that he sent her ten thousand kisses. She sent back word that that was all well enough on paper, but that he had not the nerve to perform the feat in a truly manly way. This challenge was likewise accepted, and ten hours' time was allowed with brief intervals for malt refreshments. At the end of the first hour the score was two thousand and the condition of both active and passive participant good. One thousand more were added in the second hour, but at the seven hundred and fiftieth kiss on the third round the young man's lips became paralyzed and he lost consciousness. This fate, which some might consider merited, should prove a warning to promiscuous kissers as well as to those who concentrate with persistence. It is not paralysis alone, but insanity, which may follow such efforts.

Only a few weeks ago a middle-aged man attempted the feat of embracing every woman on a busy shopping street of this city. He had to be locked up by the police to prevent his over-exertion; but these efforts in his behalf were not timely enough, for the next day he was found to be a raving lunatic. During the past week a man of sixty years, whose name indicated his disposition, went mad after an attempt to kiss all the women on an elevated train. Sometimes the effects are remote, or what the French would call *à résistance;* that is, the husband of the party kissed becomes enraged almost to a point of madness. In Morristown, for example, a husband has been suing his coachman because the latter kissed the wife of the former; but it was shown that the coachman merely allowed himself to be kissed repeatedly without returning the salute, and the law holds that this constitutes no cause of action. Thus we see that so many

effects are directly or indirectly attributable to osculation that the whole chapter of its pathologic and sociologic features will have to be rewritten. Certain it is, in view of the more recent exploits of our young impressionable and ambitiously amatory naval hero, that we are rapidly accumulating data which may enable us in time to form entirely new theories on lip service, and new notions on the actual working capacity of the puckering muscle.

PECULIAR PEOPLE.

The name "peculiar people," adopted by certain persons who are banded together to believe certain things and to act in certain ways, is so much more appropriate than that by which others holding similar beliefs are known, that it is earnestly hoped the term "Christian science" may be forever banished. The force of this must appeal to all, whether within or without the fold.

Those who know most deeply the teachings of the Concord seeress and her followers need not be told that the precepts and practices are essentially unchristian and eminently unscientific. On the other hand, it needs but the most casual acquaintance with the preceptors and practitioners to discover their glaring peculiarities. If a man approaches you with the statement that "there is nothing so material about disease as to prevent its cure by a belief that it does not exist," and he tells you he is "peculiar," you are much more apt to become interested and not to wonder at him the next day when you meet him hurrying to a dentist's with a jumping toothache. And right here is another evidence of peculiarity—that a believer will employ a dentist when he will spurn a doctor.

Physicians have been truly patient in long-suffering, and it is time an end was made of this merry madness which so mixes the practices of religion and medicine. Some States have already insisted on the lines being sharply drawn between the two, and that those who desire to enter as competitors with us must possess themselves of the requisite diploma. Judges have frowned upon their practices from the bench, lawyers have held the matter up to ridicule, preachers have instructed their hearers, and journalists have done their part. The physician, however, either from modesty or indifference, alone of all the liberal-minded leaders of thought whose duty it is along with others to instruct and protect the ignorant, has made but feeble protest. When he does speak, it should be in a voice rising from every State, and long and loud enough to penetrate to every legislative hall. Its tones should not be uncertain, but a demand should be made that existing medical laws be enforced and wherever necessary new ones be enacted. By their own showing, it is a new system of medicine rather than a new religion which these peculiar people claim the right to practise without permitting the law to inquire into their qualifications. As enlightened citizens, if in no other capacity, physicians have a clear and pressing duty to perform.

News of the Week.

The Influenza.—In connection with the present invasion of influenza, which has been officially declared to be epidemic in New York City, the following table of deaths from this disease, which the board of health has had prepared, is of interest:

	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
January...	264	1	281	5	71	242	16	10	0
February .	30	0	109	4	33	165	18	28	8
March....	12	45	50	47	29	84	17	64	16
April.....	3	507	20	86	16	44	26	51	16
May.....	1	123	13	30	5	15	5	21	2
June	2	34	3	9	6	2	0	4	2
July.....	0	4	1	0	4	0	1	1	2
August...	0	3	0	0	1	1	1	0	0
September	0	0	0	2	0	0	0	2	0
October...	0	4	4	4	4	2	2	2	0
November	1	4	13	5	6	4	4	3	12
December.	1	129	5	35	13	8	11	10	0
	314	854	495	227	188	567	101	196	58

Clinical Conferences on Diseases of the Skin.—Dr. L. Duncan Bulkley is now delivering his annual course of clinical lectures in dermatology at the New York Skin and Cancer Hospital on Second Avenue and Nineteenth Street. The lectures are given in the out-patient hall of the hospital every Wednesday afternoon at 4:15 o'clock. The course is free to physicians and is well attended by practitioners, both resident and visiting.

State Superintendent of the Poor.—President Stewart, of the New York State board of charities, has designated Secretary Hebbard to exercise the authority appertaining to the position of superintendent of State and alien poor, recently made vacant by the death of Dr. Charles S. Hoyt.

A Suit Against the New York Hospital.—The State board of charities has requested the attorney-general to institute proceedings against the Society of the New York Hospital, in New York City, to require the managers thereof to permit an inspection by the board's representatives of the hospital maintained by the society, and to make an annual report of its financial and other operations on the blanks provided by the board. This action is the culmination of a long dispute between the board of governors of the New York Hospital and the State board of charities. The contention of the Society of the New York Hospital is that it is not amenable to the law affecting charitable institutions. Its reports have always been made direct to the legislature, and it has refused to permit the board of charities to inspect its records, and will not use the blanks provided by the board in making a report of its expenditures and receipts.

The Report of the American Pediatric Society.—The following appeared in the *Archives of Pediatrics* for December, 1898: "The publication in mutilated form by the Medical Record of the American Pediatric Society's report on scurvy, we beg to say was not the fault of the recorder. Duplicate copies of complete corrected proof were sent to all the journals who

were to receive the report. The responsibility of the recorder ceased with the mailing of the proof copies, for he could not enforce their correct publication. If the society publishes its reports in all kinds of journals, it must expect to see them sometimes mutilated, as they have been in some instances each year." The responsibility for the publication in "mutilated form" of the report rests wholly upon Dr. Floyd M. Crandall, recorder of the American Pediatric Society. The report was published in the MEDICAL RECORD at his request, and exactly as it was sent by him, without additions or omissions. The existence of a minority report was unknown to the editor of the MEDICAL RECORD until a note from Dr. Caillé, the author of the minority report, called attention to its omission. If there was any mutilation of the American Pediatric Society's report it was done by the recorder of the society and not by the editor of the MEDICAL RECORD. We hope we have made our meaning plain.

The Insane of Havana.—A despatch to *The Sun* says that Dr. Archinard of the American commission has reported that there are three hundred and fifteen insane patients in the Havana asylum. Of these one hundred and seventy are sick and the remainder are starving and have no clothing. During the past year seven hundred and twenty patients died of hunger. The American commission has ordered fifty thousand pounds of food to be supplied to the insane asylum.

Circular of Information for those Seeking Appointment as Contract Surgeon in the United States Army.—The following requirements are exacted by the board of examiners: Evidence of graduation at a regular reputable medical college, diploma to be submitted to the board. Proof of hospital or other professional experience will be of benefit to the candidate. Candidates must be in good health, of reasonably sound physique, and citizens of the United States. The examination is of a practical nature, embracing hygiene, practice of medicine, pathology, and surgery. In addition a thesis on some professional topic will be prepared by the candidate. The following questions submitted to former candidates are published as a guide to applicants: 1. What chemical and physical qualities of water would lead you to suspect its potability? 2. What are the varieties and pathology of felon? 3. What is Widal's test? 4. What are the modern methods of treating diphtheria? The pay of acting assistant surgeons is $150 monthly. The applicant must be free from physical defects which would incapacitate him for the military service. For further information address Major H. S. Kilbourne, surgeon United States army, Army Building, 39 Whitehall Street, New York City, president of board of examiners.

A Thaumaturge or ——— .—Some one given to understatement recently spoke of the "Christian scientists" as "pests," and thereby drew forth a letter to *The Sun* from the high-priestess of the sect. Among other things the veracious writer says that she has "healed consumption in its last stages, that the M.D.'s, by verdict of the stethoscope and the schools, declared incurable, the lungs being mostly consumed." She also "healed malignant tubercular diphtheria (*sic*) and carious bones that could be dented with the finger, saving them when the surgeon's instruments were lying on the table ready for their amputation." She was called to New Hampshire to see a patient who was said by her physician to be dying of pneumonia, and she immediately restored her. She has "healed at one visit a cancer that had so eaten the flesh of the neck as to expose the jugular vein so that it stood out like a cord."

The Crusade against Tuberculosis in England.—The Prince of Wales called a meeting recently at Marlborough House to devise measures for infusing greater energy into the movement in England to cope with the increase of tuberculosis.

The Hospital Stamp Scheme, by means of which a fair amount of money was raised last year for the benefit of the London hospitals, has this year fallen flat. Philatelists have decided that they are not real stamps, since they will not be received for postage, and so they do not care to add them to their collections.

Dr. S. S. Adams, of Washington, lectured by invitation of the faculty before the seniors of the University and Bellevue Hospital Medical College, December 20th, at the hour of the usual pediatric lecture. His subject was: Fevers in children, their significance, general diagnostic value, and antipyretic treatment.

Dr. J. Francis Calef, of Middletown, has been appointed Surgeon-General on the staff of Governor-elect George Lounsberry, of Connecticut. Dr. Calef is a graduate of the Yale Medical School, in the class of 1880.

Smallpox at Norfolk.—There are about fifty cases of smallpox under treatment in the pest-house at Norfolk, Va. All of them are negroes. Some cases were discovered one night among the prisoners at the station-house, and, as a consequence, the police court suspended the following day.

Dr. Thomas H. Manley was, on the 15th of this month, re-instated as visiting surgeon to Harlem Hospital. Dr. Manley was one of twenty-eight physicians removed by the late Commissioners of Charities, to make room for medical-college appointees. Under the present *régime* all the hospital appointments are taken from the control of the colleges.

The Smoke Nuisance.—The health-board inspectors are apparently unable to cope with the growing smoke evil in this city, and the president of the board has requested that the police report on all violations of the law in this regard. Accordingly, any patrolman who happens to see a chimney belching out black smoke will be required to report his discovery to the sergeant at the station house, who will report to the captain, who will notify the inspector, who will tell the deputy chief, who will forward the news to the chief, who will report to the board, which will have the facts laid before the health board in order that its

inspectors may investigate them and report on them to the chief inspector, who will then report to the board that the law is being violated.

"The Medical Dial" is the name of a new monthly medical journal, published in Minneapolis, under the editorial management of Dr. J. W. Macdonald. The first issue is dated December, 1898.

The University of Berlin.—About eleven thousand students are in attendance in the different faculties at the University of Berlin this year, one hundred and fifty of them being Americans. Of the total number about six thousand are regularly matriculated, the others being simply auditors who are admitted to the lectures but cannot come up for a degree. Among these are two hundred and thirty women.

The Study of Tropical Diseases in England.—In addition to the London school for the study of tropical diseases, a similar one is to be established in Liverpool. A resident of that town has promised an annual donation, amounting to about seventeen hundred and fifty dollars, to maintain a laboratory in Liverpool for the study of tropical diseases, and the scheme will be carried out by a joint committee of the Royal Southern Hospital and of University College. A laboratory for immediate investigation will be built opposite the hospital, while prolonged research will be carried on in the pathological laboratory of University College. The Royal Southern Hospital receives constantly a large number of cases from the West Coast of Africa, as Liverpool is the centre of the African trade.

An Anti-Spitting Ordinance in Indianapolis.—Dr. E. D. Moffett, member of the city council of Indianapolis, and active in good sanitary work for the city, has fathered an ordinance, which will doubtless be passed, forbidding spitting on the sidewalks, in cars, and on the floors of public buildings of the city. He is backed by the public sentiment of all decent citizens, and by the good and representative women of the Indianapolis Sanitary Association. It is to be hoped the ordinance will be enforced, and not become a dead letter.—*Indiana Medical Journal.*

The Thirteenth International Medical Congress.—At a meeting of the organizing committee, held in Paris on November 15th, the arrangements for the forthcoming Thirteenth International Medical Congress were completed. The date of the meeting is fixed for the week August 2d to 9th, 1900. The work of the Congress will be distributed among five groups of sections composed as follows: Biological Sciences: Descriptive and Comparative Anatomy; Histology, Embryology, and Teratology; Physiology and Biological Physics and Chemistry; Anthropology. Medicine: General Pathology and Experimental Pathology; Bacteriology, Parasitology; Pathological Anatomy, Medical Pathology, Hygiene and Medical Pathology of Infancy; Therapeutics and Pharmacology; Neuropathology; Psychiatry; Dermatology and Syphilography. Surgery: General Surgery; Surgery of Children; Urinary Surgery; Ophthalmology; Laryngology; Rhinology, Otology. Obstetrics and Gynæcology: Obstetrics; Gynæcology. Public Medicine: Hygiene, Preventive Medicine, and Epidemiology; Forensic Medicine; Military Medicine and Surgery; Naval Medicine; Colonial Medicine. French is the official language of the Congress for all international relations. In the general meetings and in the sections German and English as well as French may be employed.—*The British Medical Journal.*

The Population of France Increasing Slightly.—An official report recently issued in Paris shows that the population of France in 1897 increased 108,088 over that of 1896. This is due to a decrease in the death rate, the birth rate showing no increase.

Suicides of Children in Germany.—The statistics of German schools, recently published, for the decade from 1887 to 1896 inclusive, show that 407 pupils of the state schools committed suicide in that period. Of these, 331 were boys and 76 girls, all under fifteen years of age.

Cremation in Australia.—A bill to regulate cremation, drafted by the council of the Cremation Society, has been introduced into the Legislative Council of Victoria. It provides that trustees of cemeteries may undertake cremation instead of burial, and expend moneys for that purpose and charge fees. No cremation is to take place without the production of two special medical certificates.

Family Insanity.—Three brothers in a town near Albany recently went insane. The first died in the State Hospital at Poughkeepsie, the second was adjudged insane after examination by a commission, and the third was seized the following day while brandishing a couple of revolvers with which he wished to kill some people who, he said, were shadowing him with the design of kidnapping. There is no previous history of insanity in any branch of the family, and no cause for the triple outbreak is known to exist.

The Dangers of a Medical Practice.—A New York drummer was recently found dead in his bed in a Cincinnati apartment house. The wife made a complaint to the police that her husband had been killed by the physician, who had given him an overdose of morphine. The latter admitted having given the man, who was suffering from delirium tremens, two hypodemic injections of one-fourth of a grain each of morphine. The coroner after an examination found that death was due to acute alcoholism and not to opium poisoning.

A Malarial Conundrum.—The Rome correspondent of the *Lancet*, commenting on the claim of Grassi to have preceded Bignani in the discovery of the malaria-bearing mosquito, suggests that it would "be of interest to know the distinguishing marks of his 'special mosquitoes,' so as, *inter alia*, to understand how it is that in Rome, where there are no mosquitoes properly so-called, malaria is prevalent, while in Florence, where mosquitoes (properly so-called) abound, there is no malaria at all."

Prohibiting the Importation of Pathogenic Microbes.—The government of Victoria, Australia, has put its collective foot down on the attempts of scientists to introduce strange microbes into the country. A medical man who recently returned to Melbourne from India, where he had been studying the plague, brought with him a stock of plague bacilli. The authorities of Melbourne strongly objected to the bacilli being imported and asked for their surrender. The medical man is said to have declined to give up the microbes unless compensated to the amount of fifteen hundred dollars, whereupon the authorities seized the culture tubes and destroyed them.

Intervention vs. Interference.—Dr. Winn, editor of the *Richmond Journal of Practice*, protests against the use of the word "interference" when one speaks or writes of operative or surgical treatment. He holds that the proper word to employ in this sense is "intervention," and he hopes to learn in time of its general adoption by writers on surgical subjects. We think, however, that, in the case of an assault upon a patient by disease, the surgeon has a perfect right to "interfere" in behalf of the patient. It's all in the point of view.

Poisoning from Clothes.—The New York *Herald* of December 4th, in its London letter, says: "The *Lancet* calls attention this week to new danger to life of poisoning by one's own clothing. The discovery was made by Dr. Godfrey Taunton, a physician in the General Hospital at Birmingham. First, one workman came to the hospital suffering acute agony from a severe rash on his wrists. Another man entered complaining of the same thing, but in addition he had the same rash on his knees. Soon after many others, all in one employ, appeared at the hospital suffering alike. Then it transpired that the workmen had been served with new overcoats. The cloth was found to contain zinc chloride. The day being wet, the men absorbed some of the poison when it was brought into contact with the skin, causing severe pain and a most irritating itch."

Hospital for Tropical Diseases in London.—The *London Times* in a recent issue says: "The arrangements of the Colonial Office for promoting the study of tropical diseases would appear, from a circular just published, to have been carried very nearly to completion. The circular sets forth that the directors of the Seamen's Hospital at the Albert Docks, which offers exceptional opportunities for studying cases of tropical disease, are providing the necessary buildings and teachers for the accommodation and instruction of the medical officers who may hereafter be selected by the Foreign Office or the Colonial Office for appointment in the tropics, and these facilities will also be made available for medical men without official status, but who, either as missionaries or in any other capacity, may desire to proceed to countries where the special knowledge in question will be required. There will, in short, be established in London a distinct school of tropical medicine, to be supported partly by a subsidy from the government, partly by the fees of students, and partly by the voluntary contributions of the public, and having for its object to instruct young practitioners who have completed the ordinary professional curriculum and obtained a legal qualification to practise in various forms of special knowledge which in this country possess scarcely more than an academic interest, but which in tropical and sub-tropical regions are of daily application in the cure of disease and in the preservation of life."

An Even Tally.—During one week in November the number of boys born in London was exactly the same as that of girls, namely, 1,348. During the same week the births exceeded the deaths by 1,290.

The American Gastro-Enterological Association.—The next annual meeting of this association will be held in Washington in May, 1899. The president of the society is Dr. D. D. Stewart, of Philadelphia, and the secretary Dr. Charles D. Aaron, of Detroit, Mich.

The "Archiv für physikalisch-diatetische Therapie in der ärztlichen Praxis" is the title of a new monthly journal devoted to hydrotherapy, gymnastics, massage, and "diet cures," which is to appear in January, 1899. The editor is Dr. Ziegelroth, of Berlin; the publisher, Max Richter, of the same city.

American Mission Hospitals in Ceylon.—A hospital for women and children has been opened at Jaffna, Ceylon. The funds were collected by the Misses Leitch, and the hospital was handed over to the American Mission. At Inruville a hospital has also been opened under the American Mission. This latter institution has been placed in charge of Dr. Isabella Curr.

Degrees for Christian Scientists.—Mrs. Mary Baker Eddy, the founder of Christian "Science," has just completed the examination of a class of about seventy students and has conferred upon them a degree of the Massachusetts Metaphysical College empowering them to go forth as "healers and as teachers of this system of medicine, whose only crowned head is divine sovereignty, whose only priest is spiritualized man."

School Inspection in Japan.—The minister of education of Japan has issued an order that inspectors shall visit the public schools of the empire once every month during school hours and report upon any matter of defective sanitation which may come under their notice. Hitherto the law has required the inspectors to visit the schools only at the beginning and the end of the school year.

Hospital Enterprise.—The editor of the *Cincinnati Lancet-Clinic* relates a story of hospital enterprise that, we regret to say, is not unique. A wealthy citizen of a neighboring city applied to a hospital to secure the services of a trained nurse for his daughter, upon whom a surgical operation was to be performed. The hospital authorities suggested that it would be better to send the young woman to the hospital, for there the surgeon's services would be given free, and as a further inducement the father was informed that he could

secure a room, board, and all needed nursing in the hospital for eight dollars per week, while a good trained nurse would charge him twenty dollars per week to do her work in his home. The offer was naturally accepted, and after a little bargaining the man agreed to pay two dollars extra per week, which he was assured would provide his daughter with all possible needs while she would be an inmate of the hospital.

Insane in Indiana.—According to the Indiana State board of charities, the number of insane in that State is approximately forty-three hundred, or one in six hundred and seventy-five of the present population. The proportion of insane in Indiana is less than in the States of Ohio, Michigan, Illinois, Wisconsin, Minnesota, and Iowa. In some of the New England States, however, it is only about half what it is in Indiana.

Fixing the Blame.—A clergyman in Wales is reported by *The Lancet* to have preached a sermon recently, in the course of which he said that "diphtheria is now prevalent in our midst, and many parents, made disconsolate by the deaths of their children, in their moments of despair have doubtless felt inclined to blame Providence. Do not blame Providence; blame the Swansea corporation, and blame yourselves for allowing the laws of sanitation to be ignored."

The New York Mycological Club, which was founded in 1897, now has over one hundred members. The objects of this club are "to identify and classify the larger fungi of the United States, especially the edible species and noxious and poisonous kinds which may be mistaken for them; to arouse a wider appreciation of the value of a cheap and abundant food supply, which in America is comparatively neglected; and to hold exhibitions, give lectures, and issue publications pertaining to the subject." The statement is made that over sixty varieties of edible mushrooms have been collected by members in the neighborhood of New York since the club was established.

The Late Colonel Waring and the Streets of New York City.—In the *Cosmopolitan* for December is a short but eulogistic article on the late Colonel Waring, in which his methods of clearing the snow from the streets of New York are compared with those now in force, needless to say by no means in favor of the measures employed by his successor. A brief sketch is given of Colonel Waring's way of overcoming the difficulties in his path, and reference is made to the differences of opinion in regard to the appropriations as follows: "Then came a dispute about appropriations. Colonel Waring demanded what was right. The public took sides with Waring. From that time out he held the public confidence. He was so highly respected that even the meanest and mangiest curs refused to bark at him in print. His lesson in organization has not been lost. The city of New York will not permit a reversion to old methods." Certainly the citizens of New York should not permit a reversion to the old slipshod methods of street cleaning, and they should distinctly impress this fact upon the minds of the powers that be. During the late blizzard, however, it appeared as if there had been a decided lapse.

The British Pharmacopœia.—An edition of twenty thousand copies of the new British Pharmacopœia has been exhausted, and a second edition is on the press.

A Clerical Pelopathist.—A German Lutheran pastor has developed a new therapeutic system, or rather has revived an old one, which consists in remaining in constant contact with mother earth. Those who cannot always lie in mud must roll about in it until they get a thick coat, and then refrain from rubbing it off. At night the sick must sleep on the ground. The reverend gentleman says man was created from mud, and so he must resort to mud for his re-creation when ill. He is at present building a sanatorium for the accommodation of his large and ever-increasing clientèle.

The Tsetse-Fly Disease.—A committee, which was appointed some time ago by the British Royal Society to investigate the tsetse-fly disease, has made its report. It finds that the disease affects a greater variety of animals than was at first believed. It also states that no means of prevention or cure has yet been discovered. Dieting appeared to have no effect upon the course of the disease. Inoculation with kindred parasites from the ordinary rat was tried; also the injection of bile from diseased animals, this fluid having been found to be soon fatal to the micro-organism, when mixed with infected blood in a test-tube. Serum was taken from diseased animals and from those which were either immune or decidedly refractory, but without the slightest effect. Even young animals, born from infected mothers, are no more resistant than others.

A New York Philanthropist in St. Louis.—A few days since a man was shot in a thickly settled part of the city. A crowd assembled, and Dr. W. E. Aughinbaugh, of New York, who was passing, turned his attention to the wounded man. The police arrived shortly after, and found the doctor working to revive the unconscious victim. They mistook his hypodermic syringe for a revolver! They immediately placed him under arrest, in spite of the protests of the crowd and his evident innocence! Although he made no resistance and signified his willingness to go to headquarters, this was not allowed. The majesty of the law, as impersonated by its officers, wished to make a show of force, and they proceeded to do so—tearing his clothing and ignominiously loading him into the patrol wagon, in which he was taken to headquarters. No explanation or communication with friends was allowed; he remained in a cell two hours, and was then discharged with a lame apology for the hasty conduct of the officers.—*The Medical Fortnightly.*

Col. W. H. Forwood, assistant surgeon-general, has been relieved from duty as attending surgeon, United States Soldiers' Home, near this city, and ordered to San Francisco for duty as chief surgeon of the department of California, to relieve Lieut.-Col. J. V. D. Middleton, who is about to retire from active service.

New Officers of the New York Academy of Medicine.—The following officers of the Academy were elected at the stated meeting held December 15th: *President*, Dr. William H. Thomson; *Vice-President*, Dr. Herman Knapp; *Trustee*, Dr. E. G. Janeway; *Treasurer for the Trustees*, Dr. W. F. Cushman; *Member of the Committee on Admissions*, Dr. Reginald H. Sayre; *Member of the Committee on Library*, Dr. A. Caillé; *Delegates to the State Society*, Drs. J. H. Huddleston, E. Le Fevre, L. F. Bishop, J. Arthur Booth, and James Ewing.

Protestant Hospital in East St. Louis.—A new building is about to be erected for the Protestant Hospital in East St. Louis, Ill. The corner-stone was laid with Masonic ceremonies on October 29th.

Variola Feared in England.—An epidemic of smallpox may be looked for in 1899, according to Sir R. Thorne's annual report to the London local government board. It seems that so many exemption papers have been granted that, while the proportion of unvaccinated children was previously less than twenty per cent., it is now about fifty per cent.

Anonymous Communications.—"A constant reader," "Medicus," "Q," "A bewildered friend," and all other correspondents who have sent to the MEDICAL RECORD letters without name and address are respectfully notified that their communications have been deposited in the waste-basket. The name of a correspondent will not be published, if the writer wishes to conceal it, but the writer must send his name with his letter if he wishes the latter to be published or even to be read by the editor.

The Consumption of Beer in Germany.—Statistics recently published show that the inhabitants of Berlin drink two hundred and six quarts of beer each annually, and those of Munich, whose thirst is proverbial, imbibe five hundred and sixty-six quarts each in the course of a year, or a little over three pints a day.

Taking Advantage of the Day of Rest.—The milk inspectors in a town in England had for some time made a practice of examining milk at irregular times and without warning, until the milk-dealers concluded that honesty was the best policy, indeed the only practical policy. These examinations, although irregularly made, had always been conducted on week-days. A long series of tests had failed to show any adulteration by the dealers, and then the inspectors decided to make an examination on a Sunday, with the result that over six per cent. of the samples of milk obtained were found to be adulterated. Hereafter the inspectors will make their unexpected visits occasionally on Sunday as well as on week days.

How About Cooking It?—Dr. Durham, an English advocate of vegetarian ideas, says the way to prevent disease among meat-eaters is to carry out thorough sterilization by heat, in order to destroy the poisons.

Hospital for Infectious Diseases in Baltimore.—The city council of Baltimore has passed a resolution appropriating the sum of sixty thousand dollars for a hospital for contagious diseases.

Death of a London Inebriate.—Jane Cakebread, for years one of the most notorious figures in the London police courts, died a few days ago. She held the record for convictions upon charges of drunkenness and disorderly conduct, having been found guilty of those offences about three hundred times.

Turning a Patient Out to Die.—The London Hospital authorities recently turned out in the street a patient who had acted indecently in the ward and had used profane language. They apparently regarded him as simply vicious and failed to recognize him as a dement. A policeman found him and took him to the Whitechapel Union Infirmary, where he died shortly afterward, and at the autopsy he was found to have had cerebral softening.

Obituary Notes.—DR. NATHAN SHERWOOD KING, of Yonkers, died at his home on December 11th, of pneumonia. He was born in 1824 at Fishkill, and was graduated in arts from Williams College in 1849, and in medicine from the College of Physicians and Surgeons in 1852. He leaves a wife and one married daughter.—DR. JOHN STILLWELL SCHANCK, emeritus professor of chemistry at Princeton University, died in Princeton on December 16th, aged eighty-two years. He was graduated in arts from Princeton University in the class of 1840, and in medicine at the University of Pennsylvania Medical School in 1843. For several years he practised medicine in Princeton, and in 1847 he took charge of the Museum of Natural History in Princeton University, delivering lectures on zoölogy, anatomy, and physiology. In 1856 he was elected to the chair of chemistry, and held it until 1892, when he was created professor emeritus.—DR. C. HOLMES MCNEILL, of Jersey City, died at his home on Jersey City Heights, on December 18th, from heart disease. He was graduated from the medical department of New York University in 1861. He had been a member of the board of health of Jersey City for three terms.—DR. ROBERT B. BAISLEY, of East Rockaway, died Saturday. He was born in Flatbush and was graduated from the College of Physicians and Surgeons in this city in 1842. He settled in East Rockaway in 1850, and has practised there since that time.—DR. EDWIN MINER, of Brooklyn, a prominent homœopathic practitioner and for many years chief of staff of the Homœopathic Hospital, died at his home on December 18th. He was born in this city in 1838. He was a graduate of the New York Homœopathic Medical College and Hospital in 1870.—DR. CHARLES S. HOYT, superintendent of the State and alien poor, died at his home in Canandaigua, N. Y., on December 13th, of pneumonia. He had grown old in the State service as a member of the office staff of the State board of charities, and was secretary of the board for many years.—DR. FRANK ARCHER BOTTOME died at his home in this city on December 20th, of pneumonia. He was born in Bridgeport, Conn., in 1865, and was graduated from the medical department of Columbia University in 1889. He was attending physician to St. Joseph's Hospital, and was connected with the clinic of nose and throat diseases at Roosevelt Hospital.

Society Reports.

THE SOUTHERN SURGICAL AND GYNÆCOLOGICAL ASSOCIATION.

Proceedings of the Eleventh Annual Meeting, Held at Memphis, Tenn., December 6, 7, and 8, 1898.

THE association met at the Gayoso Hotel, under the presidency of Dr. Richard Douglas, of Nashville, Tenn. Prayer was offered by BISHOP GAILOR. DR. ALEXANDER ERSKINE, of Memphis, delivered an address of welcome on behalf of the local profession, which was responded to by PRESIDENT DOUGLAS. After the disposal of routine business, the scientific session was opened with a paper by DR. WILLIAM E. PARKER, of New Orleans, La., entitled

Gunshot Wounds.—Dr. Parker described the hospital conditions in Cuba and the wounds seen by him made by the modern bullet. He spoke of some experiments made under the direction of Major and Surgeon L. A. LaGarde, of the regular army, as to the relative penetrating powers of the Mauser, Krag-Jorgensen, and Springfield rifles. With ammunition of the years 1896 and 1897 the Mauser, fired at a distance of three feet from the muzzle into seasoned yellow-pine posts, penetrated thirty-four plus inches. With ammunition of 1895 it penetrated thirty-two plus inches; with ammunition of the past year the Krag-Jorgensen, fired at the same distance, penetrated twenty-four plus inches, and the Springfield but five inches; yet many lodged Mausers were found, and he was told by one of the Spanish chief surgeons that but six lodged Krag-Jorgensens were found by them. In regard to wounds of special regions, flesh wounds, as a rule, healed under one dressing. In the few cases that did not, the sloughing was at the points of entrance and exit, and not along the whole track of the bullet. Explosive effects were not seen by any of the surgeons. He had hoped to present some statistics as to the wounds of the war, but they could not be obtained. Wounds of the brain did well. The speaker had heard of at least five cases that were still alive and doing well. But one case of wound of the spinal cord was operated upon, and the patient was doing well. This patient had paralysis of both legs and of the bladder and rectum. Some spicula of bone had been removed from the cord. At this time the patient had perfect use of the right leg and partial use of the left, and had entire control of his bladder and rectum. While the speaker had not in any way modified his opinion that laparotomy should be performed for abdominal wounds occurring in civil life, yet with the small modern bullet and lack of proper facilities this operation should not be attempted in the field, unless there should be symptoms of hemorrhage. About fifty per cent. of these patients recovered without operation. Chest wounds did well and caused but little trouble. In cases of wounded vessels, the hemorrhage did not seem greater than in wounds caused by other bullets. When nerves were injured, nerve suture was not attempted, on account of the rush of work, but the speaker thought it should be attempted as soon as possible. None of the hospitals had a sufficiently large number of surgeons or hospital-corps men, but those who were there were efficient.

Penetrating Wounds of the Abdomen, with Reports of Cases, was the title of a paper by DR. F. W. MCRAE, of Atlanta, Ga. At the outset, the essayist referred to a resolution passed unanimously by the association at its Nashville meeting in 1896, to the effect that in all cases of penetrating wounds of the abdomen it was the duty of the surgeon to make an exploratory incision, so as definitely to determine whether the viscera had been injured or not. Since then a few able surgeons had dissented from this opinion. The propriety of surgical interference in cases of penetrating gunshot wounds of the abdomen would depend on one of three things: (1) The general condition of the patient; (2) dangerous internal hemorrhage; (3) wounds of the stomach or intestines, large enough to permit extravasation. Dr. McRae quoted from contributions to this subject by Senn, Nunez, Winslow, Budinger, Vaughan, Woolsey, Robson, Chauval, Michaux, Klemm, and others; and said that from the conflict of opinion and advice given by these and various other surgeons one was at a loss, in many cases, to know just how to proceed. His own convictions, based on sixteen cases which he narrated, were positive. While he had the greatest admiration and respect for the surgical opinions of Senn, he should be recreant to his convictions were he to accept the proposition of non-interference laid down by that writer in his recent contributions to the subject. In most of the cases which had come under the speaker's observation in which grave lesions of the abdominal viscera had existed, the symptoms of internal injury had been practically *nil*, and the positive signs of grave damage almost entirely absent. In conclusion, the speaker reiterated his firm conviction that every case of penetrating wound of the abdomen, in which there was reasonable doubt as to injury of the abdominal viscera, should be subjected at least to an exploratory operation. This enabled the surgeon either to be absolutely sure that no injury had been done to the viscera, or to repair, as far as possible, such injuries when they existed. The mortality following a simple exploratory operation *per se* was so small as not to weigh against the much greater mortality that necessarily followed the expectant plan of treatment. In the cases he had seen, the general and local signs had been so misleading and enigmatical that prior to the operation a conclusion on his part as to internal conditions would have been entirely guesswork.

The Practical Management of Bullet Wounds of the Abdominal Viscera.—This paper was read by DR. HORACE H. GRANT, of Louisville, Ky. Observation and experience with operators meeting frequently with this lesion had determined that penetrating wounds of the abdomen demanded laparotomy at the earliest possible moment after diagnosis and thorough inspection of the entire region endangered. It had been established that not only was the mortality in untreated wounds of the abdomen almost one hundred per cent. when the intestines were perforated, and very high in wounds of the solid viscera, but it became less promising every advancing hour, until by the second day peritonitis set in and destroyed the hopefulness of the prospect. Within the past two years the speaker had operated upon four cases. In each case the patient was seen early, in no instance later than four hours. In three, resection of the intestine was necessary. Three of these patients recovered; the fourth died from septic peritonitis, due to the escape of a large quantity of fecal matter before operation. The autopsy disclosed a perfect intestine.

These three papers were discussed together.

DR. W. L. ROBINSON, of Danville, Va., said he had seen a good many cases of gunshot wounds of the abdomen, and nearly all of the patients had died either with or without operation. Early operative interference might have saved some of them.

DR. G. S. BROWN, of Birmingham, said he knew of several cases of gunshot wounds of the abdomen that had occurred in and around Birmingham, in which the patients had recovered without operation. Personally he had operated in five cases, of which one patient had recovered. In this case there had been no perforation of the intestine. Undoubtedly diarrhœa and starva-

tion, mentioned by Dr. Parker in his paper, had something to do with the favorable results. The intestines were most liable to be perforated when full.

Dr. Willis F. Westmoreland, of Atlanta, said the results of gunshot wounds of the abdomen on the battlefield should not be compared with those met with in civil life. It was not a question of operating, so far as fatal results were concerned, but the manner in which the operation was done.

Dr. W. E. B. Davis, of Birmingham, thought that Dr. Parker's paper was not an argument against operative procedures for abdominal wounds. Surgeons on the battlefield did not have the same facilities for operating on penetrating wounds of the abdomen that they did in civil practice, and which were necessary for the proper care of cases. If a man sustained an injury to the intestine, and his abdomen was not opened, death might be expected. In twenty or more cases operated on by him and his brother, all of the patients seen twenty-four hours after the injury had died. This was not an argument against operative interference, but against late operation. Statistics impressed surgeons with the importance of early operation.

Dr. George A. Baxter, of Chattanooga, believed it was not necessary in many instances to open the abdomen in cases of gunshot wounds, and he cited a number of cases in which recovery took place without operative interference.

Dr. John T. Wilson, of Sherman, Tex., advocated early operation in cases in which the surgeon was convinced that perforation had taken place. The character, technique, and rapidity of the operation were very important. In operating, the intestines should be exposed as little as possible.

Dr. W. L. Rodman, of Louisville, said that while for the last ten years he had pursued the practice of operating on penetrating gunshot wounds of the abdomen, after hearing the paper of Dr. Parker and reading the recent contributions of Senn and others he doubted whether he as well as other surgeons might not have gone too far in operating in so many of these cases; at the same time, he did not wish to be understood as advising a masterly inactivity when the environments for operative interference were favorable.

Dr. Westmoreland said that, given a case of perforation of the intestine, particularly when there was extravasation of contents, instead of being masterly inactivity it was criminal inactivity for a surgeon not to operate.

Dr. Parker, in closing the discussion on his part, said that he had tried to make a clear distinction between the plan of treatment of gunshot wounds of the abdomen met with on the battlefield and those encountered in civil life. He was strongly opposed to laparotomy on the battlefield, on account of the conditions that exist. In civil life, however, the thing to do in cases of gunshot wounds of the abdomen was to get in and out of the belly as soon as possible consistent with good work.

Dr. Moran believed that a large proportion of the operations undertaken late for gunshot wounds of the abdomen would terminate fatally.

Dr. Grant stated that practically all patients operated on after twenty-four hours would perish. It was impossible to diagnosticate perforation of the intestines with any degree of certainty. If a patient was seen within eight or ten hours after the receipt of a gunshot wound of the abdomen, under favorable surroundings, whether the bullet had penetrated or not, the skilful surgeon would not hesitate to do at least an exploratory operation, because it would not hurt the patient, but might probably save his life.

A Plea for the More Correct Application of the Emmet Methods in Plastic Surgery was presented by Dr. W. D. Haggard, Jr., of Nashville, Tenn. The pioneer work of Sims was feelingly referred to. It was a unique circumstance in the annals of surgery that the instruments which made the feat of Emmet possible, and the fundamental principles of his success, had remained unchanged. It was not so much the truth of homage to unprecedented genius, as the truth of the great principles he enunciated and the perfection of his devices. The extension of the method of Sims in fistula to injuries of the adjacent soft parts was made by Emmet. The evolution and perfection of the operation on the cervix were traced. Dr. Haggard described the mechanics of the production of rectocele associated with the common transverse tear of the posterior vaginal wall involving the pelvic fascia, which was the essential pathology in this injury. The rational correction of this complex condition, then, would not be to sew the labia together, which was the popular procedure in one class of operations, nor to denude an arbitrary area of fanciful shape on the rectocele and bring the edges of the raw patch together, after the fashion of another class; it would rather be, in the language of Emmet, "to catch up the retracted pelvic fascia at such a point and in such a manner as to take in the slack, as it were, of the fascia throughout the pelvis." By this procedure the displaced posterior vaginal wall was certainly lifted up and drawn forward in contact with the vesico-vaginal septum. As the steps of the operation advanced the displaced anus was lifted upward and forward, the everted tissues at the vaginal outlet were gradually rolled in, and the separated levator ani muscles brought together. The speaker described the essential features in detail. The classical operation for the complex tear of the perineum was more amenable to pictorial description, and he believed was more generally understood. He minutely depicted it. In every branch of art there was a troop of imitators, who followed so closely the hall-marks of the original that the specious could scarcely be distinguished from the genuine. So closely were mannerisms copied in literature, art, sculpture, and the drama, that the imitators created a distinctive school. This accuracy of duplication was rendered possible by faithful and scrutinizing study of the original pattern. The unlimited opportunities for the study of models in the arts were obviously impracticable in plastic surgery. We could not all have the privilege of seeing the peerless Emmet, although a distinguished fellow of this association said that every one who aspired to do this work ought to do so. Dr. Haggard regretted that many of Dr. Emmet's pupils did not or could not copy his methods, and he did not hesitate to say that those who did conscientiously strive to imitate him fell very short in their efforts, but they had at least the satisfaction of having a correct conception of the highest ideals in surgery.

The Treatment of Complete Rupture of the Perineum by Dissecting Out the Sphincter Muscle and Its Direct Union by Buried Sutures.—Dr. Howard A. Kelly, of Baltimore, Md., read a paper on this subject. He said that the results of the best methods of the treatment of complete tears of the perineum were not entirely satisfactory in a large percentage of cases. The control over liquid motions and flatus was as a rule not secured immediately, and it was usually necessary to encourage the patient by telling her that she "would have to learn to control the muscles in the course of time." Such a control, more or less perfect, was gained in the course of several months. This defect in our present procedures was due to a faulty approximation of the sphincter ends, which lay buried in a pit, and which were therefore difficult to bring into accurate, firm apposition by sutures embracing a considerable quantity of tissue surrounding the sphincter ends. Dr. Kelly proposed, therefore, the deliberate

dissection and freeing of the sphincter ends, drawing them out about one and one-half centimetres from the tissues, cutting off the scarred ends, and effecting a direct union of the freshened ends by two or three buried catgut sutures. He was led to do this operation by his experience in a case which had been operated upon six times with a result which, judged by superficial appearances, was perfect, and yet the patient had no control over her bowel functions. He made a semilunar incision around the anterior periphery of the anus, and found the right sphincter end buried in scar tissue in the median line, while that of the left side was ectopic and attached out under the ischial tuberosity. The sphincter ends were united directly by buried catgut sutures, the skin wound was closed, and union took place *per primam*. In addition to these buried catgut sutures, a splinting suture of silkworm gut was passed through the middle of the sphincter near the edges of the wound and on up through the septum, splinting the ends together and taking the tension off the catgut. He had since taken the hint given by this case and adopted a similar procedure in six cases of complete tear of the perineum due to confinement. Two additional cases were operated upon by Dr. W. W. Russell and one by Dr. Ramsay. In each instance there was a surprising difference between the new and older methods, noted at once in the earliest stages of convalescence, and the patient was immediately conscious of perfect control of her functions. The bowels should never be locked up. Great care should be taken not to leave any dead spaces in closing the remainder of the wound in the usual way, in order to avoid all risk of infecting the buried sutures. He recommended this operation only to those who possessed considerable skill in doing plastic operations and in securing a snug, accurate adaptation of the parts.

In the discussion, Drs. George H. Noble, of Atlanta, and J. Wesley Bovee, of Washington, D. C., added their testimony to the usefulness of the method described by Dr. Kelly, but certain features of the technique of which they modified.

The Treatment of Cancer of the Uterus was discussed by Dr. Lewis S. McMurtry, of Louisville, Ky. He said that the treatment of uterine cancer had not shared proportionately in the great advance of modern pelvic surgery. While other diseases which were long the opprobria of medical and surgical science and art had been made amenable to surgical treatment, the treatment of cancer of the uterus was practically where it was twenty years ago. Cancer of the uterus was a very common disease. Women were more subject to cancer than men, and in quite one-third of all cases of cancer in women the uterus was the seat of the disease. The disease occurred, as a rule, between the ages of thirty and fifty, attaining its maximum prevalence at the menopause. It was rare in unmarried and sterile women, and was most common with the mothers of large families. Race and environment had much to do with its development. It had been the experience of the essayist that the disease was proportionately rare in the negro race. From a careful statistical study, Billings declared that cancer was slowly but steadily on the increase, and that its greatest prevalence was in nations which had attained the highest state of civilization. In 1893 London alone lost 3,412 of her population from this disease, a percentage of 3.73 of the total death rate for the year.

Cancer of the corpus uteri was rare in comparison with the common exhibition of the disease in the cervix, but not so uncommon as was formerly understood. Cancer of the cervix originated (1) in the squamous epithelium of the vaginal portion of the cervix, (2) in the cylindrical epithelium of the cervical mucosa, and (3) in the epithelial lining of the cervical glands. Cancer of the body of the uterus originated in the epithelial structures of the endometrium. The treatment of uterine cancer consisted in a variety of operative procedures, leading up to the most recent operation of combined abdominal and vaginal extirpation. The names of Verneuil, Carl Braun, Schroeder, Pawlik, Koeberlé, and Byrne were associated with high amputation of the cervix with écraseur, cautery, and knife. High amputation, as practised by Schroeder, attained the greatest favor and maintained its position over hysterectomy until 1886. Prior to this time hysterectomy had such a high mortality (fifteen per cent.) that high amputation deserved preference. In 1886 the operation of total vaginal extirpation was revived by Martin, Leopold, and Olshausen. Since that time this operation had been very generally adopted, and was to-day the accepted treatment for the radical cure of cancer limited to the uterus itself. With the modern perfected technique the mortality of this operation was reduced to about four per cent.

Dr. McMurtry referred to the statistics of vaginal hysterectomy as given by Pozzi in the third edition of his treatise on gynæcology, an analysis of which did not strengthen or inspire confidence in the ultimate results of this procedure. He said that claims were being made for the permanent cure of uterine cancer by hysterectomy which could not be realized. Of all the subjects of uterine cancer who applied for treatment, only a small proportion were within the scope of a clean extirpation by vaginal hysterectomy. The large number of cases in which the disease recurred within a few weeks at the site of operation demonstrated that the operation was in most cases simply a resection, leaving behind sufficient disease for continued activity. His personal experience with this operation had been discouraging. Vaginal hysterectomy for cancer had never been a favored operation with him. During the past year he had operated in five cases, which were selected as most favorable for permanent cure. In all the disease was discovered early, and, so far as macroscopic evidence could show, it was limited to the uterus itself. The organ was normally mobile. Of these five cases treated by vaginal hysterectomy, two had recurrence—one in the bladder, the other in the vaginal fornix at the cicatrix—within five months after operation. These were selected cases in which the disease was early recognized; the patients were under fifty years of age and well nourished. The operation was done with a view of going far beyond the region of probable infiltration and removing the appendages with the uterus. Based on his own previous experience and that of other operators, it was doubtful if one of the three remaining patients would be living at the end of three years from the time of operation.

The histological structure of the uterus and adjacent organs was exceptionally favorable for disseminating this disease. The rich lymphatic distribution here was an active means of infection, but the studies of Cullen showed that the activity of lymphatic invasion had been exaggerated and that the common mode of infection was along contiguous structures. Extension was most rapid around the vaginal vault, forward and downward under the bladder, and in the base of the broad ligaments. The common invasion of the vagina by implantation about the cancerous cervix had suggested to Werder the method he had practised of total excision of the uterus and vagina by suprapubic operation.

In conclusion, Dr. McMurtry considered in detail the choice of operation for the several classes of cases of carcinoma of the uterus which were presented to the surgeon for treatment. For advanced cases, in which the entire field of evident invasion could not be removed, he advocated thorough curettage, scraping away necrosed tissue, emptying obstructed pus accumulations,

washing out débris, and establishing drainage and antisepsis. Such local treatment would reduce septic intoxication, prolong life, and promote comfort. All operations for radical cure should be limited to cases in which the disease was recognized sufficiently early for thorough removal of invaded structures. This would be best accomplished in the majority of cases by abdominal section and removal of the uterus from above, including liberal portions of adjacent structures, especially the upper portion of the vagina, where implantation from the cervix was so often found. While liberal excision of suspicious areas of tissue should be done, it would rarely be found necessary to remove the subperitoneal lymphatic glands, since their enlargement had been often found inflammatory in character instead of cancerous. The field of vaginal hysterectomy should be limited to the few cases of early diagnosis in which operation could be done before deep extension of the disease. Efforts for prophylaxis should be most diligent, and should be of universal application. All ulcerative and cicatricial lacerations of the cervix should be repaired as a prophylactic measure.

Dr. William L. Rodman, of Louisville, asked the members to give their experience relative to the frequency of cancer in the black and white races. He was rather surprised to hear of the infrequency of the disease in the negro woman. According to the last census statistics of Billings, cancer of the uterus was more common at all ages in the black than in the white race. This was also the experience of Matas, who had examined the records at the Charity Hospital in New Orleans. An examination of all deaths recorded by the Health Department of Louisville for the past thirty years corroborated the same view.

Dr. Ernest S. Lewis, of New Orleans, stated that, while he had not observed a very marked difference in the relative immunity of negro women to cancer of the uterus, still, if his experience was not at fault, he thought, owing to their uncleanliness, their mode of living, and to the more frequent accidents to which they were subject during labor, they were particularly prone to cancer of the uterus. With regard to the results of all operations for cancer of the uterus, he indorsed everything Dr. McMurtry had said. He could only recall one case of vaginal hysterectomy for cancer in which the patient lived for eight years, after which the disease returned, and the patient finally died. The disease was so liable to return that he considered any operation as palliative, and he believed that would be the result of the abdominal operation advocated by Dr. McMurtry, particularly in advanced cases; and if cases should be met with in the incipiency of the disease, in his opinion as much could be accomplished by the vaginal as by the abdominal operation.

Dr. Virgil O. Hardon, of Atlanta, said that during his seven years' connection with the Grady Hospital he had reason to believe that cancer of the uterus was more frequent in negro women than in white women. He had been led by his experience in the treatment of uterine cancer to the same conclusion as that reached by the essayist, except that he had been induced to go further. He had operated for cancer of the womb by vaginal extirpation, by the abdominal method, and by the combined method, and he had never yet operated upon a patient in whom recurrence did not take place sooner or later; and for this reason he had lost all confidence in operative measures as a means of effecting a permanent cure. However, he had no doubt, on theoretical grounds, that if cases could be seen sufficiently early a permanent cure might be effected by surgical interference.

Dr. Howard A. Kelly, of Baltimore, remarked that he was astounded at the trend the discussion had taken, because he had seen dozens of cases of cancer of the uterus that had remained well for a number of years after having undergone surgical intervention, the uterus being removed either by the vagina or by the abdomen. He found carcinoma of the uterus as frequently in negroes as in white women.

Dr. J. Wesley Bovee, of Washington, D. C., said that his experiences in the radical treatment of cancer of the uterus had been more satisfactory than what he had been hearing that day. He knew of a good many cases in which he had operated that had gone on for three years or more without a recurrence of the disease. He had done three operations after the manner described by Werder in the *American Journal of Obstetrics* of last winter, and he was much pleased. In each case he had adopted the abdominal rather than the vaginal route, believing a more radical operation could be performed by this method. He had great hopes for the future treatment of cancer of the uterus by complete abdominal hysterectomy, undertaken early.

Dr. William L. Robinson, of Danville, said that when the parts had become infected beyond the uterus, no dissection, however extensive, would ever remove the cause. When the disease had extended beyond the uterus, he believed that it was beyond the power of any surgeon to remove it thoroughly. Therefore, unless an operation could be done very early, he would not advise the removal of the uterus.

Dr. W. E. B. Davis was profoundly impressed with the position taken by Dr. Lewis as to the ultimate outcome of cases of cancer of the uterus, believing his position to be correct. There was no man in America who had had a larger experience in the treatment of cancer of the uterus than Dr. Lewis, and the profession were familiar with his great skill as a surgeon; hence his experience regarding uterine cancer was certainly valuable.

Dr. McMurtry, in closing the discussion, said he could not indorse the rosy view that Dr. Kelly took with reference to the ultimate results of the operative treatment of cancer of the uterus. He knew that Kelly's work in this direction had been extensive, and that his reports were sincere and reliable. But there were a great many surgeons, working in the same line, who have done thorough, faithful, skilful work in the radical treatment of uterine cancer, who doubted the future confirmation of Dr. Kelly's views.

Fractures Involving the Elbow-Joint was the title of a paper by Dr. John T. Wilson, of Sherman, Tex.

The Use and Abuse of Decinormal Salt Solution.—Dr. J. Wesley Bovee, of Washington, D. C., read a paper with the above title.

The term decinormal salt solution had been used interchangeably with artificial serum. Various compositions and strengths of the constituent elements of the blood had been used with the name decinormal salt solution. According to Kirkes' "Hand-Book of Physiology," salt existed in the blood plasma in the proportion of 5.546 parts per 1,000, and .6 per cent. was a good practical formula. Other ingredients, *i.e.*, egg albumen, had been added to the salt, which really made an artificial serum instead of decinormal salt solution.

Of the five different routes through which it was introduced, the intra-arterial, suggested by Dawbarn, was considered unsafe in all conditions and should not be practised. The subcutaneous was the most useful for general use. In emergency work the intravenous method would often be needed in severe hemorrhage, and the rectal enema of the solution would be found of great advantage in nearly all cases in which no bowel lesion was to be combated. In abdominal surgery the peritoneal cavity would be the place selected for its introduction, and even in vaginal opening of the peritoneal cavity, as in hysterectomy from this way,

the speaker had thrown considerable quantities into the peritoneal cavity, the hips being elevated at the time and the peritoneal opening closed directly afterward. The intravenous route, usually the most rapid, might be rendered slower than the subcutaneous by the difficulty of finding a vein and successfully introducing the cannula.

The physiological action of decinormal salt solution was to stimulate powerfully the cardiac ganglia and the nerve centres. The skin, kidney, and intestinal functions were stimulated markedly, and other organs were likewise affected. Osmosis was dedidedly promoted by it, and as a result of increased arterial tension the blood supply to the heart muscle was much increased. It had a hæmostatic effect when applied locally to raw surfaces, lessening oozing by stimulating and contracting the smaller vessels. According to Hayem and others, it augmented the number of red blood corpuscles. It was eliminated by the skin, changing the chemical reaction of the perspiration and heavily loading it with salt. The kidneys also carried away an enormous amount of it when large quantities had been introduced into the tissues. The lungs removed it freely, it having been noticed in crystals on the lips after its free use. Autopsies after its use under the skin showed a considerable quantity of it in the intestines, demonstrating that it was thrown off by this route.

The essayist then spoke of its use in general medicine. In surgery the principal indications for its use were shock, hemorrhage, and sepsis. In shock it should be employed early, on the table during operations, or even before the operation had been undertaken in bad cases, or after operation in milder ones. Severe hemorrhage was to be treated in the same manner, though only after the flow of blood had been checked. If the hemorrhage was severe, the intravenous route might be employed, it being about the only indication for this method. In the author's abdominal work he almost invariably left a considerable quantity of salt solution in the peritoneal cavity. Its salutary effect was produced by its action on the abdominal viscera with which it came in close contact. To prevent adhesions in the pelvis, one or two litres sufficed. It hastened absorption of stray or concealed blood clots, septic foci, or escaped fluids by carrying them well up into the abdominal cavity in cases of pelvic surgery. In hemorrhage it was probably best to infuse small quantities and often rather than one large quantity.

Judging from the reports of experimenters, the use of decinormal salt solution was not a harmless procedure. It was contraindicated in such conditions of the blood as hæmophilia, dyscrasias, deficient fibrin, etc. It would seem not unreasonable that such a strong stimulant coupled with its dilatation of the blood-vessels when used in large quantities, and specially when thrown directly into them, would be very harmful in such conditions of the circulatory apparatus as myocarditis, pericardial effusion, atheroma, arteriosclerosis, cardiac degeneration, bad valvular lesions, thrombosis, and recent cerebral apoplexies. Chronic diseases of the lungs, kidneys, or liver, especially if malignant, were apt to be aggravated by it. Active hemorrhage in any location was aggravated by it. The presence of toxins in the blood had been found to retard the elimination of decinormal salt solution, and, for that reason, only small quantities at a time should be employed.

It was necessary to avoid certain accidents and mistakes in using decinormal salt solution. The solution must be known to be sterile when it entered the tissues of the body, except when injected by the rectum, in which case sterility was of no moment. Air bubles should not be allowed to enter into blood-vessels or cellular tissue. The fluid must be of a sufficiently high temperature when reaching the body. Chills occurred from a cold solution and were dangerous to very weak patients. The vessel containing the solution, as well as the tube and needle conducting it, must be aseptic and thoroughly pervious; the tube should have a glass window that the rapidity of the current and the presence of any foreign body could be noted. When the solution was to be introduced through the skin, either into cellular tissue or vein, the local surface should be cleaned as much as the limited time would permit. Probably not more than a half litre should be injected into the tissue through one puncture, as localized necrosis and a septic inflammation have resulted from over-distention of the tissue spaces. Ordinarily not more than one ounce per minute should be injected into tissue or vein. Pulmonary œdema, dyspnœa, headache, vertigo, mental excitement, delirium, hallucinations, and severe pain in the left side occurred from over-distension of veins from too large an infusion.

In the discussion Drs. Parker, Johnson, Noble, Parham, Cartledge, Tiffany, Kelly, McMurtry, Baxter, McRae, and Brown spoke favorably of the use of decinormal salt solution.

The Conservative Treatment of the Diseased Ovary was the title of a paper by Dr. Joseph Taber Johnson, of Washington, D. C. The speaker said that the difference between the radical and conservative treatment of the diseased ovary was somewhat difficult to define, inasmuch as the most radical treatment under some circumstances was really the most conservative; while, in other cases, to conserve the best interests of some particular diseased ovary required the most radical surgery. In the early part of the present decade, quite a conservative wavelet swept over the country, and considerable harm was done to pelvic and abdominal surgery in the mild and gentle name of conservatism. Incomplete conservative operations were done, some of which had to be completed later on by radical operations. Some of the men who claimed to be the most conservative, and attracted the timid doctors and frightened patients, were actually removing more ovaries and tubes than many of their so-called radical friends. Much credit had been claimed for saving a part or the whole of one ovary and tube, when only a simple catarrhal salpingitis existed, by an operator posing before the profession and community as a conservative, when the surgeon designated a dangerous radical, to be avoided, would actually not have operated at all, and would probably have cured his patients by other means. In some instances genuine, successful conservatism was practised with lasting beneficial results, but not always from the highest and purest motives. Again, it had been charged that actual radicalism has successfully masqueraded under the name and guise of conservatism, to the injury of the trusting patient and the discredit of good surgery.

So much had been learned by accumulating experiences, and the domain of the gynecologist had undergone so much expansion, that real conservatism was gradually gaining ground over real radicalism to such an extent that he who presented ovaries and tubes or a fibroid uterus to a modern, up-to-date medical society, had to state very good reasons why he sacrificed those important organs in their entirety, to escape criticism and possibly censure. Sacrificial surgery was gradually giving way to more conservative and humane methods. He believed there was a maxim in general surgery in favor of saving every inch of the human body possible, and another that it required a higher order of skill to save a mutilated or diseased member than it does to cut it off or to cut it out. With his present experience in abdominal surgery, he was free to confess that he could now save ovaries and tubes

which he formerly thought it necessary totally to remove. The increasing skill of our abdominal surgeons and their accumulating experience in actual conservative work went to show that we were approaching nearer to that true conservatism which was the offspring of increased skill and experience. In abdominal surgery it required a higher order of skill and a greater experience to save an organ or part of an organ than it did to remove it. It was important to save a portion of one ovary, when the other had been removed on account of a tumor, an abscess, or for any other cause. The disagreeable symptoms accompanying the artificial and premature change of life were often stormy and protracted; in some rare instances threatening, if not resulting in, actual insanity. These women were happily prevented from falling into such a condition by saving one or a portion of one ovary; menstruation was then not interrupted, and the sexual and other feelings of the patient underwent none of those sudden and peculiar revulsions which unfortunately sometimes followed the total removal of both ovaries and tubes.

In conclusion, Dr. Johnson said that if growing experiences in the abdominal cavity and accumulation of evidence continued in favor of more conservative and less sacrificial operative work, he was sure that the deep debt of gratitude now felt toward abdominal surgeons by suffering women would be increased and intensified tenfold.

President's Address.—This was delivered by Dr. Richard Douglas, of Nashville, Tenn. He made a departure from the usual stereotyped form of address, and selected for his subject "Acute General Peritonitis." Before considering his subject proper he spoke of the growth of the association and the excellence of its scientific work, saying that the association owed its existence and high standing to the indefatigable efforts of Dr. W. E. B. Davis, the permanent secretary. A bacteriological classification of peritonitis was beset with many difficulties, and, while the speaker was free to admit that for all practical purposes peritonitis was of bacterial origin, yet there occurred a respectable percentage of cases in which the most rigid examination failed to disclose the presence of micro-organisms. Hartmann and Moreau recently reported in detail such a case. Of one hundred and ten cases bacteriologically classified by Flexner, there were twelve which he was obliged to consign to the idiopathic group. It is true that in all of these patients there existed conditions predisposing to peritonitis, such as cardiac, renal, or hepatic disease. In the intensely septic mycotic form of peritonitis the absence of germs might be accounted for by the fulminant type of the disease, death occurring from intoxication before the colonies of bacteria were well established. Any effort to individualize the effect of a specific bacterium, to connect its presence with a definite pathological phenomenon and characteristic symptomatology, was as yet futile. Mikulicz averred that all forms of peritonitis ran the same clinical course regardless of the bacteria that caused it. There was a law laid down by Maloz to the effect that if the peritonitis was of intestinal origin, the colon bacillus would show it; if it was of uterine origin, that is, connected with abortions or labor, we would find the streptococcus. It was asserted that the colon bacillus constituted nine-tenths of the bacteria of the digestive tract; the colon was its natural habitat, but its behavior upon gaining entrance to the peritoneal cavity depended upon many circumstances, and this bacillus had many morphological conditions, many forms and stages. The constancy of its presence in peritonitis, since the demonstrations by Welch and others of its capacity of transmigration through the bowel, had led many to attach to it great significance as an etiological factor; but its association with other forms of micro-organisms rendered the first proposition of Maloz null and void. If we interpreted Maloz's law correctly, the absence of streptococci would eliminate the possibility of peritonitis being of puerperal origin. In rebuttal of this idea, Dr. Douglas quoted from Winckel, who said: "Kroenig examined all parts of the uterus of a woman dead from infection, and found not only the superficial thrombi at the placental site thickly filled with bacteria, but also the serous lining of the peritoneum." This case showed that a woman might have a peritonitis following abortion without streptococci, and it further showed that the colon bacillus without an intestinal lesion might produce a fatal peritonitis. No doubt too much importance had been ascribed to the colon bacillus, and it was interesting to note that Taval, who was among the first to emphasize the pathogenic powers of the bacillus coli communis, thought now that the bacillus was of minor importance in the etiology of peritonitis. He held, further, that the very name of the bacillus coli should be considered merely a collective name of many varieties of bacteria. No better argument against bacteriological classification could be adduced than the words of Simon Flexner, who said: "In order that pathogenic bacteria introduced directly into the peritoneal cavity may cause a peritonitis, general or circumscribed, evanescent or fatal, the normal conditions of the peritoneum must in some way be modified." It was clear, then, that in the human being, as in experimental animals, some other condition than the mere presence of pathogenic micro-organisms in the abdominal cavity was necessary in order that peritonitis might be produced. Bacteria alone and unaided by physical conditions were comparatively innocuous.

Restricting consideration entirely to acute general peritonitis, it occurred from traumatic or consecutive causes. Under the head of traumatic peritonitis were embraced all infective inflammations arising from wounds of the peritoneum, whether accidental or operative, penetrating or non-penetrating. Consecutive, secondary, or symptomatic peritonitis might be subdivided into (1) peritonitis by continuity, and (2) perforation peritonitis.

Traumatic Peritonitis.—Under this head all forms of peritonitis must be embraced that were due primarily to a trauma. The destruction of tissue, the retention of blood clots and natural secretions, prepared a suitable soil for microbic invasion, and this essential infecting element might be introduced from without, as through penetrating gunshot, stab, or operative wounds—under which circumstances it was usually a multiple infection, the streptococcus predominating. There were also contusions of the abdomen without an external wound, which so injured and lowered the resistance of the tissue as to favor the migration of the intestinal micro-organisms and their infection of the general cavity.

Secondary Peritonitis.—The supervention of acute general peritonitis, as secondary to pre-existing disease processes, embraced in its etiology infective inflammations not only of all intraperitoneal viscera, but all organs or tissues contiguous thereto, and it did not appear to him to be too broad if there were included within its scope those peritonitides of hematogenic or metastatic origin; for it was well established that the specific germs of diphtheria, scarlet fever, pneumonia, and erysipelas have produced acute general peritonitis. Peritonitis by continuity was the uninterrupted extension of the inflammation from an infected area to the peritoneum, and was accomplished by the invading army of micro-organisms through the lymphatics, blood channels, or by direct penetration of tissues. The reactionary inflammation which determined the localization or diffusion depended upon the virulence of the bacteria, the resistance of the tissues, and, what

was too frequently overlooked, the individual resistance of the patient. Puerperal peritonitis of streptococcus origin conspicuously illustrated inflammation by continuity. Perforation peritonitis was the next subdivision of secondary peritonitis. The sudden opening of a focus of suppuration and the discharge of its contents into the peritoneal cavity, whether it was from hepatic abscess, a pus tube, or a mesenteric gland, was a true illustration of perforation peritonitis; yet the inflammation and systemic infection following were not necessarily so conspicuous. The duration of the primary disease, the virulence of the micro-organisms, the preparedness of the peritoneum by fortifications of adhesions, and the general condition of the patient were all circumstances which might modify and circumscribe the peritonitis. It was more common for perforation peritonitis to occur as a result of ulceration of the wall of some of the hollow viscera as in peptic ulcer, typhoid and dysenteric intestinal ulceration, duodenal and appendicular ulceration.

The conclusions to be drawn from an etiological study of peritonitis were thus summarized: Traumatic peritonitis, especially the post-operative variety, was essentially a grave condition, not only because there was immediate or primary inoculation of the peritoneum, but the conditions were all favorable for germ culture and dissemination. Peritonitis by continuity might become general and prove rapidly fatal, but this was not the rule except in puerperal cases. Contrary to the expressed opinion of more than one writer, there was nothing peculiar about the peritoneum, or the cæcum, or appendix, or the true pelvis, which accounts for the more frequent localization of inflammation in these regions than in other areas of the abdomen. The method of invasion, the activity of the process, and the resistance of the patient alone determined the local or general type of peritonitis. Visceral perforation, whether traumatic or pathological, was an ideal condition for germ culture and the elaboration of toxins. Their rapid absorption and general diffusion throughout the peritoneum sufficiently explained the grave state into which the patient was precipitated. It might be asserted that the clinical course and pathological expression depended largely upon the nature of the exciting cause, the character of the pre-existing disease or injury, and the mode of invasion. Without attempting to formulate any definite pathological classification of general peritonitis, and to adapt each to its special cause, he preferred to direct his efforts to simplifying and dispelling the confusion that existed. He accepted with slight reservation the now almost universally conceded idea that acute general peritonitis was and must be septic—that is, of bacterial origin. But he maintained that surgeons did not understand each other, nor had they all a clear conception of what was meant by septic peritonitis. It had been a race for life between the practical surgeon and bacteriologist as to who should claim the honor of naming the pathological phenomena in this great serous bursa. He maintained that the surgeon was alone competent to define, classify, and prognosticate the protean types of this disease. That men were honest, painstaking, and accurate, went without saying; yet how could surgeons reconcile the report of McCosh's last series of eight cases of general septic peritonitis and six operative recoveries with the experience of Senn "of many cases of diffuse septic peritonitis without a single successful result"? The answer certainly was not in the superior skill or special technique of the operator, but it was to be found in an analytical study of McCosh's cases, six of which were purulent peritonitis and two serous peritonitis—not at all the class of cases referred to by Senn. Tietze defined diffuse septic peritonitis to be "that form of peritonitis in which there is little or no exudate, severe symptoms of intoxication, and terminating rapidly fatally." Some four years ago, Dr. Douglas reported eight cases of general peritonitis subjected to operation, with four recoveries and four deaths. He dealt with them all as cases of general septic peritonitis, from a misconception of the term. Only two of them properly belonged to this class, and they terminated fatally. The others were cases of general purulent peritonitis, with two deaths and four recoveries. He was very well pleased with his percentage of recoveries, but disgusted with his classification. He did not discriminate between diffuse septic peritonitis, the patients dying in twelve hours with profound toxæmia and dry peritoneum after perforation of the appendix, and one of perforation with enormous purulent effusion, but mild symptoms of sepsis. This error of his was the common one with the profession, and it was the outcome of an attempt to classify peritonitis by the character of exudate. The etiological classification of peritonitis placed it as subsidiary to the primary lesion which produced it, and its practical import was its local origin. A painstaking investigation into the clinical history would usually determine the origin or structure primarily involved. The symptoms and physical signs, if the case was seen sufficiently early, would still further aid in incriminating the part under suspicion. This valuable diagnostic evidence did not conform to any stereotyped expression; the symptomatology of peritonitis was as varied as its causes. By the presence of any striking symptom or group of symptoms, physicians could not arrive at a decision in a doubtful case, but from the whole picture they must form conclusions.

When Should We Operate for Appendicitis?—Dr. A. M. Cartledge, of Louisville, read a paper on this subject. He drew the following conclusions: (1) Probably ninety-eight per cent. of the patients who die of acute appendicitis without operation have the fulminating variety of disease. The operation, to be of service, must be done in the first twenty-four hours—better the first twelve. (2) In view of the fact that we have no means of knowing the probable course of a given attack of appendicitis, the operation, when possible, should be performed within the first twenty-four hours after the onset of symptoms. (3) Patients seen after the third day should not be operated upon until they were over the attack, or until purulent formations, if such take place, had been walled off and the patient was practically rid of general sepsis. An exception to this rule was the rupture of an appendical abscess into the peritoneal cavity—a very rare accident, when abdominal section should be immediately performed. (4) Probably as many patients recovered from general septic peritonitis by stimulants and purgatives as did by operations. In either event, if it was a case of true general septic peritonitis, the mortality would not be far from ninety-five per cent. Contributions to medical literature would indicate that there was a sad need on the part of the profession of more definite views as to the nature of this disease. If the operation was performed at all, no attempt at general cleaning of the cavity should be practised; nature should be quickly assisted in taking care of the desperate condition of the patient, by removing the sources of the foci. To do more was to add the shock of an unbearable operation to an already nearly exhausted vitality. (5) Patients who have suffered unmistakable attacks of the disease should be subjected to interval operation. (6) Do not operate too soon after a severe attack with many adhesions; the operation would be greatly simplified by waiting a few weeks longer. In the mean time, the patient should be kept upon light diet and little exercise. Patients did not usually have a recurrence until the adhesions or splints have been removed by absorption. The mortality from interval operations should not be more than one per cent. In drawing the

above conclusions, Dr. Cartledge wished it to be distinctly and thoroughly understood that they were not to be considered in the sense of hard and fast rules, but simply as a working basis for the general practitioner.

Ureteral Anastomosis.—Dr. George H. Noble, of Atlanta, read a paper on this subject. He gave an analysis of thirty cases collected from literature, and divided them into two classes: First, ureteral anastomosis, or union of the ureter end to end or end to side; second, ureteral implantation into the bladder. On July 2, 1898, the essayist ligated the ureter with the ovarian vessels and Fallopian tubes in a case of large extraperitoneal fibroma. This was the very first ligature applied in doing the hysterectomy. The bladder end was split about three-eighths of an inch, and as much of the mucous membrane as could be drawn out was cut away; then the upper or kidney end of the ureter was invaginated into it, using a mattress suture for the purpose. The split was then closed with fine sutures, making a snugly fitting cuff around the opposing end with no mucosa intervening. Small silk was used to stitch the raw edge of the inferior segment around and to the sides of the upper section. A peritoneal cuff was thrown around the joint thus made, and the ureter buried behind the peritoneum. The entire work was conducted with the aid of a ureteral catheter, which had been introduced through the ureter into the bladder and drawn out of the urethra with a pair of forceps. The upper end was passed into the kidney end of the ureter. This served a useful purpose, the entire manipulation being greatly facilitated, and obstruction of the ureter being prevented by crowding down the cut end of the mucosa just below the line of union. This patient had suffered from absorption of pus for a number of weeks from double pyosalpinx, and was emaciated and thoroughly septic. Her temperature just before going upon the operating-table was 103° F., and had been running equally as high during the time she had been in the hospital, and perhaps longer. Her pulse was 130 per minute, weak and thready. Thus this anastomosis was done under unfavorable conditions, but was successful.

In October, 1898, he did a successful resection of the left ureter in a case of extraperitoneal extension of sarcoma of the ovary. About one and one-half inches of the duct were removed and the ends united as in the previous case. The peritoneum was stripped from the entire left half of the pelvis. The bladder was separated from the upper portion of the vagina, and also from the horizontal ramus of the pubic bone, and drawn up to the left side of the ileo-pectineal line to cover or bury the ureter, and fastened with a silk suture. In this instance the ureteral catheter was introduced on the stiletto, and, being stiffened by it, passed directly out of the urethra from the ureter; thus the use of forceps was necessary to fish it out of the bladder. Abdominal and vaginal gauze drains were used. There was no leakage.

Dr. Noble said that there were several features necessary to success in doing ureteral anastomosis aside from thorough asepsis: (1) Perfect coaptation or invagination. This must be done in such a way that no mucous membrane can slip between the two ends of the ureter. (2) The ureteral artery should be preserved in its continuity to the ends of the ureter. If this vessel was destroyed when the ureter had been dissected loose from its attachments, it will perish beyond the point where it ceased to receive its blood supply. The ends of the ureter should be cut back to the point where the artery was intact, lest under diminished blood supply and tension it should perish. (3) All strain or tension must be relieved. Should union occur by first intention, the parts would separate as soon as the sutures cut out or are released. (4) There must be no obstruction to the flow of urine.

Carcinoma of the Breast.—Dr. Willis F. Westmoreland, of Atlanta, read a paper on this subject, in which he said that carcinoma now presented even a more serious problem than formerly, on account of its rapid increase. The proportionate mortality from cancer was four and a half times greater now than half a century ago. No other disease can show anything like such an immense increase. According to statistics, two out of every five cases of carcinoma in the female were of the breast. Over three-fourths of all the tumors occurring in the breast were carcinoma. Or, to be exact, of six hundred and thirty-seven tumors over five hundred and three, or 83.2 per cent., were carcinoma, leaving only one hundred and seven, or 16.79 per cent., representing all other forms of neoplasms. The author discussed the etiology of the disease at considerable length. Speaking of the pathology, he said that there was no subject in surgery about which such divergent opinions were held. There was a wide variation in the malignancy of carcinoma, some proving fatal in less than a year, a few others taking ten or fifteen years. He divided the varieties of carcinoma into the scirrhous and medullary or encephaloid. The former had an average duration of life of about thirty months, the latter of about twelve months. When it was considered that in nearly every instance the skin and pectoral muscles were involved in this disease, the surgeon could easily see the philosophic reasoning upon which Halsted's operation was based. The speaker followed the Halsted method in carcinoma of the breast. He believed, however, that Dr. Bloodgood was the first to demonstrate the advantages of completely cleaning out the postero-internal subscapular region by the supraclavicular route. The results of the Halsted operation, in the opinion of the essayist, depended upon the ability of the individual operator, his earliness in seeing the case, and his closeness in following Halsted's technique. This operation not only required surgical skill and experience, but a proper respect for the magnitude of small things. In the opinion of Dr. Westmoreland, no surgeon did a satisfactory operation on his first few cases. He found that with each case he operated more satisfactorily. The operation did not present the seriousness that its magnitude would lead us to believe. He had operated six times before his class at a public clinic, and transferred the patients afterward, at times quite a distance, to their homes. In his first operations he had some shock from exposure, but this was easily controlled by placing hot towels over the exposed surfaces. There was practically no blood lost in a properly performed operation. It was better to complete the operation, grafting included, at one sitting. When for any reason this was not practicable, the cleaning out of the supraclavicular region and the grafting could be done at a second operation. When grafting was done at a second operation, he found it better to remove the granulations. This was best done by curetting. In two of his cases it was necessary to remove the subscapular nerves, and in another to resect the axillary vein. No unpleasant sequelæ followed in either case. He had operated upon over fifty cases of carcinoma since he began surgical work, and he always cleaned out the axilla and stripped the muscles in each case. He had been doing Halsted's operation since its introduction. He did not know the results in the majority of these cases. Two of them, however, came back to him with later recurrence—one with a carcinoma of the femur five years after the operation, no local return; the other with a local return in the cicatrix nine years afterward. This patient died in a short time from metastasis. He felt quite sure that these were not independent new growths. There was always one rule—that the more malignant the case the greater the blood changes.

The primary object of the paper was to point out the fact that a careful clinical examination of each case, a record of the local conditions, the type of tumor, the blood changes, whether or not there was marrow infection, the family history, and the length of time the tumor had existed, would not only give definite facts upon which to base a prognosis, but, if published with each case, would give all surgeons a record of infinite value for comparative purposes.

The Rarity of Ovarian Cysts in Negresses.—Dr. I. S. Stone, of Washington, D. C., contributed a paper on this subject. After several years' experience in a hospital for women, in which a large number of negresses were annually treated for gynæcological diseases, and in which cases of uterine myomata were frequent, the writer had noticed the extreme rarity of ovarian neoplasm and especially of the multilocular variety. He had addressed letters to all the members of the association and to several other prominent surgeons elsewhere, and of the large number who replied to his inquiry there was almost universal acquiescence in the position taken by him, save from one important medical centre, the city of New Orleans. According to the records from the hospitals of this city, cysts of the ovary of all classes were rather more frequent in the negro than in the white. Leaving aside this one source, the author advanced overwhelming testimony favoring the view that ovarian tumors were exceedingly rare in the negro race. The speaker made a careful distinction between multilocular and unilocular cysts, because there could be no doubt about a diagnosis at the time of operation when a multilocular cyst was found. It was otherwise with parovarian cysts or those of the broad ligament, etc., which were perhaps classified as ovarian and their removal called ovariotomy in hospital reports or operation lists, when, strictly speaking, they were not ovarian tumors. He had frequently operated for dermoid, papillomatous, parovarian, and broad-ligament cysts in negresses (although most of these were in mixed cases), but had not seen a multilocular ovarian cyst.

Resection of the Thoracic Wall for Tumor Growing from the Thoracic Skeleton.—Dr. F. W. Parham, of New Orleans, read a paper with the foregoing title. He reported two such operations of his own, with successful results. Both operations widely opened the pleural cavity, and the lung collapsed in both. In the first the collapse was relieved only when the great pectoral muscle was brought down and sutured to the rent in the pleura. In the other signal service was rendered by the Fell-O'Dwyer apparatus for maintaining regular respiration. He believed the perfection of this apparatus and its application in skilful hands would greatly aid in the developing of the surgery of the chest. He had collected all cases operated on up to date, with a mortality of twenty-five per cent. for the intrapleural operations for tumors of the chest wall.

Antistreptococcus Serum.—Dr. W. L. Robinson, of Danville, Va., presented a clinical report of the use of antistreptococcic serum in seven cases of puerperal septicæmia, four of post-operative sepsis, three of septic cellulitis, and two of erysipelas. This comprised seven cases of puerperal fever, with high fever, rapid, weak pulse, characteristic breath, chilliness, nausea, and insomnia, pelvic tenderness, with scanty, fetid lochia, treated by him. From twelve to twenty cubic centimetres were injected after the usual treatment had failed, including intra-uterine and vaginal irrigations, sealing abrasions of the cervix and perineum, saline injections, purgatives, stimulants, etc., with prompt improvement in the general condition, rapid fall of temperature, lowering of pulse rate, and complete recovery. The effect was manifest in from eight to sixteen hours in the majority of cases. In the three post-operative cases of sepsis, seemingly hopeless, all usual treatment failing, the serum in twelve hours transformed every symptom of high fever, chilliness, rapid, weak pulse, diarrhœa, etc., into a hopeful condition, resulting in rapid recovery. The pain subsided in twelve hours, the fever in eight hours, and diarrhœa in forty-eight hours. One was a vaginal hysterectomy, the second was operated on for the removal of pus tubes, and the third was a vaginal hysterectomy. Three cases of septic cellulitis consisted of suppurative cellulitis of the hand, commencing in a finger, one of injury from a rusty nail, and the other from the spur of a cock. Both had been treated by general alterative tonics and locally with improved antiseptic measures, but the disease progressed daily, involving new tissue till the serum was used, which promptly arrested the progress of the disease in both cases and saved the hands. A third case was a gunshot wound of the ankle, with marked septic prostration, chills, diarrhœa, etc., which was dissipated promptly by the use of the serum, so far as fever and general septic symptoms were concerned. There were two cases of erysipelas. One patient was sixteen years of age, with an abscess following the extraction of a tooth, discharging at two points on the neck. Redness and swelling covered one-half of the face, nose, and head. The temperature was 104.4° F.; pulse, 140. There were delirium, vomiting, chilliness, etc. Ten cubic centimetres of the serum were injected at 9 P.M., resulting in fall of temperature to 100° F. Next morning there was complete arrest of all symptoms, followed by prompt recovery. The second case was one of nephritis; the eyelids and face were puffed, and there was erysipelas of the thigh, with hard, red, shiny swelling; delirium was present. Two injections used in twenty-four hours rendered the patient convalescent in thirty-six hours.

Penetrating Wounds of the Chest.—This paper was by Dr. J. B. Murfree, of Murfreesboro, Tenn. He confined his remarks largely to wounds of this region. Such a wound was produced usually by external violence, by which the walls of the chest were penetrated and the offending substance entered the thoracic cavity. It was a wound where not only the chest walls were injured, but also the tissues and oftentimes some of the viscera within the cavity. Penetrating wounds of the chest varied in their extent, character, and severity. They ranged from a small perforation with a delicate knife-blade or small bullet, merely separating the tissues without inflicting any serious injury, to a fearful laceration with great loss of tissue or serious damage to an organ produced by a large knife or a Minié ball. Wounds penetrating the chest were dangerous from hemorrhage, from the admission of air into the pleural cavity producing collapse of the lungs, from emphysema, from empyema, from septicæmia, and exhaustion. When a large vessel was injured death quickly ensued from loss of blood, while injury to smaller vessels might endanger life and even prove fatal from continued or frequently repeated hemorrhage. The symptomatology and treatment of these wounds were dwelt upon by the essayist at considerable length.

Dr. George S. Brown, of Birmingham, Ala., reported a case of vesico-rectal fistula of eight years' standing, the result of perineal lithotomy, with a cure after ten operations.

The following officers were elected for the ensuing year: *President*, Dr. Joseph Taber Johnson, Washington, D. C.; *Vice-Presidents*, Drs. F. W. Parham, New Orleans, and W. L. Robinson, Danville, Va.; *Secretary*, Dr. W. E. B. Davis, Birmingham, Ala.; *Treasurer*, Dr. A. M. Cartledge, Louisville, Ky.; *To Fill Vacancy in the Council*, Dr. L. McLane Tiffany, Baltimore, Md. Place of meeting, New Orleans; time, to

be determined by the secretary with advice of the council.

After the presentation and adoption of resolutions of thanks, the association adjourned.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

MEDICAL COUNCIL—PRESSURE IN SURGERY—A SPECIAL FORM OF HIP-JOINT DISEASE—THE PRINCE OF WALES—THE LATE SURGEON-GENERAL A. SMITH, DR. WEBB, AND PROFESSOR ALLMAN.

London, December 2, 1898.

The Medical Council has had to spend a good deal of time over the penal cases. How difficult it is for such a body to exercise judicial functions has once more been demonstrated. It was proposed to relegate this work to the branch councils, but the legal advisers said this could not be done. The penal committee only decides whether there is a *prima-facie* case. If a practitioner is to be tried at all, he must be brought before the whole council. Consequently much of Wednesday, Thursday, Friday, and a part of Saturday had to be devoted to this work. It is to be hoped that in any legislation some better tribunal may be authorized. The penal committee is in future to be elected annually.

A complaint was made that a gentleman had been refused a programme, and the president replied that it had never been the practice to supply them. In this he was quite mistaken, as I know from personal experience. Programmes could always be obtained by a visitor, and there can be no reason why they should not. I hope this is not another sign of a disposition toward obstruction by the new president.

It was decided to strike off the lowest of the preliminary examinations recognized by the council, and it is probable that this step is only the first in a series. The need of such a move has long been manifest, yet some over-cautious members managed to get the change postponed and professed a fear that there would be a danger of an inadequate supply of medical men for the public needs. Considering the notoriously overcrowded state of the profession, it is probable they were more likely afraid that fewer students meant fewer teaching fees. They should hear the remarks of general practitioners on this subject.

There was a good deal of difference of opinion on the Midwives Bill, and on this subject, too, councillors would be well advised to listen to the voice of the struggling practitioner. The talk, however, was directed chiefly to the necessity of preventing the expense of any change being thrown on the council.

The council approved the work of the committee on the subject of companies being formed to carry on professional work. This committee was reappointed, and there is hope of a law to prevent this scandal.

"Support without pressure" was a favorite phrase with the late Mr. Gamgee. The words would have been apt in the discussion on Monday at the Medical Society on a paper of Mr. Gould's entitled "The Value of Pressure in the Treatment of Wounds." The word uselessness might almost as well have been substituted for value, as the gist of the paper was to show that pressure is to a great extent ineffectual to secure apposition of the edges of wounds, to check oozing, lessen serous exudation, restrain muscular contraction, prevent cicatrices from stretching, and so forth. The author said he had given up for some time the use of pressure for such purposes, to the great comfort of his patients, while the wounds had healed as well or even better. He went so far as to say that a simple collodion dressing is all that is necessary after a laparotomy, and to this one remark the attention of subsequent speakers was too closely confined.

Mr. Alban Doran said that some years ago he tried the plan of doing without pressure after abdominal section, but he soon took it up again. He thought a bandage helped the patient to expel flatus and prevented the stagnation of fæces, so he approved of firm but not tight pressure.

Mr. Stanley Boyd rather agreed with Mr. Gould, and as to approximation of surfaces said this could often be secured by buried sutures.

Mr. Shield advocated moderate pressure, and remarked that, if not employed after colotomy, vomiting might be followed by escape of intestine.

Mr. Wallis advised operators to steer a middle course, and Mr. Beale said a certain degree of pressure was required to keep dressings in place.

In his reply Mr. Gould said he did not think a bandage could help in the expulsion of flatus, for persons troubled with that found relief by loosening all tight garments. He had never used more pressure after colotomy than sufficed to keep the pad in its place, and as to lessening serous exudation, pressure seemed to him more likely to cause it by interfering with the venous circulation.

At the last meeting of the Medico-Chirurgical Society Mr. Owen read a paper on a distinct variety of hip-joint disease in children and young persons. He thought acute suppurative cases should be carefully differentiated from tuberculous disease, and that they were caused by the micro-organism of osteomyelitis invading the loose tissue at the upper part of the diaphysis of the femur. The end of the diaphysis enters into the formation of the joint, to which fact Mr. Owen attributed the arthritis which occurs when the diaphysis is involved in osteomyelitis. This disease is characterized by its sudden onset, intensity, and rapid course. Death from septicæmia is likely to follow unless the disease is recognized and adequately treated. Mr. Owen advocates free opening of the joint, removal of the epiphysis and the affected part of the diaphysis, with thorough application of germicides to the interior of the joint, followed by drainage. He related four cases.

Mr. Barker remarked that the disease was generally recognized, and the necessity of prompt, active measures admitted. But he did not think strong germicides necessary. Thorough washing with sterile fluid was sufficient and did not give rise to destruction of tissue.

Mr. Spencer did not attach so much importance to the fact of the diaphysis entering into the formation of the joint, and could not agree with the radical proceeding of removing the head of the femur. He held that washing out the joint and drilling into the diaphysis was often enough. He preferred carbolic acid to mercurial germicide as less poisonous.

Mr. Warrington Haward supported Mr. Owen's recommendation, as a less radical treatment did not remove the seat of the disease and jeopardized the patient's life.

Mr. Wallis referred to the case he showed at the Clinical Society two years ago, in which, on opening an abdominal abscess, the head of the femur was found loose in its cavity.

Mr. Golding-Bird did not think it was always necessary to remove the head of the bone. He related a case in which the joint was washed out and the wound closed except a small gauze drain, and the patient, a boy of eight and one-half years, made an excellent recovery.

Dr. Stuart MacDonald remarked that in some cases, when the disease begins in the periosteum, recovery

may follow a simple irrigation of the joint. He mentioned a case in which an abscess was opened, and, the joint appearing normal, nothing else was done. But the next day the boy died of pyæmia, and on post-mortem the joint was found to contain two drachms of pus.

Mr. Bryant (president) could not quite indorse Mr. Owen's strong opinion, that it was necessary to use freely the gouge, scoop, and germicides; but he insisted that the bone should always be drilled.

It is announced in an official sort of way that the Prince of Wales has completely recovered, though he will continue to wear a slight splint as a precaution. This last point seems to be stated to account for the slight limp with which he walks at present.

The sudden death of Surgeon-General Alexander Smith closes a brilliant career. At an inquest on Tuesday it was shown that soon after breakfast he was seized with a feeling of sickness and fainting, and died before medical aid could be obtained. He was seventy-four years of age, and had served before Sebastopol and subsequently in India, and was P. M. O. in the Afghan War. Dr. Smith was frequently mentioned in dispatches, had received the C.B., and was honorary physician to the Queen. He retired in 1884.

A memorial to the late Miss Mabel Webb, M.B. Lond., is to take the shape of a new pathological museum at the Royal Free Hospital, where Miss Webb's work was accomplished.

Prof. G. J. Allman died on the 24th ult., aged eighty-six years. He was educated as a medical man and took a degree, but never practised the profession, having devoted his life to natural history.

THE "SURGICAL NURSES" OF THE ACADEMY OF MEDICINE—A REPLY.

To the Editor of the Medical Record.

Sir:—In your issue for November 26th appears a letter from the undersigned, written in the hope of inducing the management of the Academy of Medicine to exercise more care in selecting their surgical nurses, and specifying instances in which they have sent out "surgical" nurses who did not even know the names of the instruments, and that these should not be put into bichloride solution, and should be taken apart for cleaning.

In your issue for last Saturday the chairman of the executive committee replies. He disapproves of me and all my works; though without attempting to deny the truthfulness of the instances I gave.

I am saddened that I did not do so obvious a thing as to make my inquiry very privately, and of Miss MacHaffie of the Nurses' Bureau, since my obtuseness has resulted in the courteous if unconscious demonstration by Dr. Jacobi that a great specialist may be but a lesser logician, and one who proposes, as he states, "not to go behind the returns," but to continue supplying incompetent surgical nurses provided Dr. John Smith, of Nowhere, guarantees that they are all right and "up" in asepsis. Dr. John Smith is probably a pediatric specialist, or maybe is even a general practitioner. Hence, of course, he knows the details of that science in itself—practical asepsis—and consequently can judge of surgical nurses.

The result all may see who depend upon the Academy for surgical nurses.

I have never seen an abler instance, Mr. Editor, than Dr. Jacobi's reply, of the cuttlefish art of throwing ink to hide a main issue. Actually I am accused by him of desiring to introduce a religious test to the prejudice of certain of the nurses! He says: "But they are not asked" (at the Academy) "about their religion, as the gentleman appears to suggest, nor does the bureau care for their 'medical training.'"

Obviously the bureau does not care for their medical training: that I promptly admit. But why be proud of it?

After some puzzled reflection and a careful reperusal of my letter to the Medical Record, I have come across the only word in it which by any possibility of distortion could give Dr. Jacobi a handle for this remark upon religion. It is as follows: "I do not doubt that each of these nurses [criticised] was a true Christian, and was possessed of a fair amount of medical training; but it is calculated to shake one's confidence in the Academy's bureau to find them selected as exponents of surgery—and of asepsis" (of course, as applied to nursing).

Now, if Dr. Jacobi meant anything whatever by his remark, it must have been a chivalrous, if uncalled-for, defence of the Christianity of these ladies; his plain inference being that I prefer those of a different faith. The paradox presented by this bit of Quixotism is delicious—the nominal Christian being put on his defence! I am irresistibly reminded of the converse of the proposition, in that book of epigrams, "Without Prejudice": "'A pretty Christian thou art!' exclaimed a voice, in unthinking vituperation"—of the author, Israel Zangwill.

Perhaps in no other respect is a reply called for, unless it be to the triumphant inference that because one of the "surgical" nurses I complained of in my letter was retained by the family several weeks, she must have been satisfactory. The fact was, that after the first day there was no operating. She ceased to be needed for her asepsis, and was kept for different work, "because of her good heart," as the patient explained to me.

Whether the instances I have named were recent or old is entirely immaterial. One is quite old, another quite recent. Not by a word did I intend to "eulogize the good old days before MacHaffie's clerkship." That is a remark without any basis of truth.

I would beg to repeat that I have no axe to grind, and am far from being alone in my views upon this matter of the nursing.

The writer is a fellow of the Academy of a good many years' standing, and is an admirer of that great institution of which Dr. Jacobi is an ornament. But when one of its departments falls short of our reasonable needs in any particular, and when—as now—that particular can easily be remedied, it behooves the management not to quibble over words, but to "go behind the returns," if need be, for the honor of the Academy.

Robert H. M. Dawbarn, M.D.

105 West Seventy-Fourth Street, New York City.

THE TREATMENT OF LEPROSY IN HAWAII.

To the Editor of the Medical Record.

Sir: I see in November 5th of the Medical Record a letter from Dr. J. C. Bowker, of Lawrence, Mass., in which he gives me entirely too much prominence in the treatment of leprosy. The board of health created, in November, 1894, "a committee on the treatment of leprosy," consisting of Drs. C. B. Wood, F. R. Day, N. B. Emerson, George Herbert, R. P. Myers, and W. H. Howard—Dr. Wood, chairman, and myself secretary; Dr. L. F. Alvarez, microscopist and bacteriologist. The experimental station is situated at Kalihi, a few miles from the city (Honolulu), and is under the control of the board of health. I wish you would make a simple statement of the facts, as I do not wish to have the credit and prominence given me through the good intentions of my friend, Dr. Bowker. Dr. Alvarez is doing good work, and the committee all in its power to promote the allevia-

tion of the disease and what it can for its cure. In passing, I would also call attention to a statement in a recent editorial, which quotes a writer who credits us with lepers to the extent of ten per cent. of the population. As a fact proved by government statistics, there is not more than one per cent.

By making such a statement of facts you will much oblige ROBERT P. MYERS, M.D.

HONOLULU, November 23, 1898.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending December 17, 1898:

	Cases.	Deaths.
Tuberculosis	199	174
Typhoid fever	45	12
Scarlet fever	131	13
Measles	112	7
Diphtheria	171	19
Laryngeal diphtheria (croup)	20	7
Cerebro-spinal meningitis	0	3
Chicken-pox	32	0

To Remove Ink Stains.—Use a solution of chlorinated soda. Wet the stain with the solution and wash thoroughly after a few moments.

The Study of Leprosy in Breslau.—Arrangements are being made for the careful study and treatment of leprosy in the Breslau University clinic for skin diseases, the patients being brought from Eastern Prussia with great precautions as to isolation and disinfection of the railway carriages.—*London Lancet.*

Drinking in La Vendée.—The Paris correspondent of the *British Medical Journal* says that the inhabitants of La Vendée drink on an average four to eight litres of wine a day. They are rarely in a condition of alcoholism, and quite exceptionally have delirium tremens. Dr. Terrien believes that this immunity is due to the fact that white wine made from the grape grown in the district is almost exclusively drunk in La Vendée. The few sufferers from delirium tremens whom he met with had been in the habit of drinking bad red wine.

Color of Black Babes at Birth.—The negro baby, when it comes into the world, presents a delicate pink color; the second day it is lilac; ten days afterward it is the color of tanned leather; and at fifteen days it is chocolate color. The coloring matter which lies between the layers of the epidermis is semi-fluid, or in the form of fine granulations; in the Indian it is red, and in the Mongolian yellow. It is influenced not only by sun and by climate, but by certain maladies, and the negro changes in tint just as the white person does.—FARABERY.

Degeneracy in the Negro.—Dr. Johnson, of Brunswick, Ga., believes that the liberty granted the negro by the war of the rebellion brought with it a license to indulge in vice which has served to enervate and degrade him. Physical degeneration has been brought about by dissipation and want of care and forethought; and consumption, which before the war was almost unknown among the slaves, is now very prevalent. Dr. Johnson belongs to the race of which he speaks.

Accidental Lesions of the Aortic Valve.—Linemen and those engaged in heavy manual labor, especially heavy lifting and athletics, are among the victims of this accident. Also, in rare instances, soprano singers, when engaged in prolonged and exhaustive feats on the higher notes, are liable to this lesion, which may vary from a mere strain or slight yielding to the complete rupture of a valve. And the immediate symptoms may also vary from a slight faintness and enervation to complete syncope and collapse.—DR. J. C. SPOHN, *Tri-State Medical Journal*, November, 1898.

A Backslider.—A convict in the Trenton prison, who was a Christian scientist, was sent into the hospital one day last week, suffering from asthma. Dr. Brewer, knowing the patient's tendencies to look upon all ills as merely "mortal thoughts," susceptible to cure by belief in their non-existence, suggested that the cell would be a more appropriate place for undisturbed self-communion. To this the sufferer agreed. In the middle of the night, however, the doctor was called and begged to prescribe. The patient was lost to the "science," but not by it, as so many have been of late.

Sale of Horse-Flesh in Paris.—The annual statistics published by the French Ministry of Agriculture indicate that the consumption of horses, mules, and donkeys is steadily increasing in Paris. The number of stalls at which it is offered for sale now reaches 193. The number of horses brought to the shambles for slaughter was 21,667, of mules 52, and of donkeys 310; but 734 horses, 1 mule, and 7 donkeys were condemned as unfit for human food, so that the total killed and consumed was 20,933 horses, 51 mules, and 303 donkeys. The prime cuts fetched about a franc a pound, some of the inferior parts costing little more than ten centimes per pound.—*London Times.*

Heredity a Contrast.—In the *Revue Scientifique* for April last, Dr. Cesare Lombroso, in an able discussion of the relative influence of heredity and environment, announced the conclusion that "the influence of environment is potent enough to annihilate all ethnic traits." At the meeting of the German Anthropological Society in August of this year, Professor Kollmann, of Basle, in an address on the same subject, stated the dictum of science to be that "the influence of heredity is stronger than that of environment. The ethnic traits are immortal, and persist, though the people who bear them may disappear from history" (*Globus*, August 27, 1898). When two of the most distinguished anthropologists in Europe differ in opinion so widely, what is the ordinary searcher after knowledge to think, or whither shall he go for guidance?

Effect of Tea Cigarettes.—Tea cigarettes are of a grade of green tea which has but little dust, and is composed of unbroken leaf. This is dampened to make the leaves pliable and capable of being stuffed in the paper cylinder, while the dampness is not sufficient to affect the paper. The cigarettes are laid aside for a few days, and are then ready to be smoked. The feeling of a tea cigarette in the mouth is peculiar. The taste is not so disagreeable as might be supposed, but the effect on the tyro is a sense of thickening of the head and a disposition to take hold of something or sit down. If the beginner stops then, he will not try tea cigarettes again. If, however, the smoker sits down and tries a second cigarette, inhaling it deeply, then the thickening feeling passes and is succeeded by one of intense exhilaration. The stage lasts as long as the smoke continues. The agony of the opium fiend is a shadow to that of the nauseated victim of the tea cigarettes. Food cannot be looked at for hours, yet the first step toward a cure is a cup of tea. An hour afterward comes the craving for a cigarette.—*Medical Progress.*

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Original Articles.

MIDWIVES AS ILLEGAL PRACTITIONERS.[1]

BY ELBRIDGE T. GERRY,

PRESIDENT OF THE NEW YORK SOCIETY FOR THE PREVENTION OF CRUELTY TO CHILDREN.

THE office of midwife, which dates back to the days of ancient Egypt (Exodus i. 15–21), exists in this country more universally among foreigners than among natives. Abroad its functions are regulated by statute, or are under the control of the regular medical profession, excepting in those countries where the latter has no organized legal existence; and it is therefore quite natural that with the tide of immigration which has been pouring into America for the last fifty years, every variety of the human race from the other side of the Atlantic should bring with it the practices and the prejudices existing among the lower classes, which attach to this office. Among the lower classes of the larger nations of Europe, such as Russia, Germany, and Italy, the midwife is something more than a monthly nurse. She is permitted not simply to assist but to control the functions of parturition at their close, and rarely is the medical attendant called in, excepting in the event of some complication, or to relieve her from personal responsibility in case of error or carelessness.

In this country, however, the functions of the midwife are of a limited character. Among our own American people they existed previous to the institution of trained nurses, as the old familiar monthly nurses, but were even then merely an adjunct of the regular medical attendant in charge of the case. But with the influx of foreigners midwives came into the country, unobstructed by any specific legislation and not requiring the license or sanction of any medical or public board; and it was not until the boards of health and the medical profession in our large cities were aroused by the ignorance, want of cleanliness, and general incapacity, and frequent criminal practices of these women that legislation on the subject was attempted.

In 1893 the attention of the New York Society for the Prevention of Cruelty to Children was called to open violations of law by certain notorious keepers of so-called "lying-in asylums," who advertised ostensibly for that purpose in the daily papers, but whose places were more frequently resorted to for the purpose of criminal abortion. The society vigorously prosecuted and secured the conviction of these offenders: Frieda Karsch, Wilhelmina Schmitt, Bertha Schroeder, Annie Buckholz, Emily Winkelman, Helen Hoppe, Elizabeth Geyer, Edward Conrad, Christina Rothkran.

Finding their business thus seriously interfered with, many of the midwives upon legal advice proceeded to form a "Midwives' Association," and quite a number of them obtained articles of incorporation under the Hospital Act (Laws of 1889, chap. 95). The incorporators were usually the immediate relatives or friends of the chief figure, whose name appeared in the corporate title and without any direct or apparent connection with the "institution" run by her. One of these will appear later in this address as an illustration, as they are all substantially in the same form. After this "incorporation," when again arrested, they claimed that they were "institutions" within the meaning of the provisions of section 288, subdivision 2, of the Penal Code, as it then read. At that time a hospital association could be created without even the fiat of a justice of the supreme court; and to show the extent of this ingenious attempt to evade the law, the following is a partial list of the so-called "lying-in asylums" which were thus incorporated:

CORPORATE TITLE.	DATE OF INCORPORATION.
The Brown Home and Hospital for Females	October 20, 1893.
The Frieda Karsch Home and Lying-in Asylum	October 27, 1893.
The Schmitt Home and Hospital for Females	October 26, 1893.
The Hoppe Home and Hospital for Females	October 12, 1893.
Alma Landgraf Home and Hospital	October 18, 1893.
The Rothkranz Home and Female Hospital	October 11, 1893.
Becker's Home and Ladies' Hospital	October 27, 1893.
Schroeder's Home and Hospital for Females	August 24, 1893.
The Winkelman Home and Lying-in Asylum	August 17, 1893.
The Nagel Home and Hospital for Females	April 7, 1894.
Godarsky Home and Hospital for Women	January 17, 1894.
The Schott Home and Hospital for Females	January 17, 1894.

The society immediately conferred with the State board of charities, with a view to having the laws amended so as to cover the evil. The result was a bill, introduced in 1894 in the Legislature at the society's request by the late Senator O'Connor (being Senate Bill No. 89), which amended Penal Code, section 288, subdivision 5, by requiring the certificate of the State board of charities, approving the organization and incorporation of institutions of the character in question, and authorizing that board to apply to the supreme court for the cancellation of any certificates of incorporation previously filed without its approval. This bill became Laws of 1894, chap. 171. Another bill (Senate Bill No. 271) in the same year, amended the Laws of 1889, chap. 95 (being the Hospital Act), by forbidding the filing of a certificate of incorporation of such an institution without the approval of the State board of charities. This became Laws of 1894, chap. 256, and has continued to be the law to the present time. The attention of the State board was at the same time called to the existence of the so-called "institutions," and a request made that certificates previously filed by them should be revoked and cancelled by the action of that board under the provisions of the act referred to.

Unfortunately, no definite action appears to have been taken by the State board under the statute to cancel these certificates, and it is to be feared that many still exist. As late as October, 1898, the case of Christina Rothkranz, who had been previously convicted and "incorporated," as above stated, was brought to the attention of the society, and her arrest took place under the following circumstances: The officers of the society visited the rooms, No. 219 Seventh Avenue, where a sign appeared in the window, "Drs. Rothkranz," and an entrance bell marked "Drs.' bell" indicated the character of the dwelling. They inquired for Mrs. Rothkranz. She came in and accompanied the officers through the house, which is an old-fashioned three-story-and-basement structure. On the first floor were the dining-room and parlor of Mrs. Rothkranz. One flight up were her private apart-

[1] An address delivered before the New York Medical League, December 16, 1898.

ments, and the top floor was utilized for her servants and business. On the top floor in the front room an officer found a woman in bed, who stated that she had been confined five days previous of a male child, who was then in a crib in the room. This birth had not then been reported to the board of health. The officer inquired of Mrs. Rothkranz what doctor, if any, had attended the woman in her confinement, and she replied, "There was no doctor; I confined her myself, and she had just as good care at my hands as could be given by a doctor. I have brought many of them into the world and never had any mishap." A second visit to the house for the execution of a warrant against Mrs. Rothkranz, issued at the instance of the society, for keeping a lying-in asylum without a permit under section 288 of the Penal Code, disclosed the presence of a young woman, aged twenty years, in bed on the same floor and in the same room, then suffering from gonorrhœa and under medical treatment. Upon the arrest of Mrs. Rothkranz an examination was demanded before Magistrate Pool. The evidence in the case showed very clearly that Mrs. Rothkranz had only a certificate as midwife from a so-called "Columbia College of Midwifery," which speaks for itself. Here is a copy of it:

"Columbia College of Midwifery. Be it known that Christina Maria Rothkranz has attended the several courses of lectures delivered at the College and has passed a satisfactory examination in anatomy, physiology, obstetrics, parturition, and infancy. In testimony whereof, we, the Board of Directors, have granted this diploma of Graduate in Midwifery, given at our College in the City of New York this 16th day of June, in the year eighteen hundred and eighty-eight. Witnessed the signature of the President and Secretary (censors) and our corporate seal.

(Seal) "Columbia College of Midwifery, incorporated 1883. Max Feller, President; C. P. Kreizer, M.D., Secretary; E. S. Bates, M.D., J. Manion, M.D. (censors). Press of E. Scott, 463 Hudson Street, New York City."

Its name is presumed to have been selected in order to connect it in the minds of the ignorant with Columbia University, then Columbia College. It was located in West Forty-seventh or Forty-ninth Street in this city, and managed apparently for the financial benefit of the persons connected with it. Another institution similar thereto and possibly connected with it is believed to have been managed by another doctor. This so-styled "college of midwifery," although incorporated, had no more authority than any private individual to confer a diploma, and in the opinion of the County Medical Society its diplomas carried no more weight than a similar paper issued by any job printer. The teaching at this "college" was said to consist of the reading of some work on obstetrics a couple of hours a day, for a few weeks or a few months, when a diploma was issued, the "graduate" paying from $25 to $50 therefor. "It does not necessarily follow," wrote the counsel for the County Medical Society some time since, "that a woman is unworthy because she has the diploma of this rotten affair; but the college is not capable of giving a midwife any legal status that she cannot have without it."

It fully appeared upon the examination of Mrs. Rothkranz that she affixed the letters "Drs." to her sign to indicate "doctress," because, as she said, "it sounds better to have a fictitious name. People in general call a midwife in plain a doctress." Upon the examination, she admitted the insertion of an advertisement in the daily prints, reading as follows:

"Drs. Rothkranz; Incorporated Sanitarium for Females; thirty years' experience; treats female diseases; irregularities; positively painless; success guaranteed every case; confinements; strictly private; motherly care. 219 Seventh Avenue; one door below Twenty-third Street."

And then she claimed that she was duly incorporated as a hospital pursuant to the following certificate:

"Certificate of Incorporation of 'The Rothkranz Home and Female Hospital,' verified October 10, 1893, recorded in the county clerk's office, October 11, 1893. The certificate is verified before H. W. Leonard, notary public, New York County. Duplicate filed with the Secretary of State at Albany, October 11, 1893.

"State of New York, City and County of New York, ss.

"We, the undersigned, desiring to form a corporation as provided for under the statute regulating the incorporation of hospitals, do hereby in conformity therewith organize themselves for the purpose of establishing, maintaining, and operating a hospital or home, for the reception, care, maintenance, and the giving of medical and surgical advice, aid and treatment to females who are desirous of placing themselves under the care of the manager or medical attendant thereof.

"That the Hospital or Home of said corporation shall be located in the city of New York, and be known as 'The Rothkranz Home and Female Hospital.'

"That the business, object, and the purpose of said incorporation is as follows:

"To provide a home or hospital for the reception, care, and maintenance, and the giving of medical and surgical advice, aid, and treatment to females who are afflicted with physical injuries, weaknesses or deformities or infirmities or maladies, and who are about to be confined with childbirth, or in need of medical treatment in general.

"The affairs of this corporation shall be conducted, managed, and administered by a board of managers, to consist of nine persons, who shall hold office for one year after the filing of this certificate, and annually thereafter an election of the members of the board of managers shall be had which shall be by ballot by all the members of said corporation in accordance with the rules and by-laws hereafter to be adopted by said corporation.

"The officers and board of managers shall consist of a president, vice-president, secretary, and treasurer and medical examiner, and who shall with four others constitute a board of managers, and who shall have and possess full power of the general management of the said home or hospital, as provided by the rules and by-laws of the corporation.

"The following members shall constitute the board of managers: 1, Mrs. Christina Rothkranz; 2, Arnold Rothkranz; 3, Arnoldine Rothkranz; 4, Louis Rothkranz; 5, Louise Hansen; 6, H. J. Schiff, M.D.; 7, Anna McEvoy; 8, Alice Haffenan; 9, Bertha Hartman.

"In witness whereof we have hereunto set our hands and seals this 9th day of October, in the year one thousand eight hundred and ninety-three. In presence of H. W. Leonard.

"Mrs. Christina Rothkranz, Arnold Rothkranz, Arnoldine Rothkranz, Louis Rothkranz, H. J. Schiff, M.D., G. G. Gaertner, Louisa Hansen, Anna McEvoy, George Brown, B. G. Jenne, A. C. Clark.

"State of New York, City and County of New York. On this 10th day of October, in the year one thousand eight hundred and ninety-three, before me personally came Mrs. Christina Rothkranz, Arnold Rothkranz, Arnoldine Rothkranz, Louis Rothkranz, Louise Hansen, H. J. Schiff, M.D., G. G. Gaertner, Louise Hansen, Anna McEvoy, George Brown, B. J. Jenne, A. B. Clark, to me known and known to me to be the individuals described in, and who executed the foregoing instrument, and they thereupon acknowledged to me that they executed the same. (L. S.) H. W.

Leonard, notary public, New York County. Endorsed, filed, and recorded 11th October, 1893. M. J. D.

"No. 229, State of New York, City and County of New York, ss.

"I, Henry D. Purroy, clerk of the said city and county, and clerk of the supreme court of said State for said county, do certify that I have compared the preceding with the original certificate of incorporation of The Rothkranz Home and Female Hospital, on file in my office, and that the same is a correct transcript therefrom, and of the whole of such original. Endorsed, filed, and recorded 11th Oct., 1893, 9h, 40m.

"In witness whereof I have hereunto subscribed my name and affixed my official seal, this 20th day of Nov., 1893. Henry D. Purroy, clerk."

She was held to answer by the magistrate notwithstanding, upon the charge of keeping a lying-in asylum without a license, and also for violation of the State medical law in practising as a physician, not being licensed. The case has not yet been disposed of in the trial court. The opinion of Magistrate Pool is instructive:

"The testimony in this case goes to show that the defendant is the sole representative and manager of the alleged corporation, purporting to be organized for the purpose of establishing and maintaining a hospital or home for the reception, care, maintenance, medical and surgical advice and treatment of females who may place themselves under the care of the manager or the medical attendant thereof. The purported managers of this corporation are mostly the relatives of the defendant, residing out of the State, and not in any way conducting and carrying on the purposes for which the corporation purports to have been organized.

"I find from the evidence that the defendant uses and controls the corporation for her own personal use and benefit, and to do so attracts persons to the same by fictitious advertisements, so that she may treat female diseases 'positively painless: success guaranteed every case; confinements; strictly private'; and that in such or any cases of persons attracted to said advertised place the defendant receives pay in her own right for any services she may have given them, whatever they may be; that the services by the defendant given by her are in most cases outside and in another place out of the alleged advertised home of the corporation.

"It further appears to me from the evidence that the defendant is not lawfully authorized to practise medicine within this State; and that from the evidence the defendant assumes and advertises herself as a doctress and holds herself out as such doctress, and by her conduct, advertisement, and solicitation conveys the impression to the unsuspecting persons who are seeking and needing medical and obstetric attention, that the said defendant is a legal practitioner of medicine; and I find that she is conducting business under cover of said corporation charter.

"It is apparent to my mind from the evidence that the defendant is using the alleged corporation name to further her business and practice of midwifery; that the corporation is not carried on there for legitimate purposes nor for the purpose which it is alleged the same was organized for; and the attorney-general should be notified of the fact, that he may take the necessary steps to annul the charter.

"I therefore hold that there is probable cause to believe that the defendant has committed the offense charged in the case of Thomas R. Agnew on behalf of the people and also the case of the Medical Society of the County of New York against this defendant, and I fix the bail in each case for trial at five hundred dollars."

Now this case has been cited as an illustration of the difficulties which arise in dealing with offenses of this description. In the first place, there is no registration of midwives by competent authority. True, they claim that they are "registered" by the board of health. But this amounts to nothing, as the officials of that board admit that they register anything but do not examine as to qualifications. In other words, this registry simply consists in taking whatever name and address the woman may give; it does not decide or affect her qualifications or right to practise. Anybody can register as a midwife who desires to do so. This class of women practise midwifery principally in the thickly settled districts of the city, charging for their services at times as low as from five dollars to one dollar. No physician attends. The woman is left afterward in a very improper condition, with the result frequently that she is an invalid for the rest of her life and a burden upon some poor laboring man, or at least unable ever again to bear children. Not only this; but the child, from the inattention and negligence of the midwife to report to some medical authority the condition of its eyes, becomes a subject for the care of some hospital or eye infirmary for a long period; or worse still, in many cases, not receiving such care, becomes partially or totally blind. Even when the case is cared for by the eye infirmary, and when the most skilful treatment is given the child by the physicians attached thereto, the child at times is afflicted with partial and perhaps total blindness. The society is frequently called upon by the hospitals to prosecute the midwife who occasioned the trouble. Any of the physicians attached to the infirmaries for the treatment of the eye in this city will testify to the truth of this statement. The society has successfully prosecuted many of these cases.

Another class of these women embraces those who advertise in the daily papers to take women in confinement. To them resort those who desire to conceal their unfortunate condition; the great majority of whom, it is found, reside outside the city of New York, and sometimes come from other States. In one of these establishments recently an officer found five women, all of whom were residents of other places. After being delivered of the child, unless an abortion is effected, which is many times the case, thereby risking the life of the woman and frequently resulting in her death, the child is disposed of by being left in the street, through the assistance of the midwife, or is "adopted" out, after passing through the hands of two or three confederates of the midwife, the person "adopting" paying a certain sum of money for the child, and later being subjected to a species of blackmail for a considerable time, or to threats of exposure, by bringing the mother to take the child away, after the foster parents, perhaps very reputable people, have become attached to it. This was recently illustrated in the case of The People *v.* Louisa Wagner, now undergoing imprisonment for keeping one of these establishments. It was shown in her case that she "adopted," or sold, a child to a gentleman and his wife for ten dollars, and later, after the gentleman's wife had become very much attached to the child, she demanded a present of one hundred dollars, threatening that otherwise she would bring the mother of the child to claim it. He fortunately called the society's attention to the matter, and through its assistance the "midwife" was thwarted in her attempt at blackmail and extortion.

Very few of these so-called "midwives" have any knowledge of anatomy, or of the proper care of a woman in confinement.

It should be borne in mind that there are plenty of legitimate maternity hospitals located in the borough of Manhattan, to attend to the care of women in confinement. Here is a list of some of them:

Maternity Hospital of Department of Public Charities, Blackwell's Island; Emergency Hospital for Wo-

men (branch of above), 223 East Twenty-sixth Street; The New York Foundling Hospital, 130 East Sixty-ninth Street; New York Infant Asylum, Amsterdam Avenue and Sixty-first Street; New York Mothers' Home of the Sisters of Misericorde, 523–537 East Eighty-sixth Street; Nursery and Child's Hospital, 571 Lexington Avenue; The Old Marion Street Maternity Hospital, 139 Second Avenue; Sloane Maternity Hospital, Fifty-ninth Street and Tenth Avenue; Society of the Lying-in Hospital of the City of New York, Seventeenth Street and Second Avenue; New York Medical College and Hospital for Women, 213 West Fifty-fourth Street; The Mothers and Babies' Hospital, Lexington Avenue and Fifty-second Street; The New York Infirmary for Women and Children, 5 Livingston Place; Ladies' Hebrew Lying-in Society, 128 Second Avenue; Metropolitan Dispensary and Hospital for Women and Children, etc., 1307 Lexington Avenue; Colored Home and Hospital, Sixty-fifth Street and First Avenue; New York Post-Graduate Medical School and Hospital, Twentieth Street and Second Avenue.

The remedy for the evil is very simple. If the attention of the State Medical Society was called to the matter, with a bill properly drawn, requiring the registration of midwives either generally, or at least in all cities, making it a penal offence for any woman to practise as a midwife without being so registered; and placing the control of the matter in the hands of the local County Medical Society, the evil would to a great degree be suppressed. The act should provide that all women permitted to practise as midwives should be compelled to serve a definite prescribed course in some duly incorporated maternity hospital, and receive therefrom a diploma similar to that now issued to trained nurses by training schools. They should then be required to duly register in some proper public office (that of the county clerk, for instance), under proper provisions and safeguards defined by the county medical societies, which should have the right to apply for the removal of their names from the list at any time, for cause shown; and, in addition to this, there should be a further proviso, forbidding any incorporation of such midwives with other persons for any purpose incidental to, or connected with, their business. With these safeguards the illegal practice of these midwives might be restrained; and, while it may not be possible to suppress them as a body, so long as their functions are controlled by the legitimate medical profession an additional security will be afforded against the unlawful practices which are now the cause of frightful infant mortality in this city.

A CASE OF ANEURISM OF THE UTERINE ARTERY, CURED BY LIGATION OF THE INTERNAL ILIAC ARTERY.

By PAUL F. MUNDÉ, M.D.,

GYNECOLOGIST TO MOUNT SINAI HOSPITAL, NEW YORK.

THE reason for reporting this case is its rarity. In an experience of over thirty years not only have I never before met with such an accident, but a careful search through the surgical and gynæcological literature at my disposal has failed to discover a mention of its occurrence. In the most comprehensive work on general surgery in my library—Ashhurst's "International Encyclopædia of Surgery," 1883—there is no mention of aneurism of the uterine artery, although aneurisms of various abdominal arteries are recorded, apparently including all known instances of the lesion in that locality. And none of the surgeons or gynæcologists of my acquaintance of whom I have made inquiry has a recollection of seeing any condition in the female pelvis which might be looked upon as an arterial enlargement resembling an aneurism, with the sole exception of Dr. E. Pierre Mallett, of this city, who remembers meeting with a strongly pulsating swelling in the vaginal vault of a woman whom he examined within the past year in his service at the Vanderbilt clinic. He was unable, however, to confirm his suspicion as to the character of the swelling, as the patient did not return.

Considering the liability of the uterine artery and its branches to frequent prolonged dilatation during the physiological hyperæmia of pregnancy and the pathological changes incident to the development of fibroid tumors and ectopic pregnancy, and also the common injuries to which this vessel is subjected at the time of labor and by surgical measures, it is strange that the uterine artery should have remained free from a lesion which occurs so readily in nearly all the more important arteries of the body.

The danger common to all aneurismal enlargements, that of rupture, applies equally to aneurism of the uterine artery, although the course of that vessel in the pelvic cellular tissue lessens the risk in a measure, owing to the comparatively limited space in which the effusion of blood can occur. Still, as is well known to take place in intraligamentous rupture of an ectopic gestation sac or in a pelvic hæmatoma due to the bursting of a varicose vein in the pelvic cellular tissue, the escaped blood may be sufficient in amount to dissect up the peritoneum as high as the renal region and produce alarming and dangerous collapse. Hence an aneurism of the uterine artery cannot be considered a trifling lesion, and must be treated and cured as soon as discovered, on the principle applied to all other aneurisms, by shutting off as much as possible the blood supply to the diseased vessel, and thus producing a coagulation and shrinking of the aneurismal contents and sac. And it was on this principle that I treated the present case.

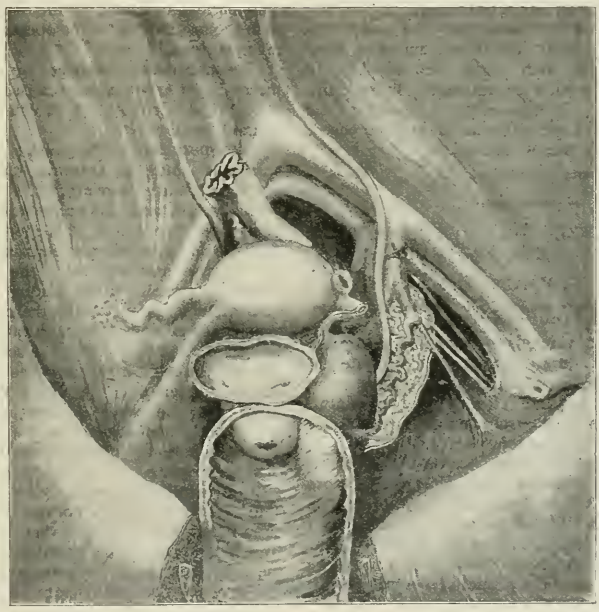
On September 28, 1898, Mrs. N——, thirty-two years old, mother of one child, eight years of age, called on me at my office for an examination, complaining of a "burning, throbbing" sensation in the left inguinal region. She reminded me that I had seen her two years previously at her home, in consultation with Dr. E. C. Savidge, who had operated on her for a lacerated cervix, after which operation an abscess had developed. I remembered the case perfectly. I found pus issuing from the external os when pressure was made with the finger on a boggy, soft swelling in the left vaginal vault, and I judged therefrom that there was a fistulous communication between the cavity of the abscess and the cervical canal. Hence I advised slitting out the cervix from the sinus down to and through the external os and into the abscess, so as to lay the cavity of the latter freely open. This Dr. Savidge informed me later was done, and the abscess closed rapidly. A severe venous (so Dr. Savidge distinctly told me) hemorrhage took place at the time, which was controlled by tamponade.

The patient stated that she had been perfectly well and under no medical care until three months previously, when, while on a visit in the West, she felt an uncomfortable feeling in the left lower part of the abdomen, and consulted a physician in Milwaukee, who examined her and told her that she had a "swelling" in the left side of the pelvis, for which she should consult a specialist on her return home. He gave no opinion, she says, as to the nature of the "swelling."

I expected to find a chronic salpingitis or some chronic inflammatory condition of the appendages or cellular tissue, but was more than surprised to find a softly elastic, strongly pulsating, and thrilling tumor, of about the size of a hen's egg, projecting into the left vaginal vault, close to the cervix and extending

slightly down on the left vaginal wall. At one point next to the cervix there was a "purr," so pronounced and distinct as to make me apprehensive that the aneurism, as it clearly was, might burst at any time. The accompanying illustration, made for me by Dr. W. H. Luckett, former house surgeon to Mt. Sinai Hospital, gives an excellent representation of the site of the aneurism as well as of its vascular relations. It was evidently an enlargement of the uterine artery, that being the only arterial vessel in that locality which was sufficiently large to admit of such a dilatation.

The dangerous character of the lesion was evident, and the remedy seemed equally clear, namely, the ligation of the arterial trunk, from which spring the uterine artery as well as several other smaller vessels supplying the female pelvic organs. That trunk is the internal iliac artery. It occurred to me that I might be able to reach and ligate the undilated portions of the uterine artery at either end of the aneurism through an incision in the vaginal vault; but the uncertainty as to the exact origin and extent of the aneurism, and the danger of wounding a vessel, vein or artery, the ligation of which through the vagina would prove difficult or impossible, as well as of injuring the ureter, deterred me from adopting this method. To apply clamps to the artery at either side of the dilatation, and thus bring about the coagulation of its contents, seemed too uncertain and risky.



There remained for me, therefore, only one safe and sure way of cutting off the blood supply to the diseased vessel, namely, by opening the abdomen and ligating the internal iliac artery midway between its separation from the common iliac and its division into the hemorrhoidal and uterine arteries. The direct blood supply of the aneurism would thus be checked, with the exception of the probably trifling amount received by anastomosis with the ovarian artery.

As regards the etiology of the aneurism, it occurred to me that it might be traumatic, the artery having been injured at the time the abscess was opened. I communicated with Dr. Savidge at once by telephone, and he informed me of the violent venous hemorrhage at that time, but could throw no light on the causation of the aneurism.

Fearing the risk of delay, I sent the patient at once to a private room in Mt. Sinai Hospital, and operated on October 1st, with the kind assistance of Dr. Howard Lilienthal, adjunct surgeon to the hospital. Through a four-inch incision in the left semilunar line I opened the abdomen in Trendelenburg's position, and after some difficulty in isolating the artery, especially from the ureter which crosses it and lies close to the inside of it at that point, I succeeded in passing a Deschamp's pedicle needle under it and ligating it gently but firmly, so as not to injure its coats, with chromicized catgut. Before doing so, the finger of an assistant on the aneurism in the vagina informed me when pressure on a certain part of the artery arrested pulsation in the aneurism, and it was at the spot thus indicated that the ligature was applied. When tightened, pulsation in the aneurism ceased entirely. The wound in the peritoneal covering of the vessels was closed by fine uninterrupted catgut suture, and the abdominal incision by buried catgut and deep silkworm-gut sutures. Recovery was uneventful.

Immediately after the operation there was a faint, apparently transmitted pulsation in the aneurism, which at the end of a week had increased somewhat, probably owing to the establishment of collateral circulation. The purr and thrill had, however, entirely disappeared, and never returned, and the outer portion of the aneurismal swelling had become hard and solid, and had evidently contracted. Wishing to make as perfect a cure as possible before discharging the patient, I decided to try the effects of galvano-puncture of the aneurism, and twice at intervals of three days passed a current of twenty milliamperes from a chloride-of-silver battery through the sac for half an hour, a carefully insulated platinum needle being thrust deeply into the centre of the aneurism and connected with the positive pole, the negative pole being a large wet sponge under the left natis. The effect of these two galvanic sittings in hardening and shrinking the aneurism was very apparent, but I am confident that this method would have proved utterly inadequate and probably dangerous through the possible detachment of particles from the thrombus and distant embolism, if the chief arterial supply had not been previously shut off by ligation.

When last examined, six weeks after the operation, the aneurism had shrunken to one-half its original size, was hard and painless (at no time, indeed, had it caused any particular pain), and pulsated no more than the normal uterine artery.

I should add that the cervix was normal, the incision at the time of the abscess having healed with scarcely a trace.

While exploring the abdominal cavity during the operation, I could reach the upper border of the aneurism with the tip of my finger, but could not trace out its limits with sufficient clearness to feel justified in attempting to ligate its immediate afferent and efferent vessels; neither did I attempt to ligate the ovarian artery, which I could easily have done at the upper margin of the left broad ligament close to the uterus. I did not estimate its relation to the aneurism by anastomosis with the ascending branch of the uterine ar-

tery as of sufficient importance to call for a prolongation of the operation. However, should I meet with another similar case, I would take this additional precaution. To endeavor to dissect out the whole aneurismal sac after ligating or clamping its vessels, as has been suggested to me, would, I think, be too hazardous and uncertain, and anatomically too difficult, however tempting and theoretically practicable it might appear.

As regards the ligation of the internal iliac artery, it may be permissible to say that it is by no means an easy operation, even with the vessel exposed as it is in Trendelenburg's position. The difficulty is chiefly the isolation of the artery from the vein and the ureter, and, this accomplished, the passing underneath and around it of the ligature needle. I found the ordinary aneurism needle and a bent silver probe insufficient to force their way through the subjacent areolar tissue, but the slightly sharp tip of the Deschamps ovarian pedicle needle answered admirably, the point being carefully watched by the left index finger.

The operation is a comparatively rare one; Ashhurst says that up to 1883 "the whole number of cases is about twenty-seven, with eight recoveries." No doubt, since the perfection of antiseptic surgery and the introduction of Trendelenburg's position, the number of cases of this operation has greatly increased, with a corresponding rate of recoveries.[1]

20 West Forty-Fifth Street, November 21, 1889.

A NEW OPERATION FOR THE RADICAL CURE OF HEMORRHOIDS.[2]

By H. J. SCHIFF, M.D.,

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I know of no disease which is so amenable to surgical treatment as hemorrhoids, whether they are internal or external. There are in practice at present many operations for the cure and relief of this complaint, but they all have the same disadvantage, namely, that the time of convalescence is too long.

I have nothing to criticise as regards the effectualness of the operations now in use. They are all more or less curative. "The knife and ligature," "the clamp and cautery," "Whitehead's partial excision of the lower bowel," etc., etc., are all good in their proper place; but one and all have objections, and these objections are the cause of my placing before you, for your careful consideration, a new operation.

The clamp and cautery operation is undoubtedly very rapid in its execution. Not more than five to fifteen minutes is consumed in its performance, but after the slough separates it leaves a large granulating surface or surfaces which usually take from two to three weeks to cicatrize.

The incision and ligature operation (Allingham's method) is also rapidly done, but it takes six to ten days for the ligatures to separate, and about ten days longer before the wound is perfectly healed and the patient pronounced cured.

"Whitehead's" operation also has its objections, although it is an ideal one in certain cases. It is very bloody in its performance, and in quite a few instances it has been followed by anal stricture.

The operation I am about to describe is very simple, easy of performance, rapidly done, and is followed by a quick convalescence.

The patient is prepared as for all hemorrhoid operations. The bowels are thoroughly cleansed with frequent enemata and cathartics for from twenty-four to forty-eight hours before the time of operation. The perineum is shaved and rendered thoroughly aseptic. The patient is placed in the lithotomy position after being anæsthetized. The operative field is once more made surgically clean.

The instruments required are very few and simple: three or four artery clamps, scissors, scalpel, and small needles; either fine silk or catgut as suits the fancy of the operator.

The Operation.—Thoroughly stretch the sphincter and pass a plug of iodoform gauze into the bowel as a precautionary measure, as I have frequently seen much trouble and annoyance when this was neglected.

If there is a circle of hemorrhoids divide it into quarters and operate on one quarter or one hemorrhoid, as the case may be; seize the mass or hemorrhoid with a clamp, and while making traction make an elliptical incision encircling the mass, and carefully cut from the cutaneous surface inward and upward leaving the vessels the last part to be severed, and as soon as the vessels come into view grasp them with an artery clamp and separate the entire mass from its connections with the bowel. Now ligate the vessels and suture the mucous membrane and cutaneous wounds, as you would any other wound in which you sought primary healing. This completes the operation.

A few words in regard to the method of suturing I employ. If I have a normal bowel to deal with, I suture from side to side—that is, I suture so that the line of union shall be parallel with the bowel; when there is prolapse or a tendency to prolapse, or a very lax bowel, I also suture parallel with the bowel. In cases, however, in which there might be a tendency to stricture or in which the lower bowel is narrow, I suture at right angles to the bowel, so that my cicatrix will be parallel to the sphincter, and in some cases I should even advise that the anterior and posterior wounds be sutured parallel with the bowel, while the lateral wounds are sutured at right angles to the bowel.

In all cases the old rule of leaving mucous membrane between the masses removed must be adhered to, otherwise you have nothing to suture. After suture is completed withdraw the iodoform plug.

The claims which I make for this operation are:

I. The patient is well in from three to five days; there is no lengthy convalescence.

II. There is less pain during convalescence than follows any of the other operations.

III. By the fourth or fifth day the patient is able to attend to his business, which is a desideratum in these cases.

IV. The only difference in time of performing this operation and the clamp and cautery operation is the time consumed in suturing.

V. There is less danger of secondary hemorrhage in this operation than in Allingham's or the cautery operation.

[1] After this case was reported to the section on obstetrics and gynæcology of the Academy of Medicine, on November 25th, the proceedings of which appeared in the MEDICAL RECORD for December 10th, and after this article had been sent to the MEDICAL RECORD, I received a note from Dr. A. Jacobi, informing me that a case of aneurism of the uterine artery was recorded in the Wiener medizinische Wochenschrift, No. 37, 1891. I looked up the article and found that at the meeting of the physicians and naturalists of Poland, held in Cracow, on July 17 to [illegible]01, Prof. Anton Mars reported "a hitherto unknown and undescribed case of aneurism of the uterine artery" in a woman forty-four years of age; the tumor in the vagina was as large as a hazelnut, and the chief symptom and sensation were violent throbbing. He suggested the danger of rupture during a future confinement. Bylicki, of Lemberg, had seen a similar case, which burst during labor, and the patient died. He advised galvano-puncture rather than operation. Possibly it had been caused by compression by forceps. Braun, of Cracow, recommended ligature of the afferent vessel. While this case deprives my observation of its unique character, the aneurism in my case was not only three times as large, but also more dangerous in possessing thinner walls and being liable to burst at any time, irrespective of pregnancy and labor; and, finally, it was cured by two of the methods suggested—ligation and galvano-puncture.

[2] Read before the Metropolitan Medical Society, November 22, 1898.

I have now performed this operation seven times and have had more satisfaction than from any of the others.

The after-treatment and dressing do not materially differ from those we have been accustomed to in other cases. I insert an opium suppository and a tube wrapped about with iodoform gauze, and on the third day I give repeated small doses of sulphate of soda or magnesium until the bowels act.

In looking over the literature of this subject I find no mention of anything at all similar to this operation, although for the past ten years I have given the preference to that of Allingham, except in addition to what he recommends I sutured the entire wound save at the place of ligature. In this operation I also cover the site of the ligature.[2]

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DIAGNOSIS AND TREATMENT OF SUPPURATIONS OF THE MIDDLE EAR.[1]

By MAX TOPLITZ, M.D.,

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Exhaustive papers upon otological subjects are but rarely read before general medical societies. This is simply due to the slight interest of the general practitioner in this subject. Otology has always been considered as the stepchild of medicine. In this country it is an appendix of ophthalmology, with which it is but very loosely connected. It is not as yet admitted in Germany as subject of the state medical examination.

The extent of otology, it is true, was formerly quite limited, and the general opinion prevailed among physicians that the treatment of aural diseases was, on the whole, of little value, which holds good as well of extreme cases of deafness as of atrophies of the optic nerve. In this province, however, of late an extreme transformation has taken place. The knowledge of affections of the ear and their treatment has so progressed as to place otology on the same level with the other branches of medicine. If I, therefore, dare to read an otological paper, I do it with the firm belief that otology, althought a strict specialty, has preserved its intimate connection with general medicine, particularly in the province of suppuration of the middle ear.

The tympanic cavity is very small. It measures in its largest diameter sixteen millimetres, is thirteen millimetres long, and the distance of the drum membrane from the promontory is but two millimetres. Anteriorly it communicates directly with the Eustachian tube, posteriorly with the mastoid antrum. The Fallopian canal lies freely exposed at the inner wall. The cavity is divided into an upper space, the attic, and into a lower one, the tympanum proper. Shrapnell's membrane limits the attic outwardly.

Three pathological processes claim our interest in considering aural suppuration: Acute simple otitis media, acute perforative otitis media, and chronic suppurative otitis media. In the description of these affections I limit myself to the conditions important for diagnosis.

Otoscopy, in acute simple otitis media, offers the picture of inflammation of the membrana tympani, which is frequently bulged out by the pressure of secretion, particularly in the postero-superior quadrant. The subjective symptoms consist in pain, occurring in attacks increasing at night and extending into the neighboring parts. In many cases headache and toothache are the only complaints. Fever, increasing in the evening, is not unfrequent, and is in children in some instances so high as to be associated with vertigo, headaches, dulness, vomiting, deliria, and convulsions, occasionally with temporary facial paralysis and clonic convulsions. Violent cerebral symptoms have also been observed in infants. In some cases the temperature is but slightly increased, and there is also deafness in the diseased ear. In suspected cerebral disease or meningitis of children, otoscopy will frequently exclude these affections. Acute otitis media is often mistaken for dental convulsions. Infants during an attack of otitis media are extremely restless, particularly at night, cry incessantly, grasp the head, are feverish, and become emaciated.

Simple acute otitis media, if rationally treated, is usually perfectly cured or becomes perforative. The latter offers the same otoscopic picture as the simple acute form, enhanced by greater distinctness of serous imbibition and bulging in a yellow spot. Perforation takes place through a small opening, but in infectious diseases frequently from the onset through a large hole. The secretions are seen at the bottom of the external auditory meatus, more or less profuse, of serous, sanguinolent, purulent, or muco-purulent character.

The symptoms are the same as in the acute simple form, more violent however, with temperature above 40° C., frequently beginning with chills, occasionally associated with the severest cerebral symptoms, which may entirely disappear after the establishment of perforation. The acute perforative form cannot be distinguished before perforation from the acute suppurative form.

Chronic purulent otitis media develops from the acute perforative form in scrofulous, tuberculous, syphilitic, diabetic, and cachetic individuals; in scarlet fever, diphtheria, typhoid fever, and after severe puerperia; in chronic affections of the nasal mucous membrane, in complications with otitis externa and mastoiditis, in persistent granulations and caries, and finally through irrational treatment.

The external auditory meatus and the tympanic cavity contain secretions mixed with blood if granulations are present. The offensive odor of the pus is due to saprophytes. Sparse secretions frequently dry up as crusts, which cover the pus, promote the proliferation of granulations, and occlude small perforations. The membrana tympani, apart from perforations in the pars tensa, presents in some instances those of Shrapnell's membrane, behind which secretions stagnate in the attic, attacking the ossicles, the lateral wall of the tympanic cavity, and the mastoid antrum. The stagnating pus is creamy, viscid, offensive, and fills occasionally the attic and mastoid portion with cholesteatomatous masses and granulations. The changes of the membrana tympani, manubrium mallei, and mucous membrane of the tympanum are manifold. The acuteness of hearing is more or less decreased. In chronic suppurations pain exists in affections of the mastoid portions, in retention of pus, in caries of the middle ear, and exacerbating inflammations. Facial paralysis renders the diagnosis of caries almost a certainty, which is still further substantiated by vertigo and vomiting. Chronic suppurative otitis media is entirely cured under favorable conditions of the patient's constitution, and with rational treatment by the formation of a cicatrix of the membrana tympani, and in persistent perforations by epidermisation of the tympanic mucous membrane. On the other hand, the suppuration may last throughout life, or, more frequently, lead to death by the development of meningitis, brain abscess, sinus phlebitis, pyæmia, and sep-

[1] Since writing the above I have ascertained that Dr. J. Coplin Stinson, of San Francisco, has reported an operation in many respects similar to the above. We both seem to arrive at the same conclusion, that excision and suture is the best method; but my mode of excision and suture is not exactly like his.

[2] A paper read on May 2, 1898, before the German Medical Society of New York.

ticæmia; rarely by erosion of the carotis interna, sinus transversus, and bulbus venæ jugularis. Exacerbations of chronic suppurations constitute a greater danger. The sequelæ often occur quite suddenly, and more frequently in chronic than in acute suppurations. Every suppuration, no matter how small, is a menace, and perforation of Shrapnell's membrane is severer owing to the difficulties of treatment and to cholesteatoma resulting therefrom.

The treatment of aural suppurations comprises the acute and chronic otorrhœa.

The *general* treatment consists in the prevention of injuries to the ear and head respectively. Congestions of the head due to faulty ventilation, overfilling of the stomach, use of alcohol, constipation, etc., should be avoided. Absolute rest is to be strictly enforced. The diet should be fluid. As long as absorption of the secretions is expected, abstraction of blood with Heurteloup's instrument or leeches applied to the tragus or mastoid are adequate measures. Before the spontaneous or artificial evacuation of the pus, instillation of water, as hot as it can be borne, or introduction of vapors should be ordered against the pain. Opium and cocaine are locally of little value. Cold solutions should never be used in the ear. Ice applications around the auricle are very efficient. If ice cannot be borne, hot poultices should be substituted (not to be placed upon the auricle). The pain is principally caused by the extreme tension of the pus inclosed by the membrana tympani and bony walls. The incision, relieving the tension, often removes the pain instantly. The paracentesis should be aseptic and as deep and long as possible. Any small-bellied scalpel can be used. The opening made by a slender blade is too small, since the entire cutting edge cannot fully act. The lancet-shaped knives formerly in use should be rejected. The knife used by myself differs from others in its minute point and its extremely curved edge. One incision into the postero-inferior quadrant of the membrana tympani usually suffices. Beginners, puzzled by the shortening of the shaft of the knife in the perspective, either do not reach the membrane or cut too far beyond it. In suppurations of the attic, Shrapnell's membrane and the posterior fold ought to be severed. Dench devised the formation of a flap. Neither before nor immediately after the perforation should air be driven through the catheter or Politzer bag into the middle ear, since micro-organisms are thus introduced into the ear, and secretions forced through the aditus and antrum into the mastoid or through defects in the tegmen tympani into the middle cerebral fossa. After perforation, catarrhal secretions should not become purulent, and aerial inflations are also to be avoided. It suffices to introduce in these cases, and in ruptures of the membrana tympani, aseptic plugs to the drum membrane, which are to be changed as soon as they are saturated. In purulent discharge, above all, proper drainage ought to be established. If the perforation is too small or closes, it should be enlarged or reopened. Permanent openings are produced by the galvano-cautery. In well-drained cases with moderate discharge, dressing with sterilized gauze in the external meatus and absorbent cotton above it, attached with roller bandage, the patient lying upon the affected ear, is of advantage. The dressing is changed every twelve hours. This treatment can be carried out only in hospitals and private practice. Syringing of the ear is generally practised in Europe and in this country. It should be carefully and exactly executed, and cannot be spared at all in profuse discharges. Only piston syringes should be used. The syringes of American make are not so good as the English ones, since the pistons, not fitting hermetically, advance by jerks, and thus drive a good deal of air into the ear. Fountain, soft balloon, alpha syringes, etc., are to be rejected, principally on account of their frequent dirty conditions due to their applications to other purposes and of their uneven and sudden action. Forced syringing produces vertiginous attacks. The air should be removed before syringing, by turning the syringe. The temperature of the water ought not to exceed 104–108° F., and generally blood temperature suffices. Sterilized water is best suited for syringing. The lowest capacity of the syringes should be two ounces. One or two syringefuls suffice for each application. Boric acid (1:30), carbolic acid (1–2:100), and sublimate (1:6,000–8,000) may be used. After syringing the auditory meatus is dried by the aid of the mirror with sterilized cotton and closed with sterilized gauze. Irrigations are made according to the amount of discharge, viz., every first, second, or third hour, according to the saturation of the gauze.

Ten to twelve years ago astringents were frequently used in acute suppurations, viz., zinc sulphate, zinc sulpho-carbolate, alum, tannic acid, etc. Such remedies are to be absolutely avoided. For the introduction of boric acid into otological therapeutics, Bezold deserves credit. Powder treatment cannot be dispensed with in many cases. Dangers, it is true, may arise from its careless application, which caused the Schwartze school to object to it. For, if the powder is blown upon a small perforation, the pus may be readily retained. Packing the meatus completely with boric-acid powder, as it was formerly practised, is irrational; owing to the insolubility of the powder in the discharges it is rendered lumpy and stony, and thereby injurious. The powder treatment as a rule should never be left to the patient.

Boric acid, with or without iodoform and aristol, after cleansing the meatus, applied by means of Urbantschitsch's powder-blower in a fine layer, has a good effect. For the first days of suppuration during the extremely acute stage this treatment is not suitable.

In chronic suppurations, irrigations and insufflations cannot be dispensed with. Irrigations must be warm, since the middle ear cannot bear cold temperatures. Bathing, particularly surf bathing, should be strictly prohibited.

Irrigations several times a day, strictly carried out, frequently cure even the most persistent suppuration. Irrigations through the Eustachian tube by means of the nasal catheter as devised by Politzer are rarely used in this country. I am almost convinced of their injurious influence, since the entrance into the mastoid cavity lies in a continuous line with the Eustachian tube, and injected solutions directly enter it, together with the bacteria of the naso-pharynx.

In Gruber's method, which is of the same character, both ears are simultaneously irrigated by syringing through the nose while the cheeks are blown out. Irrigation with Hartmann's tympanic cannula directly introduced into the tympanum and connected by a soft-rubber tube with the syringe is much more rational.

Alderton, who recently proposed to bend the end of this cannula at such an angle as to introduce it through the perforation directly into the mastoid antrum, goes decidedly too far. Gruening's method of removing secretions from the middle ear by hermetically closing the external meatus with an attachment connected by means of a rubber tube with the syringe, and then withdrawing the piston of the syringe, is of great advantage in cases with tenacious discharge.

In the treatment with drugs, alcohol, as recommended by Politzer, takes the lead. This treatment was also objected to by Schwartze and his followers. However, in selected cases, particularly those associated with swelling of the mucous membrane, it is of great advantage if used with care. It is proper to begin with instillation of a saturated solution of boric acid in twenty-five per cent. alcohol, and gradually increase,

if well borne, to sixty-six and two-thirds per cent., and even absolute alcohol.

Peroxide of hydrogen is frequently used in this country; when instilled into suppurating ears, it forms bubbles by generating oxygen. The gas creeps into the tympanic cavity and its deepest recesses, whereby they are thoroughly cleaned. The disadvantages are, that deposits of detritus remain, which have to be removed by irrigation; furthermore, that the original solution, which ought to contain sixteen volumes by percentage, cannot be borne, and, therefore, has to be diluted and warmed; finally, that when the bottle is repeatedly opened some of the gas escapes and the expected effect is not realized.

If despite all these remedies the suppuration persists, pathological conditions not reached thereby are at fault and operative procedures are in order. Small granulations are to be cauterized with chromic acid in substance, fused in pearls to a caustic holder, the excess being neutralized by saturated solutions of chloride of sodium. Large granulations and polypi are removed, after due cocainization, with the cold snare, Urbantschitsch's forceps, and, above all, with the sharp spoon and ring knife, which I prefer.

The removal of adenoid vegetations from the nasopharynx, of enlarged tonsils, and of nasal obstructions and swellings, in conjunction with aural treatment is of the greatest importance.

If with these interferences the suppuration does not cease, it should be ascertained, if possible before the beginning of the treatment, to what extent the middle ear is affected. The suppuration often attacks the ossicles, of which the incus more frequently presents isolated caries than the malleus. Mallear caries is diagnosed by the presence of a tiny fistulous opening above the short process. Isolated incudal caries is recognized by fistulæ behind the short process, granulations in the postero-superior portion of the drum-membrane, and by perforations reaching upward above Shrapnell's membrane and forward to the handle of the malleus. If isolated caries of ossicles is ascertained, their removal is indicated.

It is doubtful whether, when the affection is limited to the middle ear, the ossicles should also be removed. For ossiculectomy, at any rate, is the "less interfering and more sparing procedure and offers under all circumstances the advantage of decreasing thereby the dangers of retention of pus in the attic, though it does not always lead to recovery." Ossiculectomy is by no means an easy operation, since the field of operation is obscured by continuous hemorrhage, and the upper wall of the meatus occludes the attic inferiorly in such a way as to permit the removal of the ossicles by tactile sensation alone. Injuries of the facial, jugular, and carotid are not out of the range of possibility. My own ossiculectomies have all been successful. I never promise improvement of the hearing, since I have observed even impairment of hearing after the operation, owing to ankylosis of the stapes, and advise the operation only for suppression of suppuration. If this aim is not reached by ossiculectomy, or there is good ground for the belief that deeper processes, such as cholesteatoma or mastoid caries, are present, the radical operation is indicated.

During a score of years and longer the aurists had been desirous of removing persistent suppurations by operations from without. The mastoid process was opened, as in operations for acute mastoid empyema, and irrigations through its antrum were believed to accomplish this end, as it were, through a *vis a tergo*. These attempts, however, were not successful. Küster, a general surgeon, in 1889, published a whole series of operations on the mastoid process, in which the bone was extensively and deeply opened by removal of the outer plate up to the upper wall of the external meatus, and the removal of the posterior wall of the meatus was also recommended. He condemned the former methods as non-surgical. In cavities with bony walls empyemata should be opened early, the incision to be at the lowest place, and irrigations limited to the smallest extent. Küster's operation, it is true, is surgical, but not otological, since injuries of the facial nerve and of the semicircular canals are much more frequent in his operation, and the function of the ear is entirely left out of the consideration. His operation at any rate marks a decided progress and incited at once to bold procedures. Zaufal was the first aurist to follow in his footsteps. He operated more cautiously than Küster, by trying to preserve as much as possible. He formed a triangular flap extending from the apex of the mastoid process to the anterior margin of the auricle, detached the periosteum and the posterior wall of the meatus, removed as much bone as possible with Luer's forceps, and attached the flap by stitches. Stacke goes still further, by detaching the auricle, as in former operations for the removal of foreign bodies from the middle ear, partially shelling out the membranous external meatus, chiselling off the upper wall of the meatus, opening, if necessary, the mastoid antrum and process, removing the bone between the two cavities, and transplanting the membranous lining of the meatus into this opening. The only essential modification of Stacke's operation, as suggested by other surgeons, consists in beginning every radical operation from the mastoid antrum. Other not very essential modifications consist in the variability of flap formation for transplantation. All cases in which I operated according to this method are cured. Among these cases are two of tuberculosis of the mastoid process, one case in which the dura mater was exposed, one case with facial paralysis, which had entirely disappeared after ten weeks. The suppuration had lasted in one case thirty-five, in another twenty-five, and in two others fifteen years.

I use the sharp spoon, after the opening, as little as possible, owing to the frequency of injuries caused thereby. Furthermore, I remove the posterior wall of the meatus but superficially, in order to avoid injuries to the facial nerve, and chisel as close as possible to the upper wall, whereby a sufficiently large communication between the mastoid antrum and the tympanic cavity is established.

With the aid of all these methods, we now succeed under favorable conditions, if the process remains local and the general conditions are satisfactory, in curing every aural suppuration and thus eliminate a danger from the organism which may destroy it at any time.

Accordingly, you will agree that the assertion made in the beginning of this discourse holds true, namely, that otology has attained a well-esteemed position in medicine, principally owing to the successful treatment of suppurations of the middle ear.

123 East Sixty-Second Street.

Thrush in the Bladder.—Pneumaturia was discovered in an anæmic woman sixty-four years old, by Dr. V. Frisch (*Wiener klinische Wochenschrift*, No. 39, 1898), and the urine, which contained sugar and albumin, showed a number of white granular bodies, some of which floated to the surface with the gas bubbles. By means of a cystoscope the bladder wall was seen to have attached to it a number of similar bodies. The microscope showed mycelial threads, which on cultivation proved to be the same as those found in thrush. A cure was effected in a month's time by washing with silver solution (1 : 1,000). This would seem to be the first recorded instance of thrush fungus being located within the bladder.

A PRACTICAL VIEW OF ANTITOXIN AND DIPHTHERIA IN PRIVATE PRACTICE.

By ADOLPH RUPP, M.D.,

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ANTITOXIN is the name given to a laboratory product, the essential nature of which is pathological. Its measurements of therapeutical values or units are of an arbitrary character, uncertain, and unequal. These units of therapeutical valuation are not exact, but approximate biological appreciations, translated from zoological probabilities into anthropomorphic possibilities. And the unit of value is as variable as the element of individual resistance at both ends of the animal scale where the tests apply. There can be no absolute or fixed standard of measurement. It is a question of more or less. Its chemical composition is unknown, and its physiological action is yet to be determined. We know that it is a poison from its effects on the animal economy. Many experimenters and clinicians claim that it inhibits, counteracts, or neutralizes the action of the poison of diphtheria which develops in the animal and human body. Antitoxin is a word that scientists may well claim as their own. It had its birth in the laboratory. Diphtheria, however, is a word that is not the sole property of scientists. Clinicians have used the word diphtheria in an empirical sort of way for years and years, to designate a condition characterized by more or less constitutional disturbance and an inflamed sore throat, accompanied at the same time by depositions of pseudo-membrane. "No membrane, no diphtheria," was the keynote.

In 1861 Alonzo Clark wrote: "There is some vagueness in the use of the term diphtheria. . . . While diphtheria prevails, it is usual to have at the same time a sore throat prevailing epidemically, which has but little tendency to the production of membrane. And as these two forms of disease are apt to go together, physicians have been somewhat in the habit of grouping them under one head and considering them both diphtheria." The habit, it should not be forgotten, was not general; it was only somewhat so, not generally so. Not only Clark, but many physicians besides, thought it necessary to separate these synchronous affections, because "the form of sore throat which is not attended by the production of membrane is a mild disease, and is almost never fatal."[1] "The very term diphtheria," he continued, "implies the existence of a false membrane; and we must limit the signification of the word to such inflammations as terminate in or have in their course this membrane as a sign." Clark goes on to say, "To make this membrane the basis of classification may not be scientific, but it is practical. And," he said correctly, "science requires us to make distinctions where there are differences. And here [between the benign sore throat and the diphtheria, as defined] we have the broad difference that one disease is ephemeral, with a tendency to recovery; and the other is often [not uniformly so] terribly fatal, and is liable to a long train of symptoms of a serious if not of an alarming character."

Clinically and historically we have a true diphtheria varying much in severity as individual cases come and go; and clinically and historically a false or pseudo-diphtheria, which is a mild disease and very rarely fatal. These terms in their historical and clinical senses are unlike the same terms used by scientific physicians and bacteriologists of our day—the terms in their historical meanings stand for different things, and are conceived of in different ways. And yet in our day the terms and their meanings are very often confounded, and discussions consequently often result in confusion, and fallacies and misunderstandings are disseminated.

[1] American Medical Times, March 23, 1861, p. 187.

Scientists have given us the facts of the Klebs-Loeffler bacilli and other cocci to think of, and these low forms of life have dislocated our ideas of diphtheria, true and false. But scientists are not a unit as to the significance of the Klebs-Loeffler bacilli for diphtheria and its relationships to the other bacteria which are granted an active participation in the local processes of this clinical disease. Concerning their diagnosis of this disease as defined by themselves, scientists do not base their diagnosis on the number of Klebs-Loeffler bacilli that may be present, absolutely or comparatively, over against the number of other cocci and bacilli that may be present in clinically true or false diphtheria. The mere presence of the Klebs-Loeffler bacilli demonstrably qualifies their diagnosis. Incongruities of quantitative facts are readily explained away by such terms as mixed infections. When an apparently bad case of clinical diphtheria is met with and no Klebs-Loeffler bacilli are detected, we are assured that the case is false diphtheria. And if a case of clinical diphtheria develops a membrane that persists longer than one or two or three weeks, even though antitoxin has been given *lege artis*, and even though the Klebs-Loeffler bacilli are detected, the scientific diagnostician tells us that the case is one of mixed infection, and that the persistence of the membrane is due to various cocci and other bacteria than the Klebs-Loeffler form. To the scientist neither of these forms is true diphtheria.

We are assured by the scientific physician that "false diphtheria is a very dangerous disease, though its mortality is not as high as that due to the Klebs-Loeffler bacillus."[1] This is given us as a bare assertion. We must accept it on faith and as a scientific definition. Notice the difference and the distinction made by practical physicians, as voiced by Clark about thirty-five years ago. It is a new revelation! Bacteria are ubiquitous. If we are to accept as fact the reports of all bacteriologists collectively that we can find time to read, we shall be obliged to conclude that no single kind of bacilli or cocci is found alone doing mischief. And if we accept the teachings of any one particular bacteriologist as telling the truth, the whole truth, and nothing but the truth, we shall find it easy enough to be logical, but we shall find ourselves differing much from the conclusions arrived at by others who pin their faith to the finds and teachings of some other one particular bacteriologist. For instance, Baumgarten claimed that streptococci are the true primary cause of diphtheria, they being always present in cases of clinical true diphtheria; and that the Klebs-Loeffler bacilli are only of secondary or accidental importance in this disease, because they are not invariably present. Baumgarten is no novice. He strengthened his contention by saying that streptococci are not found in healthy mouths and throats, but that Klebs-Loeffler bacilli are. And now comes Dr. Paul Hilbert, who tells us that although everybody must admit that Baumgarten is one of Germany's most eminent pathologists, yet he is wrong in what he has seen and in his contentions. Hilbert was successful in finding, in all cases examined by him, the specially reputed pathogenetic long streptococci in the crypts of tonsils of healthy people.[2] Streptococci are very convenient things to deal with. Nothing so obliging! They explain rheumatism for some scientists. In the estimation of others they generate acute suppurative tonsillitis, and skip away quickly for the benefit of the patient when staphylococci make up to push them out of sight.

[1] "The Modern Treatment of Diphtheria, etc.," by Aug. Caillé. Reprint from the Post-Graduate, October, 1897, p. 3.

[2] "Die Rolle der Streptocokken bei der Diphtherie." Dr. Paul Hilbert, Verhandlungen des Congresses für innere Medicin, Sixteenth Congress, 1898.

When suppuration of any kind or anywhere takes place, then they are there, active, obstreperous busybodies, to help the scientific logician. It is not at once easy to see how Caillé or any clinician can be sure that streptococcic diphtheria (or, rather, his and others' non-Klebs-Loeffler bacillary or false diphtheria) is less frequent in occurrence than Klebs-Loeffler diphtheria. Hilbert affirms that streptococci are usually around, and, if not immediately so, they are always close at the heels of Klebs-Loeffler bacilli in cases of scientific diphtheria anyhow.

Some things in this connection that a New York physician can be sure of, thanks to health-board bacteriologists, are:

1. Some, not by any means many, of his cases that run a course of true clinical diphtheria from start to finish are false diphtheria in the scientific sense, despite the presence of the pseudo-membrane.

2. Some of his cases, only occurring now and then at longer or shorter intervals, develop or show up the presence of the Klebs-Loeffler bacillus when all active local processes have become clinically a thing of the past.

3. In the great majority of his cases of clinically true diphtheria the Klebs-Loeffler bacillus is found. The health board gives only qualitative information. Other information than the Klebs-Loeffler presence is not furnished the practitioner, except when the Klebs-Loeffler bacillus is not found. Now if Hilbert is right in his contention, and Baumgarten in his, all these cases of true clinical diphtheria are cases of mixed infection—streptococcic, etc., and Klebs-Loeffler bacilli. Baumgarten's testimony in a large measure neutralizes Hilbert's. But it may be interesting to state here that one of the lessons that Hilbert tries to enforce is this: Streptococci alone are not so bad, but when Klebs-Loeffler bacilli fall in with them, why then a bitter fight ensues, which can be checked by the early administration of antitoxin. After Klebs-Loeffler bacilli and streptococci have been damning and damaging the patient for a longer or shorter while, they create such havoc that antitoxin given late can do no good. Antitoxin early administered paralyzes the Klebs-Loeffler bacillus, and then streptococci give up the fight. They don't seem to be enamoured of a fight single-handed, as it were. Hilbert thus introduces a new element into the antitoxin controversy without clearing up the befogged questions.

The reader will please excuse the Hilbertian digression. New York physicians know from experience that few clinically true diphtherias are not also true scientific diphtherias. And according to my experience and practice, and according to the practice of many of the New York physicians known to me, very, very few cases of clinically false diphtherias are reported to the health board. The presence of a pseudo-membrane in the throat that is sore determines almost invariably the report of diphtheria to the health board. And this is so because the practitioner thinks clinically, and is obliged to do so, no matter how well informed he may be concerning science and statistics this way and that way.

From a clinical standpoint I have collected notes from over one hundred practitioners in and outside of this city on antitoxin and its value as a remedy in the treatment of diphtheria. My correspondents and acquaintances, like those who have written and parleyed on this subject, can be divided into three classes:

1. Those who positively affirm superlative results.

2. Those who are doubtful and undecided, but who use antitoxin.

3. Those who are sceptical and condemn its use theoretically, if not always practically.

1. Six physicians in a hundred with whom I have compared notes, one of them a homœopath, have not used antitoxin. These men may be prejudiced, but they are not cowards—they have the courage of their opinions. And in most of the practical concerns of life they prove to be as wise and able as the enthusiasts or doubters. All of them have seen antitoxin used, and observed the cases afterward. One of them affirms that in a case that he had treated the Klebs-Loeffler bacillus was not discovered until after antitoxin had been injected, and then the pseudo-membrane that had been undergoing dissolution became actively formative and spread. My homœopathic friend is sure that in a case of his which he refused to treat with antitoxin, but in which another physician administered the remedy on the third day of the disease—this patient died a few days afterward of "suppression of urine." And prior to the administration of antitoxin, he claims there were no evidences that the child would die of such a complication. Another of these sceptics says that a patient, in which he had no power to prevent antitoxin from being used, died soon after of endocarditis.

2. My friends who doubt and are not sure one way or the other are as numerous, almost, as the enthusiasts. Statistical tables influence them only very little. One of these physicians, who had used this remedy faithfully in every case that came into his hands, summarized his view thus: "Either the whole theory is false, or else the best antitoxin we can get is worthless." This man is no fool. Neither is he in a hurry to reach conclusions. His perceptions are quick, and he is a good diagnostician. Another of this class says he uses antitoxin when he may, and that he had seen patients die in which antitoxin was used, as though so much water had been injected. He, however, believes that antitoxin acts on the heart in an unpleasant way, accelerates the pulse, and increases the temperature for a time. In some cases he thought antitoxin acted decidedly like a poison. He had one case of "fatal syncope and convulsions" follow a few hours after antitoxin had been injected. He gives antitoxin because public opinion obliges him to be up-to-date and scientific. On the whole, none of these men can see that antitoxin does any good in those cases where they would most wish to get beneficial effects. They have seen croup develop under its use. So far as their own experience goes, they are not able to see that other complications are rarer than before they used antitoxin.

3. If the enthusiasm of a good many honest men could settle the high reputation of any therapeutical remedy, then there would long since have ceased to be any question concerning the superlative value of antitoxin for diphtheria. My enthusiastic friends are enthusiasts! One of these friends wrote to me: "The evidence is so overwhelmingly in favor of antitoxin, and the advantages of the treatment are so well known and so frankly acknowledged, that any one who should attempt to write it down would stultify himself, unless he could produce evidence not yet known to literature and subversive of what we know, which is rather impossible." Such talk is typical. One hears the like rather often in New York. This distant friend had a syncopal case—made so, he admits, by a dose of antitoxin—which he came near losing. He also had an adult case of diphtheria in which the membrane persisted in the throat for weeks, although repeated doses of antitoxin had been given. Klebs-Loeffler bacilli were present in this case, but he says they were few and that the persistence of the membrane must have been due to streptococci. Streptococci act as an apology for the inefficiency of antitoxin under other circumstances and varying instances of mixed infection.

Another friend and enthusiast, practising in a Western country town, had used antitoxin for over one year when it first came out. Thinking that his results were no better than before, he gave up using it. Then his

losses of croup cases disheartened him, and he again used antitoxin. He now became more hopeful. He thought he was preventing croup, and that cases of croup that came his way were being saved, as was not the case before. But by the end of the year he was not satisfied with the totality of successes recorded, and he this time concluded that the antitoxin was not so good as it ought to have been. He wrote to the makers of the antitoxin that he had been using, giving them his views and experience. The firm replied, suggesting that his cases may have become worse, etc., and that their antitoxin was as good as could be obtained. He now tried another make. Again he was jubilant over his results. But strange are the workings of facts and fate! This last make, that was filling his heart with joy and thanksgiving, was doing worse in a distant city hospital than the antitoxin he had discarded. To this friend antitoxin is the greatest discovery of the century. He has not found it necessary to tracheotomize or intubate any of his croup cases since he has changed the make of antitoxin—that is, when used early enough, which in his experience is not the third, but the fifth day of the disease (diphtheria). It is not an uncommon thing for this class of men to excuse their lack of success with the plea that this or that brand or make of antitoxin was or is below the standard. One of my enthusiastic friends told me that in his experience any make or brand of antitoxin becomes less and less efficient after the fourth week of its making. It is not like good wine!

Another enthusiastic acquaintance, who has a large general practice and who holds both a homœopathic and a regular diploma, claims to have had cases of all sorts of diphtheria which he treated with antitoxin, and in upward of eighty of them with success; there were no deaths. And these successes he claims resulted from doses varying from six hundred to one thousand units. Sometimes he had given larger doses. But he only rarely found it necessary to repeat the dose. Soon after this communication he had several deaths in rapid succession. On these I have had no comment from him.

Another of my enthusiastic friends, commenting to me on his fatal cases that had been treated with antitoxin, gave me to understand that they died, not of diphtheria, but of incidental complications—pneumonia, Schluck-pneumonia, and nervous troubles; never of croup *per se*.

So much from my friends: and now for my own personal experiences.

I have treated twenty-four of my diphtheria cases with antitoxin, and, I have the good fortune to be able and say, without a death or any very serious casualty resulting. Of course, other remedies and medicines formed part of the general treatment of these cases. The ages of these patients ranged between the second to the eighth year of life. I have given as large a single dose as twenty-five hundred units, and as small a one as six hundred units. No sign of any particularly marked character made itself evident to signify the difference of dosage in the different cases. Opinion, among my antitoxin acquaintances, differs as to the size or quantity of serum dosage necessary to obtain desirable and striking results. Some gave six hundred units and were satisfied. Others have been advancing the dose quantities, thus keeping abreast of advancing scientific recommendations. When smaller doses were given, the results were as favorable as they are now, in so far as can be gathered from their reports. These men have followed the recommendations of authorities and literature.

In most of my cases one injection of one thousand units was given on two successive days. In several, two injections were given on the same day. In a half-dozen cases one injection was given on three successive days; and in several others one injection on four successive days. In none of my cases were the immediate or after results such as to impress on my senses any of the reported magnificent effects vaunted by Baginsky and other enthusiasts.

Of these twenty-four cases, one, a boy, four years old, had to be tracheotomized; another, a girl of five, was intubated; and another, a girl of six, was also intubated. The tracheotomized boy was croupous when first seen, and was reported to have been sick only a few days. Fifteen hundred units of the health-board antitoxin was immediately injected, and six hours later another one thousand units. There was membrane in the nose and pharynx, not abundant; and the boy had a temperature of only 102° F., and was not very bad otherwise. But in spite of the antitoxin the croup progressed, and, intubation failing to give relief, he was tracheotomized, the membrane having extended into the trachea; the canula was removed eight days after operation. The membrane in the pharynx disappeared slowly and was gone five days after the operation had been done. This boy also received about eight hundred units the day after the operation. The relief obtained by tracheotomizing was marked and evident; but not so were the antitoxin effects.

The six-year-old girl when first seen was but slightly croupal, and was reported to have been sick but a day. I thought her illness of longer duration. I offered to administer antitoxin. The parents would not consent. Next morning she seemed better. The deposits on the tonsils had become less, but a thin streak of membrane was seen stretching downward behind the posterior pillar of the fauces on the left side. Again—the fifth day of illness according to my view—the antitoxin was spoken of. The parents now consented to have this new remedy given. Accordingly twelve hundred units was administered in the afternoon. No change had taken place, except that the membrane on the tonsils seemed less, but that behind the faucial pillar had enlarged. Next morning—the sixth of the disease—the child was much more croupous, somewhat cyanotic, but not markedly so; the temperature had gone up from 100° to 102° F., and I had to speak of the possibilities of an operation—intubation. The father of the child then turned on me and said: "The child was much better before antitoxin was given." We parleyed much, and operation was finally consented to. Operation became necessary on the evening of this, the sixth day of the disease. At my 10 P.M. call I noticed a hissing sound now and then when the child cried. I inferred that this sound was caused by air pressing up along the outside of the tube, and I put the child's watchers on guard. I told them the tube might be coughed up. At the time the tube seemed effective and firmly in place. At 1 A.M. of the seventh day of illness I was called, and found that the tube had been coughed up. When I saw the child she was sleeping calmly. Her respiration was hissing, occasionally, but not obstructed; nor was there marked cyanosis. I let her alone, but watched her for several hours, and then went home. This girl developed an irregular and intermittent pulse. She finally recovered, but with a slight paralysis of the palate, which lasted several weeks.

The other five-year-old girl had one thousand units injected on the afternoon of the first day's attendance. She had bronchitis. It was reported that no membrane was present in the morning. In the evening when I saw her her temperature was 103° F., and there were thin deposits on the tonsils. I gave her another injection—a little more than twelve hundred units—and then she was intubated next morning. At a later visit she was given one thousand units more of antitoxin. The membrane disappeared for the most part

on the third day after intubation. This child could gargle. But here and there little flecks of membrane persisted for two days longer. Thus in this case membrane persisted in the throat for five days after it was first noticed. The tube was removed on the seventh day after emplacement. This child had an intercurrent catarrhal pneumonia. Here, too, the heart condition that developed after the injection of antitoxin necessitated strychnine injections and alcoholic stimulation.

In none of these cases did antitoxin seem to have any inhibitory influence on the progressive croupal process; and in the three cases the membranous deposition was rapid, and in none of them did the antitoxin have any effect apparently in checking it or rendering its disappearance more rapid than ordinarily when antitoxin is not given. Indeed, in the one case the father of the child thought her condition became aggravated after antitoxin was given.

In none of the twenty-four cases could any beneficial influence on the membrane be observed, in such a way as to be beyond doubt. In all of them the temperature was sent up a degree or two; the pulse was accelerated, and in some cases became irregular. In some cases the patient became exhilarated or irritable, in most cases depressed, and in others there followed no general phenomena. Several cases developed a slight diarrhœa after the injections had been given. A few complained of vague joint pains. Only one boy, three years of age, developed red, painful, and swollen knee- and elbow-joints, which lasted less than a week, and which followed the injection of the antitoxin. In this case, simultaneously with the joint affection, a papular eruption appeared over the body generally, but particularly abundant on the legs, where it finally became purulent and crusty. This eruption was preceded and accompanied by an annoying pruritus. This boy finally recovered, and without the development of any paretic condition anywhere. There was no marked albuminuria in any of the cases, either before or after the injection of antitoxin. In some cases it was thought to have become increased after the injection, but of this I am not sure. In many of the cases the amount of urine became increased after the injection. None of these patients was rendered sickly and ailing for any great length of time after antitoxin had been injected.

Although none of these patients died, no conclusion in my opinion bespeaking the beneficent powers of antitoxin is justifiable. Patients treated without antitoxin did just as well and were not afflicted with the minor inconveniences that may be attributed to antitoxin.

Conclusions.—1. Whatever thousands of antitoxin-ated cases of diphtheria may seem to prove to hundreds of other physicians, my twenty-four cases teach me clearly enough that the remedy has no well-marked favorable effect on the general or clinical course of the disease—it neither shortens nor lessens its severity.

2. In the croupous cases it exerted no beneficial or inhibitory influence on the progress of the croup. The operations in these cases, and not the antitoxin, saved the children.

3. In none of my twenty-four cases, nor in those seen in the practice of some of my acquaintances, did the antitoxin seem (beyond a reasonable doubt) to cause the pseudo-membranes in the throat to disappear sooner than would have been the case had no antitoxin been given.

4. In all of my cases the initial dose of antitoxin was given not earlier than the third day, and not later than the fourth day. None of the cases was markedly "septic" or "mixed," nor were they severe cases in any sense.

Consequently, in view of the above conclusions, which are based on practice and not on speculation, and what has just been said of the time of injection and the character of the cases—consequently, I say, antitoxin is not a specific in the treatment of diphtheria.

One more word in conclusion. Drs. Biggs and Guerard, in their very lengthy summary of "Antitoxin Serum in the Treatment of Diphtheria," [1] quoted with apparent unction and much applause the following rhymes:

> "The best critics in the world are they
> Who along with that which they gainsay
> Suggest another and a better way."

The sense of the rhymes, and the unctuous applause the gentlemen quoted allow them, are based on a misapprehension of what practical criticism should be. All through life we are critics, and not from choice. Criticism is judgment forced into action. As practitioners we are obliged to be critics for the benefit of our clients. And as practitioners we cease to be academic disputants, and always are judges and executors, and often expositors as well! It was not a poet in the sense of a rhymester, nor a great philosopher in the sense of a drawing-room hero, who said: "Be sure you are right, then go ahead." In this antitoxin business we practitioners have not been granted the privilege of thinking that we are right. We were treated as though we could not think and need not think. We had to accept what scientists and the public clamor they set in motion forced into our hands. We were more or less regimented: forced to do, and not to question why! And that, too, by men who it now seems really did not know, but only imagined or thought they knew.

In a subsequent essay I shall try to prove by means of statistics, constructed by others, all that my own experience has taught me and all that the above conclusions imply.

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Clinical Department.

WAS IT A CASE OF PHLEGMONOUS GASTRITIS?

By VIDA Z. BAERECKE, M.D.,

DE LAND, FLA.

The patient was Mary L——, aged fifteen and one-half years, a bright pupil of the public high school, born in Wisconsin of Swedish parentage but for the last five years living in Florida. She came under my care on June 24, 1898, for chronic pharyngitis. She complained of not having felt well for some time. On examination I found that her appetite and digestion were good; the bowels were somewhat irregular; she slept well; had no headache or dizziness; menstruation, which began a year ago, had been regular for the last three times, and without pain. The girl appeared stout for her age and well proportioned; the expression of the face was fairly healthy; the heart was normal; the left lung was sound; over the middle of the right lung was a dull and tender spot, where the patient felt soreness after running or after taking cold. She had no cough, no expectoration, no night sweats, no elevation of temperature, no family history of tuberculosis; the urine was normal. The feeling of malaise might be accounted for by the continuous hot weather at this time of the year.

On June 29th the girl reported that the constipation had been readily corrected. She still felt tired and weak, but the use of Blaud's pills, three grains, combined with arsenious acid, one-sixtieth of a grain, three times a day, made her feel somewhat better.

On July 13th, at 3 A.M., she had a severe attack of

[1] The Medical News, December, 1896.

pain in the stomach and abdomen, not localized and not extending to the back; the tongue was slightly coated. The patient vomited, an hour before I saw her, the remnants of the supper taken a few hours before. I ordered bismuth, creosote, and morphine, and put the patient on a milk diet. This caused some improvement.

On July 14th the patient vomited some curdled milk; she had pain in the epigastrium, though not severe; "a kind of numb feeling in the hands." I made a careful examination of the abdomen. No tumor was to be felt anywhere; there were no painful or sensitive spots, no tympanites, no eruption; in fact, no alarming symptom of any kind.

On July 16th, at 9 A.M., the temperature was 101° F.; pulse, 100 and less strong than usual, which was attributed to the exclusive milk diet; there was pain in the lower abdomen; micturition was somewhat painful; the urine was said to be slightly darker colored than before; there was no irritability of the bladder.

On July 18th there was much belching, the gas producing a sour taste in the mouth; the tongue was clean and of normal color; there was neither pain nor tenderness nor distention of the abdomen; headache, nausea, and diarrhœa were also absent. At breakfast the patient took the white of an egg in milk, which was promptly vomited, and she then returned to milk alone, which agreed well with her.

In the evening I was called and found the patient much changed. Temperature, 103.2° F.; pulse, 120, weak. The face looked pinched; there were dark rings around the eyes; profuse sweating; abdomen slightly tender all over, without any especially tender spots, and slightly tympanitic. The patient complained of difficult breathing; the tongue was dry and there was great thirst. Her mind was clear. There was no preference as to position; generally she lay flat on her back, sometimes with the thighs flexed, but often not. She was restless. I gave her a hypodermic injection of morphine to relieve the pain in the epigastrium, and put turpentine stupes on the abdomen. After some time she expressed herself as being comfortable, and fell asleep.

I took the vomit home for analysis. It was of liquid consistence, with a thin layer of solid matter floating upon it; the liquid part was light reddish, the solid part was dark reddish-brown. It was moderately acid in reaction, and without smell; filtrate clear. No hydrochloric acid (Günzburg test); very small amount of lactic acid (Uffelmann's test after treatment with ether); amount of mucus not excessive; no biliary matter. The microscope showed many oval-round cells of the size of a leucocyte, few larger epithelial cells, some blood corpuscles, a fair amount of fat drops of all sizes, probably from the milk, and for the rest dark-colored granular matter (necrotic ?). There were no sarcinæ, no yeast cells; no pus, no streptococci; only a few isolated cocci; and in seven cover-glass preparations only two long and slender bacilli, slightly motile in the fresh preparations (not the Oppler-Boas form).

I considered the case as one of very severe acute gastritis; the absence of pus in the vomit seemed to indicate, however, that there was no immediate danger, although the temperature was approaching 104° F.

Between twelve and one o'clock the following morning the patient vomited "some fluid of the same nature as before;" afterward she became slightly delirious, and ten minutes before I arrived she died. I found the fingers and toes cold; eyes open, pupils dilated; temperature under the arm, 107.4° F. Permission to make an autopsy was refused.

How did I arrive at a diagnosis? Vomiting was one of the principal symptoms throughout the disease. The absence of headache excluded a cerebral and the temperament of the patient a hysterical origin of the vomiting; the cause of vomiting, therefore, was sought in some local irritation of the alimentary canal. The history and absence of characteristic symptoms excluded poisoning, cholera morbus, typhoid fever, appendicitis, and intestinal obstruction. Up to a few hours before death peritonitis did not manifest itself if it existed. The principal seat of pain, viz., the upper abdomen, the nature and frequency of the bowel evacuations, the belching and the relief by vomiting, the composition of the vomit, and the presence of a moderate fever pointed to acute febrile gastritis; and this I thought was the disease, till the sudden fatal end proved that there was something else. What else could there be? The apparent suddenness of the attack, the seat of pain, the nausea and vomiting, the moderate fever, the final abdominal tympanites, the short duration of only six days, might suggest acute pancreatitis; but this disease is accompanied by symptoms of collapse and by tendency to constipation, often by hiccough, while my patient did not show collapse at any time, was never troubled with hiccough, and instead of constipation diarrhœa was present. And although the character of the vomit was in some respects in favor of the diagnosis of cancer, the short duration and other symptoms were opposed to it. So I came back to acute gastritis, and from this point went again over the whole ground.

Before July 13th there existed for some time an indistinct feeling of not being well, accompanied by irregularity of the bowels; at last there was a decided feeling of weakness, masked for a short time by the tonics; no fever. In the light of later events I am inclined to attribute this condition to the presence of an ulcer in the stomach, not at all an uncommon condition in the female sex and in persons of sedentary habits. Even the lack of prominent symptoms is in this disease well known to occur; the absence of hydrochloric acid in the vomit is no objection to the existence of a stomachic ulcer, as was formerly thought. The presence of the dull spot in the right lung and of chronic pharyngitis go far to prove that the patient's constitution was less good than it appeared to be, and would provide an etiological factor in the origin of the ulcer. At two o'clock in the morning of that day the presence of the ulcer made itself for the first time manifest by severe pain and vomiting; the vomit contained remnants of the supper taken some hours ago, and this fact locates the ulcer at the pylorus, one of the most favored spots. The attack was, however, different from those that generally accompany pyloric ulcer; fever at once followed it, and the attack itself was not renewed; vomiting no longer occurred some hours after the taking of food, but at once. The ulcer had broken—not into the stomach, and therefore no pus appeared in the vomit; nor into the peritoneum—but at the boundary of the submucosa and muscularis probably, where the difference of resistance in the tissues often modifies the shape of the ulcer (Ziegler's "Pathologische Anatomie," 7 Aufl., ii., S. 516). A diffuse process of suppuration was set up in the submucous coat, causing moderate infiltration of small round cells in the mucosa, and on the other side a rapid extension into the muscularis. The outward signs were those of acute gastritis, accompanied by fever and perhaps the premature return of menstruation. For some reason the mucosa withstood the strain a second time; hence no pus showed itself, and only a small amount of blood, caused by hyperæmia, mixed at last with the vomit. The muscularis, the seat of severe suppuration, gradually affected the serosa, and on the evening of July 18th the pus entered the peritoneal cavity over a relatively large area. A rapidly spreading peritonitis with extremely high temperature closed the scene.

Considering the ulcer, the formation of which was hardly noticed and not recognized, as the inciting cause, I diagnosed the real disease, lasting for exactly six days, as phlegmonous gastritis, although, to my regret, direct proof by means of section was not obtainable.

RENAL CALCULUS; NEPHROLITHOTOMY; RECOVERY.

By WILLIAM D. HAMILTON, M.D.,

COLUMBUS, OHIO.

The case to be described shows that a small kidney stone embedded in healthy renal tissue may require removal. Pain and hemorrhage were the prominent and urgent symptoms. Recurrent renal colic, hemorrhage, and the passage of tubulous matter, small calculi, or fragments of stone with the urine, form a symptom complex which is characteristic of this condition. The presence of pus and albumin in the urine usually attends it. It is a disease, however, in which some of these salient features may be absent, as is shown by the appended history.

The patient, Mrs. J——, aged thirty, a resident of Newark, Ohio, was seen by the writer in consultation with Drs. C. H. Stimson and W. H. Knauss, on June 7, 1898. She had enjoyed good health until six years ago, with the exception of periodical headaches, to which she had been subject. At that time she began to have dull pain in the right loin. The duration, intensity, and frequency of these attacks increased for three years, when she sought medical advice. The pains recurred at irregular intervals, sometimes with the menses. For the last two years the suffering had been at times very severe. One paroxysm, three hours in duration, had occurred a week prior to the operation. The pain was most intense. It originated in the right loin and followed the course of the ureter of that side. Profuse hæmaturia followed most of these seizures.

Examination of the urine showed the presence of albumin, some pus cells, high specific gravity, an alkaline reaction, and the deposit of large quantities of urates. She was at the time taking alkaline medication. By means of the Harris instrument the urine from each kidney was separately examined. A specimen from the left one was normal, but that excreted from the right kidney was cloudy and contained albumin, pus, and blood. On palpation of the right loin, what seemed to be the kidney, somewhat enlarged and tender, could be readily felt, although the patient was rather stout. Examination of the left side yielded negative results. A diagnosis of stone in the kidney was made by the attending physicians, and operation was advised by them.

The patient, having been etherized, was put upon the left side, under which a compress was placed. This made more prominent the right costo-iliac space. An oblique six-inch incision was made, from opposite the outer border of the quadrate lumbar muscle downward and inward toward the right groin. A hard place was felt about the centre of the kidney, nearer to the hilum than to the outer border. A bistoury passed into the outer border of the organ near its middle struck the stone at a depth of about two inches. The opening was enlarged by the finger, and the stone was easily dislodged. To insure permanent hæmostasis, two silk sutures were carried through the kidney in front and tied on its posterior surface. These were located in the track of the kidney wound. After irrigation of the parietal incision, sterilized gauze was packed about the kidney for hæmostasis and drainage. The wound was closed and dressed in the usual way. Convalescence was uneventful. The patient now enjoys perfect health. The calculus, which was small and rough, was of the uric-acid variety and weighed twelve grains. Its shape was like that of an olive seed.

Mr. Morris, of Middlesex Hospital, emphasizes the distinctive effects of calculi upon the kidney itself and the health of the patient as well. Numerous lumbar explorations have been made, the symptoms of stone being present, with negative results. Mr. Jacobson, of Guy's, has published a list of his cases, about twenty-five in number, in which no calculus could be found and some other pathological conditions were observed. When, however, symptoms such as those described in the history above given afford strong presumptive evidence of disease of one kidney, the propriety of exploration is evident. A circumscribed focus of tuberculous disease, calling for resection, may be found; or a neoplasm may be discovered, requiring the removal of the organ. We may add—and this is a fact with which surgeons are familiar—that in some instances a subsidence of pain and hæmaturia has followed a merely negative exploration.

Progress of Medical Science.

Hæmatemesis as a Symptom of Ileus. — Hæmatemesis is such a rare symptom in intestinal obstruction that text-books and monographs on this subject neglect to make mention of it, yet Dr. A. Tietze (*Deutsche Zeitschrift für Chirurgie*, Bd. xlv., Hefte 1 and 2) records two cases, one of which came under his own observation. The first was due to a deeply seated stenosis of the small intestine, with hemorrhagic infarction of the proximal gut, the result of compression by bands of adhesions from an old perityphlitis. There was considerable vomiting of blood and the patient died within a few hours. The second case, as shown by operation, resulted from a high-seated strangulation of the entire small intestine by the free edge of the omentum, which was retracted downward and backward. There existed only "mouthful" vomiting of black, discolored blood. The patient died twelve hours after operation. The author explains the hæmatemesis of ileus as the result of structural changes in the afferent intestine, such as submucous hemorrhage, disintegration of the same, deeper ulceration involving the muscular coat, hemorrhagic infarctions, and, finally, necrosis of the entire intestinal wall. These changes are most marked in the immediate vicinity of the incarceration, becoming less so as the distance increases. Submucous hemorrhages may even exist in the stomach. Hæmatemesis occurring in ileus is more suggestive of strangulation than obturation, especially when bleeding is profuse. Hæmatemesis is not to be expected in obstruction in the large intestine, because, on account of the long distance to the stomach, and the resistance of the valve of Bauhin, blood would not be macroscopically detected in the vomited matter. There is one exception to this, and that is when a severe and fatal peritonitis develops before the occurrence of hemorrhage. The symptom is of prognostic value as an indication of severe destruction of the intestinal wall.

The Action of Atropine and Pilocarpine on Peristalsis.—Traversa, being struck by the fact that injections of atropine caused constipation rather than increased emission of fæces in horses, has investigated the action of this drug and also of pilocarpine. It was found that pilocarpine accelerated and strengthened peristalsis, while atropine lessened and finally abolished the movements of the intestine. In each case the result is obtained through paralysis or stimulation

of the ganglia and nerve endings in the intestine. From this it follows that belladonna is not likely to be of value in constipation from atony of the bowel muscle; but in lead colic where it is not improbable that the intestinal ganglia are irritated belladonna may prove a useful remedy, and indeed in all cases when painful intestinal spasm, due to irritability of the intestinal ganglia, is present, the drug in question may be used with advantage.—*British Medical Journal.*

Pseudo-Membranous Angina in Pneumonia.—Drs. A. and V. Vedel (*Montpellier Médical*, No. 29, 1898) have observed five cases of severe angina in children, due to the pneumococcus. In three cases the erythematous type existed; these children recovered in from seven to eight days. The other two cases were of the pseudo-membranous type; the children from the outset gave evidence of severe infection. All therapeutic efforts were without effect; the injection of diphtheria antitoxin produced no result, and the children died.

Treatment by Colored Light.—In the recent congress at Nantes, France, Dr. Raffegeau made a report upon the influence of colored light in the treatment of nerve diseases. In a series of twenty patients he had been enabled to determine that a stay of several hours in a room in which a violet light was diffused produced a quieting effect upon the nervous system. If, on the other hand, a prolonged sojourn was made in a room lighted only by red rays, a pronounced excitation would be produced.—*Bull. Méd.*, No. 64, 1898.

Treatment of Inebriates in Germany.—The sixth paragraph of the new code which will come into operation in Germany in 1900 enacts compulsory treatment of habitual drunkards. Among the persons liable to be interdicted, the interdiction involving being placed under a curator, who will be empowered to place the individual anywhere for treatment until discharged from curatorship by the court, inebriates are specifically mentioned. The exact description is, "He who, in consequence of inebriety, cannot provide for his affairs, or brings himself or his family into the danger of need, or endangers the safety of others." This measure was first advocated in 1863, at a meeting at Hanover, presided over by Judge Naumann, of Hamelin.—*British Medical Journal.*

Posterior Urethritis.—Dr. A. Ravogli, of Cincinnati, states his disappointment in the use of bichloride solutions, and considers the Janet method by permanganate solutions a progressive step in the treatment of gonorrhœa. His conclusions are as follows: (1) Irrigations by the Janet method in a recent case of gonorrhœa will in many cases prevent posterior urethritis. (2) Irrigations with the recurrent catheter, with permanganate of potassium, followed by injections of protargol, will cure in a relatively short time a case of subacute posterior urethritis without complications. (3) When chronic posterior urethritis, lasting for a long time, has caused infiltration of the submucous tissues, the application of a sound with ichthyol salve gives the desired results.—"Mississippi Valley Medical Association Report."

Smegma Bacilli in the Lungs.—Pappenheim (*Berlin. klin. Woch.*, 1898, No. 37) has demonstrated smegma bacilli in the sputum, and the same case, coming to autopsy, showed identical bacilli in smears taken from the lungs as well as in sections of diseased areas. To distinguish them from tubercle bacilli the following procedure is recommended: The covers are to be first stained in boiling carbolfuchsin; second, the surplus stain is allowed to drain away; third, the covers are decolored and counter-stained by dipping them from three to five times in the following solution: one part of corallin (aurin, rosolsäure) is dissolved in a hundred parts of absolute alcohol, the whole completely saturated with methylene blue, and to this twenty parts of glycerin are added; and, fourth, they are washed in water, dried, and mounted. Dr. Nicholls pointed out in a paper read at the Lister Laboratory Club of Montreal, November 11, 1898, that in gangrene of the lung the smegma bacillus seems often to be present. It is more likely to be found in clusters and within cells. Still he has known experts to be deceived. He has also seen the tubercle bacillus within cells in the sputum. Cultures are unsatisfactory. The only way to differentiate is by the staining reaction. The smegma bacillus is decolorized by absolute alcohol in from two to five minutes, while the tubercle bacillus is not. The best staining-solution is that of Pappenheim.

Parasites of the Blood.—The claim is made by Dr. Löwit (*Centralblatt für Bakteriologie*, p. 206, 1898) that a protozoon has been found by him in the white corpuscles of leukæmia, and Grassit is reported to have demonstrated an amœba very similar to the malarial parasite in no less than eight cases of goitre. This parasite, it is stated, contains a red instead of black pigment.

Pharyngo-Mycosis.—Dr. Lubet-Barbon, in the *Annales de Médecine et Chirurgie Infantiles*, draws attention to this interesting condition affecting the closed glands of the tonsils, pharynx, tongue, and occasionally pillars of the fauces and velum, in young children. It is distinguished from lacunar tonsillitis, which it closely resembles, by the firm attachment of the patches by means of peg-like prolongations into the tissues, and by marked indolence. When irritation has occurred some instances are said to be distinguished with difficulty from diphtheria. The microscope, however, shows the hardened cheese-like plugs to be made up of a somewhat conical sheath of epithelium containing tubules of leptothrix. The treatment recommended includes gargling with potassium chlorate if the child be old enough, applications of iodine, or mechanical removal of the plugs and cauterization of the base with chromic acid.

Radioscopy of the Lungs.—In a paper by Dr. Albert Abrams, of San Francisco, on the danger of misinterpretation by those who employ this method of diagnosis (*Philadelphia Medical Journal*, November 26, 1898), formulates the following conclusions: (1) Atelectatic zones may be demonstrated in a large number of individuals. (2) These zones throw circumscribed shadows on the fluoroscope, which will vary according to the degree and area of the pulmonary atelectasis. (3) The shadows cast by the atelectatic zones can be made to disappear by continuous forced breathing, and they will reappear after a variable period when quiet breathing is resumed. (4) Before deciding whether the shadow cast on the fluoroscope is really due to pulmonary consolidation, the subject should be instructed to make forced inspirations; if the shadow disappears and is supplanted by a bright reflex, it is due to atelectasis; if the shadow persists, pulmonary consolidation may safely be concluded to exist, excluding, of course, other anatomic conditions that would interfere with the transmission of the Roentgen rays to the fluoroscope. (5) Radioscopy of the lungs demonstrates that the opacities on the fluoroscope corresponding to the atelectatic zones greatly exceed the percussional areas of the latter; and, furthermore, that in individuals in whom no zones can be demonstrated opacities are sometimes present which disappear after forced inspiration. (6) Before and during a radioscopic examination of the lungs, it is always imperative to instruct the patient to practise forced breathing.

MEDICAL RECORD:

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THE LATEST REPORTS ON THYROID THERAPY.

WITH the treatment of myxœdema, cretinism, Basedow's disease, lipomatosis universalis, cachexia strumipriva, and insanity, it would seem as if the use of thyroid had reached its limitations. The successful administration and beneficial results obtained in some of the above diseases, however, have stimulated many observers and experimenters to make a wider trial of this form of medication, with the result that hardly a week passes by without an attempt being recorded to extend its field of usefulness. Thus we find Hertoghe advocating the use of thyroid as a galactagogue, and his good results have been corroborated by Stawell. Apart from this, the *Klinische therapeutische Wochenschrift*, No. 24, 1898, mentions spastic torticollis, tetany, acromegalia, Parkinson's disease combined with struma and scleroderma, as conditions in which the administration of thyroid gland has proved beneficial. Delace reports the case of a woman suffering from hæmophilia with bleeding gums, excessive menstruation, and purpura, in whom thyroid effected a complete cure. In gynæcology good results have been reported from the administration of the extract in fibroid tumors, the growth having decreased in size and the general health improved. In dermatological practice the remedy has found its principal application in psoriasis and ichthyosis, although premature grayness has responded to its use.

The dosage, method of administration, and danger signals are no less important than the indications for its use. The hypodermatic administration of the liquid extract and the grafting of the fresh gland have long fallen into disuse, and the tendency of the present day is to administer the powder or to give tablets or capsules prepared from the desiccated fresh gland. The dose varies with the individual, and for this reason it is advisable to begin with small doses, which should be gradually increased until the desired effect is produced. Beginning with one or two grains a day, as much as fifteen grains may be administered, the prescriber always being on the *qui vive* for poisonous symptoms. During the course of administration, especial attention should be given to the respiratory and cardiac apparatus, and at the first appearance of rapid pulse, embarrassed respiration, rise of temperature, vertigo, or gastric disturbance, its use should be abandoned.

Thyroid was the pioneer of the animal extracts, and thus far may be said to hold the first rank. Its field of application has been so varied that it is to be hoped that physiologists and pathologists will study its *modus operandi* more thoroughly, so that its administration in all conditions may be based upon strictly scientific grounds.

GONORRHŒAL ARTHRITIS.

THE inflammation of joints in the course of and at times after specific urethritis assumes an importance not only from the side of exact etiology, but likewise from the interesting questions of diagnosis and treatment. Views have changed in many respects during the past decade, and the discovery of gonococci in the fluids of joints as well as in the blood has opened the way to a better understanding of the whole subject. To be sure, the gonococcus cannot always be found in the effusion about the joint, but it is sufficiently often to be detected to make it of great etiological importance. In general gonorrhœal infection, in which the cocci are found in the blood, as in a recent demonstration by Ahmin and in a case reported by Rendu and Hallé (*Annales de Dermatologie et de Syphiligraphie*, February), not only may we have multiple arthritis, but lesions of the endocardium and pericardium, in which gonococci are abundantly present.

In the instance last mentioned, fluid drawn from a phlegmonous œdema of the elbow is reported to have given an almost pure culture of gonococci, and the latter were found also after death in aortic vegetations and in the pericardium. The rule, therefore, that gonorrhœal arthritis is a mono-articular affection is by no means an absolute one, and, as pointed out by Dr. Still (*The Clinical Journal*, March), it is often found that in infants and young girls with purulent vaginal discharge a number of joints and the peri-articular structures as well may become inflamed and simulate rheumatism, when gonorrhœa is the true cause.

One of the most recent contributions on this subject is that of Mühsam (*Centralblatt fur Chirurgie*, July 30th). In a series of forty cases one joint only was affected in thirty instances, and in ten more than one. Gonococci were found in the joint effusion in only four of the patients, while in the remainder they could not be identified. The results are of no little interest, and show how guarded must be the prognosis as to final results. Fifteen, or less than half, recovered with full motion in the affected limb; twelve were improved, but readily suffered relapse; in seven there was ankylosis, and no less than three had to undergo resection of the joint, while one thigh amputation became necessary, and one patient died from sepsis six weeks from the date of gonorrhœal infection. The most successful treatment was found to be complete immobilization of the joint, but when effusion has taken place the joint may, according to this author, be punctured and irrigated.

THE "TRANSACTIONS" OF THE SOCIETY OF ANÆSTHETISTS OF ENGLAND.

From a perusal of the published "Transactions" of the Society of Anæsthetists of Great Britain, one will, of course, gather much highly instructive and practical information; but at the same time one can hardly forbear to notice the difference of opinion that exists between skilled anæsthetists, both as regards the anæsthetics to be used and the manner of administering the same. Owing to the large number of fatal results following the giving of chloroform, that drug has undoubtedly, even in Great Britain, fallen into a certain degree of disrepute as an anæsthetic, and ether has correspondingly risen in the estimation of medical men as a safer means of producing unconsciousness. Nevertheless the upholders of chloroform still contend —and probably rightly enough—that the danger is not so much in the chloroform itself as in the manner of its administration. Mr. Tyrrel, when reading a paper before the society, and commenting on the many writers to medical journals nowadays who conclude their communications by saying that they have never had any difficulties with ether, appositely remarks: "When I read these letters I feel like Mr. Underwood, who was instructing a student at the Dental Hospital of London how not to break a tooth in extracting it, when the student said that he never had broken a tooth, and Mr. Underwood said: 'I am sorry for you; your experience hitherto must have been extremely small.' And this is what I feel when a man rushes into print to say that he has never had any difficulty with ether." Mr. Tyrrel is also not in favor of the A.C.E. mixture, but uses an adaptation of his own of the "double-bottle method," by which chloroform can be administered and ether added as required for the particular case under treatment. This method is said to act very well in the hands of a skilful administrator, although it has yet to be proved that ether increases the action of the chloroform. We should be rather of the opinion that its action is that of a stimulant to the patient.

The paper read by Mr. Alexander Wilson, on resuscitation in emergencies under anæsthetics, is a clear exposition of the subject, but is much too lengthy to be more than briefly noticed. To one point we would, however, draw attention—to the habit of injecting strychnine to counteract the ill-effects of chloroform. For some time past Dr. Silk has been accustomed to give strychnine in all cases in which he contemplated a severe operation, injecting a small quantity (one-twentieth grain) immediately after the induction of anæsthesia, and repeating the dose once or twice if necessary. Recently, in the *British Medical Journal*, it was reported that as much as half a grain of strychnine had been given in a case of chloroform poisoning; and in the same journal a writer stated that when he used strychnine as an antidote to chloroform overnarcosis, he gave at least fifteen minims of liquor strychninæ. This would seem to show the importance of giving fairly sized doses, in order to get any counteracting effects. Dr. Dudley Buxton, the president of the Society of Anæsthetists (speaking on the question of the methods to be used in administering anæsthetics, and in answer to questions by Dr. Cook inquiring whether the pouring of chloroform on lint or A.C.E. mixture in Rendle's inhaler, which allowed the ordinary air to be mixed with it, was not an unjustifiable method in the light of recent exact experiments and the results obtained from them), said that he, the president, could not sit in judgment upon methods which others had seen fit to employ, nor could he go so far as to say whether or not any methods were unjustifiable. His own personal feeling was that any method which did not admit of exact or nearly exact dosage was faulty, and that faultiness would sooner or later appeal to those who used it in a most unpleasant way. One had also to remember that no less an authority than Lord Lister had stated that an exact dosage could not be guaranteed by the employment of lint or a towel on which chloroform was dropped, believing as he [Lord Lister] did that, knowing the temperature of the air and therefore the rate of evaporation, no one could tell at what rate the anæsthetic was inhaled. Personally he thought the experiments from which the dictum was made were open to grave criticism.

It will be seen from the foregoing that the feeling in Great Britain leans toward the use of ether; that it is now generally recognized as a safer anæsthetic than chloroform; and also that medical men are gradually but surely becoming conscious that methods whereby exact dosage can be guaranteed are far safer than the old haphazard modes of administering anæsthetics.

News of the Week.

Uncleaned Streets in Chicago.—One of the results of a political quarrel in the city government of Chicago, whereby the annual appropriation bill is held up, is that there is almost no money left for street cleaning, and consequently the streets will have to remain dirty. Misery loves company, and we sympathize with our sister sufferer.

A Gift to Science.—Baron Iveagh, formerly Sir Edward Cecil Guinness and head of the well-known brewing firm in Dublin, has presented $1,250,000 to the Jenner Institute of Preventive Medicine in Great Britain. The purpose of the gift is to promote research in bacteriology and other forms of biology as bearing on the causes, nature, prevention, and treatment of disease. Lord Lister says that the gift will enable the Jenner Institute to compare favorably with any similar establishment in the world, and will remove from the British Isles the reproach that their opportunities for research directed toward prevention of disease are not equal to those of other nations.

The Fever at Key West.—Dr. R. D. Murray writes from Mobile: "In your editorial on the Navy Medical Department in the Medical Record for December 17th you state this: 'Yellow fever broke out at Key West,' etc. Permit me to state that there was no yellow fever in Key West in 1898; there was no isolation of the sick, and no persons were removed beyond the

danger of infection, if yellow fever had been in existence. Dengue attacked every class, naval men, tenderfeet, strangers, natives, and immunes, and in over one thousand cases not a death was recorded or considered attributable to the United States army or the United States navy 'yellow fever.' I know whereof I write, for I saw many of the cases and suffered with the disease myself."

The Disinfection of Schools.—The board of health of this city recently published the announcement that during the holidays all the public school buildings in every borough would be subjected to a thorough fumigation and disinfection. The neglected streets having been washed clean by a beneficent Providence, which sends its rain upon the just and the unjust, we may hope for an improvement in the health conditions of the city.

The Plague.—A British steamer from Calcutta arrived at Plymouth, England, on December 24th with a case of bubonic plague on board. The patient was an officer of the India Company who showed symptoms of the disease when the ship was in the Mediterranean. From St. Petersburg it is reported that the outbreak of the plague in Turkestan is now completely under control, the hygienic measures energetically applied by the military authorities having proved amply successful. In some cases whole villages were burned by order of the authorities, together with all the clothing and furniture of the inhabitants.

Leprosy in Ohio.—According to a recent despatch from Columbus, Ohio, Dr. Charles O. Probst, secretary of the State board of health, has investigated two reported cases of leprosy at New Lexington, Ohio, and has found them to be fully developed leprosy. The lepers are a young woman, aged twenty-two, and her little sister, twelve years old. For many years the mother had managed to conceal from her neighbors her children's affliction. Finally, forced by straitened circumstances, she told the story to the county authorities. The two leper girls will be isolated in a cabin to be built among the hills outside the town limits. In this cabin, which will be Ohio's leper settlement, the mother will care for her daughters, while food and clothing will be furnished by the county.

Southern Medical College Association.—This association met at Memphis, Tenn., December 5th, prior to the meeting of the Southern Surgical and Gynæcological Association, and after considerable discussion, it was decided to increase the course of study from three to four years. It is well known that the question of making the course four years instead of three has been before the association for two years, but it has been passed from time to time, in order that so radical a move might be fully discussed by all the faculties that are to be affected. Dr. Sinclair, of Memphis, presented the matter first at the meeting of the association in Atlanta, and since then from time to time it has been discussed frequently among each of the faculties in the association. At the meeting only two of the thirteen colleges in the association failed to send representatives to the conference. On account of the change to the four-year course, it was necessary to introduce a number of amendments to the constitution and by-laws of the association, but none of them was passed, because it is the rule that such amendments shall lie over for one year. This is for the purpose of giving the delegates an opportunity to present plans for whatever changes are contemplated in their respective faculties before final action is taken.—*Journal of the American Medical Association.*

The Quarrel in the Kentucky School of Medicine.—We learn from a Louisville paper that the suit between the contesting factions in this school has come to an end, at least temporarily, the court having dismissed the petition of Drs. Woody and Kelly and dissolved the injunction against Drs. Cochran, Boyd, and Wathen. This decision reinstates Dr. Wathen as dean of the school, and entitles Drs. Cochran and Boyd to professorships. Judge Miller's opinion, in effect, is that the board of regents, and not the professors, have control of the school. It is said, however, that the defeated side will carry the case up to the court of appeals, and in the mean time the court is asked to continue the injunction temporarily pending the appeal.

Education and Diphtheria.—The public health department of the London County Council has issued a report upon diphtheria and elementary schools, in which Dr. Shirley F. Murphy repeats his opinion that the increase of diphtheria in London is largely due to the aggregation of children in schools. Dr. Murphy closes his report with this very grave warning: "I am satisfied that the full recognition of the effect of compulsory school attendance in this connection is absolutely necessary if efficient measures are to be adopted for the prevention of diphtheria caused in this way. The system of notification supplies but a very inconsiderable record of the total number of persons actually suffering from the disease, its principal use being to give indications as to where inquiry should be made. The circumstance that schools contribute largely to the prevalence of this disease not only justifies but necessitates the medical officer of health having free access to schools where school children can be most readily examined for the prosecution of his inquiries. I am led to make these observations, because the medical officer of health of a London district reports that the London school board has addressed to his authority a letter 'severely censuring' him for examining in school certain children during scarlet-fever prevalence among the pupils of the school, where, in fact, he found children he had grounds for regarding as possibly infective. The board stated that they would not allow him or any other medical officer to examine children in their schools. The authorities in London should look to this, and would act wisely if they followed the example of New York in this respect."

The Value of a Medical Diploma in Missouri.—The court of appeals of Kansas City has recently decided that it is not necessary for one to attend a medical college in order to secure a diploma from it, and if the officers of a college believe that any one is

qualified to practise medicine or surgery, they may give a diploma to him. In so doing they might be guilty of a technical violation of the law, the court decided, yet they cannot be prosecuted for the illegal act. The decision was rendered in a suit brought to annul the charter of the "National School of Osteopathy" for having sold a certificate (price, one hundred and fifty dollars) that the bearer had completed a full course of study at the institution, whereas he had simply entered the building twice. The curious person exercising judicial functions at the time wrote a most learned and logical opinion, maintaining that "the violation of the law was that the diploma was issued when there had been no personal attendance for the time specified by the Missouri laws. This was a legal wrong, but not sufficient to warrant the forfeiture of the school's franchise. It was not a wilful abuse of the law, nor an improper neglect of the duties prescribed for such colleges."

The New York State Medical Society.—Dr. W. G. Macdonald, of Albany, announces, on behalf of the business committee of the New York State Medical Society, that the programme is already overflowing with contributions and that no more can be received. The preliminary programme will be issued within a few days, and promises to be an interesting one.

The Bombay Medical Union on Preventive Inoculation in Plague.—The following resolution was adopted on November 8th, by the Bombay Medical Union, at the close of a discussion on the plague, which had occupied several successive meetings. "This meeting is of opinion that, considering the data now available and the satisfactory results of the observations collected regarding the protective effect of Professor Haffkine's plague prophylactic, the time has now arrived for the profession to utter a definite pronouncement on the subject and to invite the public to resort freely to protective treatment as the only safeguard against plague. The immunity derived from inoculation when done with a full dose appears to last for at least six months; but there is a possibility of its lasting much longer. From observations collected lately it appears that a second inoculation, done ten days or so after the first, further reduces the incidence of plague in those who resort to inoculation, and a third if such be practicable would increase the immunity still further. The public are therefore to be invited to resort to at least two inoculations, and even to a third if practicable. The duration of protection is also likely to be enhanced by such a repetition. This meeting of medical men, who have had a wide experience of inoculation on persons of all positions, ages, and conditions, declares emphatically that rumors of inoculation originating different diseases are devoid of any foundation; that considering the nature of the prophylactic, which does not contain any living germs, such an eventuality is absolutely impossible, and that there are no facts to show that inoculation aggravates any existing ailments, despite rare and isolated instances which may at first suggest such an idea." Four native physicians opposed the resolution.

Obituary.

JOHN B. HAMILTON, M.D., LL.D.

CHICAGO, ILL.

Dr. Hamilton died at Elgin, Ill., on December 24, 1898, of acute peritonitis. He was born in Jersey County, Ill., on December 1, 1847. He was graduated from the Rush Medical College, Chicago, in the class of 1869. He at first engaged in general practice, but in 1874 entered the medical department of the United States army, with the appointment of assistant surgeon. Two years later he resigned and entered the Marine Hospital service as assistant surgeon. The following year he was promoted to the rank of a full surgeon, and in 1879 was appointed supervising surgeon-general on the death of the then incumbent. In 1891, having failed in an endeavor to induce Congress to raise the Marine Hospital service to an equal rank, including salaries of the officers, with that of the medical corps of the army and navy, he resigned his position as supervising surgeon-general, and re-entered the ranks of the service as surgeon. After serving as surgeon in charge of the Marine Hospital at Chicago for a number of years, he finally resigned from the service and resumed private practice.

While resident in Washington, Dr. Hamilton was professor of surgery in the medical department of the University of Georgetown and surgeon to the Providence Hospital in Washington. In Chicago he was professor of surgery and clinical surgery at the Rush Medical College, professor of surgery in the Chicago Polyclinic, attending surgeon to the Presbyterian Hospital, and consulting surgeon to St. Joseph's Hospital and the Central Free Dispensary. Two years ago he was appointed superintendent of the Insane Asylum at Elgin, near Chicago.

While on a visit to the East two weeks since, Dr. Hamilton was attacked by a severe cold, and in a few days peritonitis developed. In spite of everything that could be done, he grew worse rapidly, and on December 18th it was decided, by Dr. Nicholas Senn, that an operation was necessary to save his life. The operation was performed, and at its conclusion Dr. Senn said that in his opinion Dr. Hamilton had no chance of recovery. He rallied slightly after the operation, however, and for a few days there seemed to be a probability that he would pull through. For the last two days he had, however, been sinking slowly, and death came at 6:30 P.M., December 24th.

Dr. Hamilton was pre-eminently a man of executive talents. He was a good surgeon, but his best work was done as head of the Marine Hospital service, when he had to contend with two serious epidemics of yellow fever in the South, and also as editor of the *Journal of the American Medical Association*, to which position he was elected in 1893. For his excellent work during the Florida epidemic of yellow fever in 1889, he received the thanks of the legislature of that State. In 1892, at the time of the threatened invasion of this port by cholera, he was instrumental in establishing "Camp Low," a retention camp at Sandy Hook. It was through his influence that the national quarantine acts were passed by Congress. A favorite study of his was the history of medicine.

Dr. Hamilton was a man of strong personality, and impressed the stamp of his individuality upon everything he undertook. In him many men have lost a firm friend and most genial companion, some few an implacable but fair-fighting enemy, and the American Medical Association an excellent editor and a member who has done more than any other one person to promote the usefulness of the organization.

Reviews and Notices.

Wie ist die Fürsorge für Gemüthskranke von Aerzten und Laien zu fördern? Von Prof. Dr. C. Fürstner. Berlin: S. Karger. 1899.

This small monograph is intended to increase the knowledge of physicians and laymen in caring for the insane.

Die Störungen des Verdauungsapparates, als Ursache und Folge anderer Erkrankungen. Von Dr. Hans Herz, in Breslau. Berlin: S. Karger. 1898.

The present book treats of the digestive disturbances which accompany diseases of other organs than the digestive tract. It is quite interestingly written and can be warmly recommended.

Transactions of the Medical Society of the State of New York. 1898.

This publication by the society is issued in the usual good style and contains five hundred and twelve gilt-edged pages, bound in green. This represents forty-four papers and discussions. Handsome illustrations accompany the paper by Williams and Fink on the *x*-rays. Hypertrophy of the prostate is discussed by Keyes, Bangs, Pilcher, and others. Altogether this *résumé* of the society's work is creditable.

Diet and Food. Considered in Relation to Strength and Power of Endurance, Training, and Athletics. By Alexander Haig, M.A. and M.D. Oxon., F.R.C.P. London: J. and A. Churchill. Philadelphia: P. Blakiston's Son & Co. 1898.

The present monograph by the well-known English writer is quite interesting but somewhat one-sided. Haig, as a whole, champions a strictly vegetarian diet, going one step further in excluding also eggs, on account of the uric acid they contain. He is also a strict believer in temperance, and forbids all beverages containing alcohol, tea and coffee, and smoking.

Fatty Ills and their Masquerades. By Ephraim Cutter, LL.D., M.D. Harvard 1856, and University of Pennsylvania, 1857, and John Ashburton Cutler, B.Sc., M.D. Albany Medical College, 1886, Corroborator.

In this curious book, with its peculiar title, the authors attempt to prove that fatty degeneration is the cause of many common diseases known under other names. They establish their claims upon false premises, however, in assuming that Bright's disease, alcoholism, etc., are fatty ills, the result of fatty degeneration, whereas such a degeneration is merely an outward or physical manifestation, the result of a known or unknown etiological factor.

Laboratory Work in Physiological Chemistry. By F. G. Novy, Sc.D., M.D., Junior Professor of Hygiene and Physiological Chemistry, Ann Arbor University. Second edition. Ann Arbor: George Wahr. 1898.

The present edition, while not yet bringing Professor Novy's work up to a point of completeness or exhausting the subjects discussed, is a decided improvement on the first, and the brief explanatory descriptions added will be found of value to the student. In several parts more detail still and points of technique might have been added. In a work of this kind it is not safe to assume that the student has any previous knowledge, and each step must be fully explained. The pages have been wholly rewritten, and the author must be complimented upon a painstaking work which will be a safe guide to students, and one which teachers of medicine as well as those who work in the laboratory will find almost a necessity.

The Treatment of Skin Cancers. By W. S. Gottheil, M.D., Professor of Dermatology at the New York School of Clinical Medicine; Dermatologist to the Lebanon Hospital, the Northwestern and West-side German Dispensaries, etc. New York: Published by the International Journal of Surgery Company.

No more praiseworthy motive could be found than that which the author tells us in his preface actuated him, in putting forth this little volume of sixty-seven pages. He says: "It is my hope that what I have written may do something toward taking this most eligible method of treating cutaneous carcinomata out of the hands of unauthorized practitioners, and placing it where it belongs, at the disposal of the profession at large." Physicians are not sufficiently careful about warning their patients to avoid the many different kinds of quacks, who, by their advertisements of cure without the knife, etc., attract sufferers from cancer, and from many other diseases as well, away from their own and other reputable physicians. There are a number of illustrations of skin cancer and formulæ of arsenical pastes, etc. Other methods are discussed briefly.

A Laboratory Guide in Urinalysis and Toxicology. By R. A. Witthaus, A.M., M.D. Fourth Edition. New York: William Wood and Company. 1898.

The fact that this little book has passed through four editions is proof in itself of the approval which it has met with at the hands of students and general practitioners. The first half deals with inorganic chemistry and is admirably arranged to suit the needs of the student during his laboratory hours. The second part is devoted to the qualitative and quantitative analysis of the urine, to urinary deposits, and to the detection of the volatile, metallic, and vegetable poisons. The same care, precision, and conciseness which characterized the earlier editions are evident now. The print is limited to one side of the paper, thus giving the student ample room for additional notes. The illustrations are well selected and convey an excellent idea of the conditions under discussion. The binding is neat and attractive, the price moderate, and the entire book is of such a size as to enable it to be carried in one's pocket.

The Practitioner's Manual. A Condensed System of Medical Diagnosis and Treatment. By Charles Warrenne Allen, M.D., Consulting Genito-Urinary Surgeon to the City (Charity) Hospital; Consulting Dermatologist to the Randall's Island Hospital; to the Hackensack Hospital, to the Bayonne Hospital, to the Infant Asylum of the Holy Rosary; attending Surgeon to the Good Samaritan Dispensary (Department of the Skin), etc. Pages 851. New York: William Wood and Company. 1899.

This volume, as the title suggests, is a compilation of many practical points which are of decided use to the active general practitioner who wishes a book of ready reference. The author has wisely arranged his work alphabetically in order thus to facilitate its consultation. Under each heading he gives the definition of the disease, the main clinical features which would lead to its detection, with the special points of its differential diagnosis concisely but fully described.

The main portion of the book, however, consists in the collection of therapeutic measures, which are apt to be but too often hurriedly dismissed in the modern systems of medicine and students' text-books. He has taken the pains to forward circular letters to those eminent in the profession asking for their views and favorite formulæ, thus enabling him to publish the most recent ideas which are extant, many of which have heretofore not found their way into print. In the difficult task of selecting the best prescriptions he has certainly shown admirable discrimination and a spirit of fairness, thus making his work extremely valuable to a large group of readers who wish to learn the various and often conflicting views of the leaders of medicine. In so doing he makes it possible to afford a latitude of choice so essential in treating complex conditions where certain drugs may be contraindicated, or where the selected medicine fails to act as expected. A useful feature is the rather full consideration which he gives to the minor ailments, to the simpler symptomatic complaints which often tax the therapeutic ability of the physician, and about which the ordinary text-book is oftentimes too silent. When powerful drugs are advised in the various prescriptions he has appropriately added a "caution," naming the special danger or contraindication which must be considered lest harm result.

The volume does not pretend to supplant the use of the usual works on medicine, but rather to supplement them, and the author is certainly to be congratulated on the success which has met his efforts. In fact it is a book which every man in general practice will find handy and useful, and will serve as a means of introducing to him many ideas and hints which would otherwise have been inaccessible, and of enabling him to procure at a minimum of exertion that which ordinarily would require much time and delay to find in the scattered volumes and journals of his library.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, December 15, 1898.

E. G. Janeway, M.D., President.

The meeting was in charge of the Section on Genito-Urinary Diseases.

Observations upon the Pathological Anatomy of Chronic Enlargement of the Prostate, with Special Reference to the Causes of Muscular Insufficiency of the Bladder.—Dr. Samuel Alexander presented a communication with this title, and illustrated it freely with lantern slides. He said that when there was a distinct and more or less pedunculated nodule, one might be sure that the trouble began in the accessory glands at the internal urethral orifice. The cause of the prostatic pouch was to be found in the fact that the muscle covering the trigone was very rigid and compact, while the muscle lying behind the bladder was loose and easily dilated. When, therefore, pressure was brought to bear behind the trigone, as occurred in cases of obstruction, this portion behind the trigone gave way and sank down behind the trigone, thus forming a post-trigonal pouch, often improperly called a "post-prostatic pouch." There might be very marked enlargement of the posterior isthmus without interference with urination. Obstructive disease of the prostate when due to the lateral lobes was purely mechanical at the beginning, the bladder being simply called upon to overcome the obstruction which the pressure downward of the lateral lobes had produced on the urethra. When the lateral lobes projected into the bladder, and deformed and narrowed the urethra, the same thing occurred. When, however, the obstruction occurred on the floor of the canal only in one place—*i.e.*, above the veru montanum, and between that and the internal urethral orifice—it might be due to one of three causes. When there was enlargement of the anatomical median lobe itself, there was simply hypertrophy of the muscle covering the trigone, owing to its attempt to overcome the obstruction by elevating the lower end of the internal urethral orifice. A second cause was to be found in the cases in which the accessory glands which lay along the course of the urethra in many normal prostates grew out into the urethra, forming an intra-urethral tumor arising from the floor of the canal. This was usually connected also with enlargement of the so-called anatomical median lobe. A third cause was to be found in those cases in which the median enlargement and enlargement of the floor of the canal occurred as a result of hypertrophy of the accessory glands at the internal urethral orifice and the formation of a separate tumor. This was separated at first from the anatomical median lobe by the muscle of the trigone, but later on, as the disease advanced, it became continuous with the third lobe. In all of these three classes of cases, and especially in the last two, the cause of the loss of power was the destruction of the insertion of the vesical muscle into the prostate and the consequent inability of the bladder to empty its posterior fold.

Dr. Willy Meyer said that the treatment of prostatic hypertrophy could not fail to be greatly benefited by such studies as that just presented. He had been especially impressed with the manner in which the lateral lobes press down upon the urethra in such a remarkable way. In his recent paper on the Bottini operation he had referred to a case in which catheterism had been extremely easy, and yet there was a considerable quantity of residual urine. In this case with the cystoscope he was able to demonstrate the existence of a small growth within the urethra, which evidently caused the obstruction. It was a counterpart of what had been presented on the screen this evening. The accessory glands, about which so much had been said in the paper, could be well seen by means of the cystoscope. The part played by the lateral lobes in the production of obstruction, as demonstrated in the specimens just exhibited, brought out the fact that, in the Bottini operation, instead of raising the handle of the instrument it should be depressed.

Dr. Alexander, in closing, said that he desired to express his great obligation to the members of the pathological staff of the Carnegie Laboratory for their kindness in connection with this work, and also to Mr. O. Mason, the distinguished photographer of Bellevue Hospital who had spared no pains in the production of the lantern slides.

A Very Rare Book.—Dr. A. Jacobi announced that a very rare and valuable book had just been presented to the library of the Academy by Lothar Voss, one of its honorary fellows. Dr. Voss returned to Germany thirty years ago, being at the time a surgeon of note. He was the second person in New York to introduce tracheotomy as a part of the systematic treatment of croup. He had been collecting rare and valuable books all his life, but the one just given by him to the Academy was the best "find" of them all. The book is on the lymph vessels, and is by Gaspar Asellii, who discovered these vessels on July 23, 1623. He also discovered the valves, and noted that they ran in the opposite direction to those of the veins. Asellii was born in 1581, and died in 1626. The book was printed in 1627, and was the first one giving colored anatomical plates. The book was reprinted twice, the third edition appearing in 1640, but these two later editions were decidedly inferior to the first one. The work had been considered almost extinct. There was one copy in the University of Leipsic, and a defective copy in the library of the University of Breslau. The book just given to the Academy was one of the two copies now known to be in existence, and was one of the first edition. The Surgeon-General's Library, Washington, D. C., contained a copy from the inferior third edition of 1640.

Dr. Lewis A. Sayre, in moving that the Academy of Medicine should express, though Dr. Jacobi, its thanks for this generous donation, took occasion to speak of the circumstances in which he had first become acquainted with Dr. Voss, who, he said, was a bold, practical, and brilliant surgeon.

SECTION ON SURGERY.

Stated Meeting, December 12, 1898.

W. W. Van Arsdale, M.D., Chairman.

Almost Complete Excursion of Scapula due to Paralysis of the Trapezius.—Dr. V. P. Gibney, on behalf of Dr. C. Tranchida, presented this interesting case. The patient, a man twenty-three years of age, an Italian by birth, had been apprenticed when ten years old to a maccaroni factory, where the work was said to be exceedingly severe, requiring extraordinary muscular development of the upper extremities. After a number of years at this occupation he attempted at the age of eighteen to enter the Italian army. He was excluded by the surgeons because of a weakness of the muscles controlling the scapulæ. Shortly after this he received electrical treatment and massage at a hospital in Palermo, and, on leaving there, came to this country. Examination showed that the scapulæ projected like "angel wings." A few months ago he began to have weakness of the muscles of the right hand. Since then his walk had been peculiar. The

case was apparently one of well-marked progressive muscular atrophy. The erector spinæ muscles were not as yet very much involved. Owing to the paralysis of the trapezius, the scapulæ, and particularly the right one, made a remarkable excursion. There was a peculiar falling forward of the shoulders owing to the fact that only a few muscular bands of the pectoral muscles still remained. That the disease was progressive was well shown by the history, and there was but little prospect that he would improve. A careful investigation had failed to show any such disorder in other members of his family.

Multiple Exostosis.—Dr. J. F. Erdmann presented a case of this kind occurring in the person of a physician, about thirty years of age, whose family and personal history were negative except that the patient himself had had an attack of typhoid fever about fourteen years ago. The first tumor discovered, that on the right femur, was not noticed until convalescence from this illness. Examination showed an exostosis in each vastus externus muscle, in the right radius, on the outer aspect of the right femur, and on the right internal malleolus. Radiographs of the case were also exhibited.

Dr. B. Farquhar Curtis said that about five years ago he had seen at the Vanderbilt Clinic a somewhat similar condition of the muscle to that observed in Dr. Gibney's case. The scapulæ stood out just as in the present case, but they were very much smaller than normal. The disease in this case did not appear to be progressive, but rather a congenital condition.

Dr. Reginald H. Sayre said that he had seen only two cases of this kind, one unilateral and the other bilateral. There had been a good deal of discussion as to whether this condition was due to slipping off of the serratus magnus or to paralysis of the subscapularis. In the cases that he had seen, it seemed evident that the paralysis of the subscapularis was the cause of the tipping out of the scapulæ from the body, rather than a dislocation. This also seemed to be the condition present in the patient under discussion. The cases he had seen had not exhibited, during the few months they had been under observation, any tendency to progress.

Dr. W. W. Van Arsdale said that there seemed to be so many muscles affected and the grouping of them was so peculiar that he was reminded of those paralyses described by neurologists as "systemic paralyses." Although they did not seem to correspond exactly to any of these groups, they did not correspond to the grouping laid down by neurologists as ordinarily observed in progressive muscular atrophy.

Dr. Gibney said that he had seen a number of these cases of multiple exostosis, and had reported about sixteen years ago a series of five or six cases occurring in one family. The grandfather was a musician, and his exostosis developed first in the arm with which he was accustomed to hold his musical instrument. The father had a great many exostoses, and several of his children also presented similar conditions. He had followed these cases for a number of years, but had learned nothing further in regard to them. The muscles gradually became accustomed to the presence of these growths, and they then gave little trouble, so that very few of them came to operation.

Dr. John B. Walker said that he had seen three cases in the last eighteen months. In the first case there was an exostosis over the internal condyle in a young girl. Recently it had grown rather rapidly and had caused some pain. It had accordingly been excised. He had also seen an exostosis over the internal condyle in a boy and in a male adult. Only yesterday he had seen still another case in a dissecting-room subject.

Dr. Van Arsdale remarked that it was an easy matter to remove these growths by operation, and the results were entirely satisfactory.

Dr. Erdmann said that these growths were often seen near the internal condyle, but the case presented was interesting because of the exostosis on the outer aspect. The patient desired to have them removed because of the inconvenience which they occasioned.

Elephantiasis of the Vulva, with Report of a Case.—Dr. W. Duff Bullard read a paper on this subject which will appear in a future issue.

Dr. W. B. Coley said that the case was a most remarkable one. The question of etiology seemed to him especially important and interesting. He did not think the causation by the filaria sanguinis could be ruled out here. The fact that the disease developed shortly after bathing would seem to be very strong evidence that the cause might have been the filaria, as bathing was one of the modes by which the filaria was introduced into the system.

Dr. B. F. Curtis said that one or two cases of filaria associated with elephantiasis of the lower extremities in males had been at St. Luke's Hospital. The presence of the filaria had been demonstrated in these cases only after repeated and most careful examination. In many cases in this country elephantiasis developed in connection with chronic inflammatory conditions. He recalled one case of chronic ulcer of the leg and necrosis of the tibia, in which a typical elephantiasis of the skin was engrafted upon the first condition. At the urgent request of the patient he had amputated the limb above the knee. In such cases the elephantiasis was evidently due to chronic inflammation and obstruction of the lymphatics. In cases of filaria observed in this country, the persons had at some previous time lived in the tropics.

Dr. Carl E. Pfister said that he had seen a good deal of elephantiasis in India, Japan, and China. There is very little elephantiasis in South America. He recalled a very interesting case of elephantiasis of the penis in an English soldier, following the removal of a chain of infected inguinal glands. That was the only case of elephantiasis that he had seen in India among the white population. He had seen elephantiasis of the scrotum in two white persons.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE BRADSHAW LECTURE—PERFORATION OF STOMACH BY ULCERS—MEDICAL COUNCIL—MR. HORSLEY'S REPORT—SCHOOL OF TROPICAL MEDICINE; COMMITTEE AND STAFF DISPUTE—SIR W. BROADBENT'S VERDICT—THE "CHRISTIAN SCIENCE" CASE—DEATH OF DR. CLEVELAND.

London, December 9, 1898.

The Bradshaw lecture was delivered at the Royal College of Surgeons on Wednesday by Mr. Pickering Pick, who took for his subject "The Union of Wounds." He remarked that, while many hold that repair is incompatible with inflammation, others regard that process as essential to healing. No doubt Hunter believed that wounds may heal without inflammation, and at the present day this view is expressed by Roser. But so many surgeons and pathologists oppose this notion that it seems clear that the word is differently interpreted. There will be no agreement until the previous question of a definition is settled.

Mr. Pick divides the several modes of union into only two classes, those without and those with suppuration; and the latter he regards as merely a modification of the other. Primary adhesion as taught in

some text-books he discards as untenable, the cases so described being merely those in which the inflammatory process is at a minimum. He pointed out the close analogy between the processes of union by first and second intention. In both there are inflammation and exudation; in both the material exuded, though differing in amount, forms the bond of union. In the second class of cases there is the same process with the conversion of the exudation into granulations and in the superficial layers. The cells degenerate into pus cells. This is due to prolonged or excessive irritation produced by micro-organisms. Those who hold that such organisms are present in every inflammation will not admit Mr. Pick's arguments. But those who admit that we may have inflammation without the concurrence of organisms may readily accept the evidence he brought forward that union of wounds is, after all, an inflammatory process. If not, what is it?

The necessity for immediate operation when perforation occurs from gastric ulcer was discussed at the Clinical Society's meeting last week. The subject was introduced by Mr. J. C. Wallis, who read notes of two cases on which he had operated. In one the abdomen was opened ten and one-half hours after perforation, and the patient did well for eleven days, but then developed phlebitis. On the seventeenth day pneumonia set in and lasted to the twenty-ninth day, when the temperature fell and improvement began. But on the thirty-first day the patient suddenly vomited six ounces of blood and died in an hour. As no post-mortem could be obtained the cause of this late hemorrhage can only be conjectured.

In the other case a married lady, who had suffered from gastric symptoms since 1882, was seized with signs of perforation, in November, 1895. She recovered, but still had so much pain that she could take no exercise and only fluid food in small quantities. An exploratory operation revealed a strong cord a quarter of an inch broad and one and a quarter inches long uniting the pyloric end of the stomach to the abdominal wall. This was removed, and after long convalescence the patient quite recovered, after fourteen years of suffering, and is now (two years after operation) well. Mr. Wallis therefore hopes the benefit will be permanent. At a later period of the discussion he admitted that some cases of recovery without operation had occurred after perforation, but the great majority had been fatal—in fact, the patients died for want of laparotomy, which he did not consider a very terrible ordeal. He therefore agreed with most surgeons that operation is imperative.

Dr. Hawkins, of Reading, described a couple of cases in which it was believed perforation had occurred, but recovery took place although no operation was performed, and he raised the question whether this measure is always necessary.

Dr. Kingston Fowler said no to this, and related a case to show that after perforation with escape of gas into the peritoneum recovery may take place.

Dr. S. Phillips also mentioned two cases of recovery after the usual signs of perforation.

Dr. Lucas Benham observed that posterior ulcer is not so dangerous as one on the anterior surface, and outlined a case of the kind, which, however, was fatal, the ulcer at the post-mortem being found to be the size of a shilling and freely permitting the contents of the stomach to pass in and out of the posterior cavity of the peritoneum.

Mr. Spencer observed that disappearance of liver dulness is sometimes due to distention of the colon, and to be of value must be accompanied with rapid pulse—rarely below 120 to 130 in perforation. He mentioned cases to illustrate this.

Dr. Toogood told of a case of acute pain, disappearance of liver dulness, and pulse of 130 to 140. On abdominal section he found the stomach normal, but the patient died the next day, and at the post-mortem a very small ruptured aneurism of the aorta was found.

Mr. Symonds described the case of a lady sixty years old on whom an exploratory operation revealed a thickened mass springing from the posterior wall, dividing the stomach into two cavities. He united the cardial end to the small intestine, thinking the case malignant. Death occurred on the sixth day suddenly. At the post-mortem the stomach was found full of blood from an old ulcer of which the thick mass had been the border. On the posterior wall was an enormous ulcer with the edges fixed to the parts in front of the spine. Another case was that of a gentleman who has undergone seven laparotomies but is now well. He remembered a man forty-three years of age on whom it was intended to operate the next day, but in the morning acute pneumonia was found. In another case a girl was operated on and the stomach found healthy. She recovered, and her case was recorded as acute hysterical vomiting. The pulse was not invariably rapid—he had seen it as low as 60, and a lower figure has been recorded. It is obvious that diagnosis is not so clear as is often stated, and the mistakes that have been made may well give pause. Nevertheless, most surgeons would prefer to operate early, and in a clear case this is the most hopeful practice.

Mr. Horsley in the Medical Council endeavored to raise the question of the appeal of the late Mr. Hunter. This gentleman was the qualified practitioner who was prosecuted by the council last May for styling himself "physician and surgeon." I mentioned the matter at the time. Mr. Hunter died soon after, and there are not wanting those who declare that his death was brought about by the council. The council by a vote of 21 to 6 declined to give Mr. Horsley the opportunity to discuss the case, and resolved to digest their shame in secret. Accordingly Mr. Brown and Mr. Horsley have sent to the journals a protest against the legal advisers of the council appearing in support of their appeal now pending. The blundering of the council and their advisers on this case accentuates the disgust felt at their carelessness as to the doings of notorious quacks.

Mr. Horsley has issued his fifth report to the Registered Practitioners, in which he deals effectively with this case. The council has not discussed the case, and the unconstitutional procedure adopted is akin to the obstruction offered to the production of the documents of the council for inspection by councillors. Mr. Horsley is doing splendid work in maintaining the equal rights of all the members and in forcing the council into more constitutional proceedings.

The proposed School for Tropical Diseases has begun badly. Sir H. Burdett, who has a fancy that he knows everything about hospitals, wrote to *The Times* in July that the teachers would be the senior officers of the Dreadnought Hospital together with others specially selected. It now appears that these senior members were never consulted about the matter and have since been asking why, but have extracted no explanation of the discourtesy from Sir H. Burdett and the committee. This is the requital the three senior medical officers receive for their service of eighteen, ten, and seventeen years respectively. The matter has provoked such unfavorable comment in the newspapers that the committee has issued its defence in a "memorandum" which it was silly enough to submit to Sir W. Broadbent. He has replied in a letter showing that the committee presented a one-sided statement to the Secretary of State and in its own memorandum is guilty of a *suggestio falsi*.

Sir William concludes that "a committee capable of such a suppression of truth material to the issue and

of such a suggestion of what is calculated to mislead is, in my opinion, totally unworthy of confidence." After such a distinct condemnation by the authority they selected the committee has no honorable course but to retire. Sir William Broadbent's verdict will be indorsed by the whole profession.

The magistrates have dismissed the charge of manslaughter against the "Christian Science" women in the case of the late Harold Frederic, remarking that they were partly influenced by the fact that it is still open to the treasury to prosecute on the finding of the coroner's jury.

The Queen has paid another visit to the sick and wounded soldiers in Netley Hospital.

The death of Dr. Cleveland was very sudden. On the 24th ult. he was as well as usual, and about the time he was expecting a couple of friends to dinner he walked from one room to another, fell down, and expired immediately. He was seventy-five years old, and a post-mortem showed fatty degeneration of the heart. Dr. Cleveland had for many years been a familiar figure in the medical world and an active member on the council of the British Medical Association. He had been president of the Metropolitan Branch.

THE PERPLEXITIES OF MEDICAL VISITORS IN NEW YORK.

To the Editor of the Medical Record.

Sir: It has been often repeated in editorials and addresses that it is no longer necessary to go to Europe to obtain all that is latest and best in medical science. It is true that some of the most brilliant surgeons of the world are operating in New York City. Moreover, if one would see surgery, it is unpatriotic not to learn what advantages our own metropolis offers before going to Vienna.

All this has been earnestly promulgated and is generally admitted. If some surgeon should, however, for inspiration leave his practice to spend two weeks in the city, he would soon discover one reason why those who can afford to do so continue to go abroad. This reason is the impossibility of knowing when and where the operations take place which he desires to see.

His hotel will inform him that there are hospitals in abundance for two or three miles in every direction; but unless he is especially acute, his stay will be nearing its close before he finds out how and when he can see anything at them. It would seem to be the most natural thing in the world that of somebody or in some place, for love or for money, there could be obtained information of the operations and operators on a given afternoon. But if this be possible to exceptionally brilliant people, it certainly is not so to the ordinary visitor. Of course he does not expect to see anything in the forenoon, for then every one is busy in his own office. Evenings are dedicated to amusements; the only hope of accomplishing anything is at three o'clock in the afternoon. Certain hospitals, he learns at last, have operations every Saturday afternoon. At others there are operations by different surgeons at irregular intervals. Sometimes postal cards are printed announcing them, but no one knows where to go to see these postals. One may telephone to each hospital every morning for information, but the chances of getting any from the boy who answers the telephone are meagre. A lively fancy might harbor the supposition that the bulletin board at the Academy of Medicine would contain such notices, but on applying the test of experiment to this flight of the scientific imagination he would find there only advertisements of practices for sale, examinations for house surgeons, and the like.

There remains to him the method of travelling about from Fifteenth to One Hundred and Fourteenth Street and surprising people in the offices by inquiring if any operations take place in their hospital on that day; but as for seeing the special operations that he needs, or many of the men of national reputation that he came to see, the prospect soon grows doubtful.

By perseverance—and chance—if his time is not too limited, or he does not begin to feel that it could be better spent at home, he does witness some surgery, and very good surgery it is likely to be. The surgeons themselves treat him so kindly, and are so obliging in answer and demonstration, that he cannot think that it is from any unwillingness on their part that their hospital work cannot be better seen. It might well be that the eminent surgeons would feel that too many were dabbling in surgery, and that the little knowledge they could impart by too public clinics would be a dangerous thing for the country practitioner as well as for themselves. This idea, however, is not the general one. That giving doth not impoverish, and withholding doth not enrich, is, I think, the belief most generally held by our profession in regard to scientific truth or its adaptation to the healing art.

It is because this waste of time to the visitor does seem so needless that I have ventured to call attention to it in this letter. A practical remedy is not so easy to suggest. If each hospital should send a list of operations for the next day to the Academy of Medicine—furthermore if the Academy should endeavor to keep this list complete, charging those who consult it a fee if thought best, or posting it publicly if they could afford to do so—it would certainly be a very great convenience. Any other location might be selected and an item to the effect published in our city medical journals. Two or three years ago such a list was daily posted in the College of Physicians and Surgeons in Philadelphia, which must have proved an accommodation to others besides the writer.

I am quite sure that if this statement of the troubles of the visitor from outside shall fall under the eyes of certain of the energetic physicians of New York City, they will add to our present obligations to them by putting in operation some remedy similar to or better than the one here proposed.

F. N. Higgins.

Cortland, N. Y.

[If the writer had consulted the bulletin board at the left of the entrance in the Academy he would have seen cards announcing operations in many, if not most, of the hospitals in the city. He evidently looked only at the bulletin at the library door.—Ed.]

THE CARE OF THE TROOPS IN HAWAII.

(From our Special Correspondent.)

To the Editor of the Medical Record.

Hawaian Islands, November 30, 1898.

Sir: Of numerous sanitary questions arising from a new colonial departure of the United States in tropical countries, the health condition of our troops requires immediate attention. Since the beginning of the war to this day Honolulu is crowded with troops, partly as a local garrison but principally as a transport and coaling station on the way to the Philippines. Ever since, an epidemic of typhoid fever, with a percentage of mortality far above the usual for this place, has continued to ravage in their midst. The mischief is due to several causes. Upon inquiries we learn that a considerable part of the volunteers are clerks, merchants, and others untrained for any active physical life and privations connected with an extemporized campaign. Owing to the hardships of camp life, forced

marches, and poor diet, they embark at San Francisco with their constitutions already undermined. During the voyage of seven to twelve days to Honolulu their condition becomes still worse; upon the transports they are crowded, and the food is poor and insufficient. Complaints in this regard upon landing are general. As a rule, several cases of typhoid fever develop on board every transport already on the way. Thus all conditions for an epidemic are present; burning matches are lying close to the powder, germs of disease close to a good medium for their quick and extensive propagation. The commander of a body of such troops may be compared with a man holding a box of matches in a conflagration. The only course for him is to scatter them far and wide to save those yet unaffected.

Another cause comes into play upon landing: it is the local climate of the place. As I will show in my further letters, there is no such entity as a "tropical climate." Tropical countries have all kinds of climates, with but few general characters not dependent on latitude. The problem before the sanitary officers in charge is to select such places of the country as will suit the newcomer the best, and require the minimum efforts for acclimation. In a tropical country this problem is reduced to a few elementary principles: to provide unquestionably pure drinking-water; to avoid large settlements; to avoid low elevations in general and swampy, undrained plains in particular; to choose localities away from all resources of stagnant water and malaria.

None of these precautions are taken upon landing troops in Honolulu. They stay where they land, viz., in the town and its suburbs. The very military hospital is located in the so-called "Independence Park," the least fit locality on account of its bad malarial reputation, surrounded as it is with morasses, ponds, rice and banana fields. The town of Honolulu represents an old settlement with about thirty thousand inhabitants, and is located upon a vast plain between the sea and the adjoining mountains. This plain is a coral field partly covered with alluvial soil washed down from the neighboring hills. On account of its low elevation and of the mountain waters draining into its soil it is practically a morass whose ground water fluctuates with the ocean tides. There is no drainage whatever, either natural or artificial. There is no sewerage, the ground having been soiled with animal products for a century, since the time of Captain Cook, notwithstanding hundreds of millions of dollars made on the place or rather from the place by its inhabitants. Drinking-water is supplied partly from a shallow artesian well sunk in the middle of the town, immediately under the filthy Portuguese quarters and cemeteries, from which water is pumped into an elevated reservoir; the principal supply comes from some ponds in a neighboring valley, at about one thousand feet altitude. Those ponds are fed by a stream which owes its existence to the rain-water of the surrounding mountain slopes, which are utilized as cattle pastures.

These are the general facts concerning the local climate of Honolulu, where both malaria and typhoid fever are endemic. There are no pernicious forms that could be compared with those of other tropical countries, but malarial influence is generally felt as a chronic condition by everybody who does not possess a strong natural immunity. Objectively this influence is manifested in the loss of weight, all the symptoms of tropical anæmia, a pale, sick, sallow complexion, etc.; subjectively it is felt as nervous and muscular debility, rendering long and steady exertion difficult. It is not the temperature but these miasmatic influences that render the local Honolulu climate debilitating and make every pathological process assume asthenic characters. In its pure and acute manifestations this malaria is but seldom intermittent; mostly it is remittent and accompanied by certain typhoid features, on account of which it is called "typhoid malaria." It is unaffected by quinine, but proves very seldom fatal, though it may last several weeks.

The sporadic cases of the real typhoid fever, due to the lack of sewerage in town and to the use of animal fertilizers in the country, are far from being so common. In fact, it is not any more frequent here than in any part of the American continent under similar conditions. The asthenic character due to the unabating influence of malaria is the only peculiarity it possesses. The question whether the epidemic among the United States troops is real typhoid fever or "typhoid malaria" is not yet settled between the military and local sanitary authorities. It is not settled because in reality it is both malaria and typhoid fever, or rather typhoid fever whose course is affected by local malaria.

In short, the diagnosis of this epidemic runs thus: The germs are imported by the troops themselves and probably are more virulent than those we usually have to deal with in this country. Their virulence is still increased through the debilitated condition of the troops as well as by the asthenic influence of local malaria. Inferring from causes, we may say that this and other similar epidemics might have been prevented: (1) By paying more attention to the character of the former occupations of volunteers. (2) By a better organization of the supply service and the adoption of more hygiene in camps and especially on transports. (3) By the immediate scattering of troops upon landing in foreign ports, in small detachments over the surrounding country, viz., upon the neighboring hills and plateaus, the sanitary reputation of which, at least for the Hawaiian Islands, is above all suspicion. (4) By providing camps with pure and healthy drinking-water. These are old truths; but the older they are, the more frequently they have to be repeated.

Medical Items.

German University Students have increased in numbers from 10,000 twenty-five years ago to 32,241 last year. The increase is out of all proportion to the population.—*Scientific American.*

The Coming Season in Cairo.—In spite of the absence of the German Emperor, the season promises to be exceptionally good. The principal hotels have already double the number of visitors which they had last November, and most of the dahabiyehs on the Nile have been engaged. Two new hotels will be opened next month, and several existing ones have enlarged their premises during the winter.—*London Lancet.*

Nurses and Women Doctors.—In an address given at the Royal Free Hospital in London a short time ago, Dr. I. Walter Carr made some exceedingly apt remarks in reference to the extraordinary development of nursing during the last generation, and expressed the fear that there was possibly a danger of its being carried too far in private work, and especially in the homes of the middle classes. The same speaker also touched upon the question of women doctors, and discussed their present position. He asked if they were a merely passing fancy, or were destined to take a permanent place in medicine. The question might seem superfluous, in view of the rapid progress they were making, but if the movement became fashionable, and unsuitable women were led to enter the profession, a reaction might easily arise and jeopardize the cause.

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